307.22 Chronic Motor or Vocal Tic Disorder

The essential features of this disorder are either motor or vocal tics, but not both (as in Tourette's Disorder). The other characteristics of the disorder are generally the same as Tourette's Disorder, except that the severity of the symptoms and the functional impairment are usually much less.

Familial pattern. Both Chronic Motor or Vocal Tic Disorder and Tourette's Disorder frequently occur in the same families and appear to be genetically related.

Differential diagnosis. In **Transient Tic Disorder,** the duration of the disturbance is always less than one year. In **Tourette's** Disorder there are both motor and vocal tics. A rare disorder of adolescence and adulthood, sometimes referred to as "psychogenic cough," or "chronic cough of adolescence," is distinguished from Chronic Motor or Vocal Tic Disorder by the monosymptomatic and intentional nature of the symptom.

Diagnostic criteria for 307.22 Chronic Motor or Vocal Tic Disorder

A. Either motor or vocal tics, but not both, have been present at some time during the illness.

B. The tics occur many times a day, nearly every day, or intermittently throughout a period of more than one year.

C. Onset before age 21.

D. Occurrence not exclusively during Psychoactive Substance Intoxication or known central nervous system disease, such as Huntington's chorea and postviral encephalitis.

307.21 Transient Tic Disorder

The essential feature of this disorder is single or multiple motor and/or vocal tics that occur many times a day, nearly every day for at least two weeks, but for no longer than twelve consecutive months. (Thus, the diagnosis is not made if there is a history of Tourette's or Chronic Motor or Vocal Tic Disorder, both of which require a duration of at least one year.)

The most common tic is eye-blinking or another facial tic. However, the whole head, torso, or limbs may be involved. In addition, there may be vocal tics. A person may have only one or a number of tics; if the latter, the tics may be performed simultaneously, sequentially, or randomly.

Age at onset. Age at onset is always during childhood or early adolescence, and may be as early as two years of age.

Course. The tics may disappear permanently, or recur, especially during periods of stress. In rare cases, after a period of partial remission, the person may develop either Tourette's Disorder or Chronic Motor or Vocal Tic Disorder.

Complications. No information.

Diagnostic and Statistical Manual of Mental Disorders

Fourth Edition

DSM-IV™

Published by the
American Psychiatric Association
Washington, DC

Manufactured in the United States of America on acid-free paper

American Psychiatric Association
1400 K Street, N.W., Washington, DC 20005

The correct citation for this book is American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition. Washington, DC, American Psychiatric Association, 1994.

Library of Congress Cataloging-in-Publication Data
Diagnostic and statistical manual of mental disorders : DSM-IV. — 4th ed.
p. cm.
Prepared by the Task Force on DSM-IV and other committees and work groups of the American Psychiatric Association.
Includes index.
ISBN 0-89042-061-0 (hard : alk. paper). — ISBN 0-89042-062-9 (paper : alk. paper)
1. Mental illness—Classification. 2. Mental illness—Diagnosis.
I. American Psychiatric Association. II. American Psychiatric Association. Task Force on DSM-IV. III. Title: DSM-IV.
[DNLM: 1. Mental Disorders—classification. 2. Mental Disorders—diagnosis. WM 15 D536 1994]
RC455.2.C4D54 1994
616.89'075—dc20
DNLM/DLC
for Library of Congress 94-6304
CIP

British Library Cataloguing in Publication Data
A CIP record is available from the British Library.

First printing, May 1994
Second printing, July 1994
Third printing, August 1994
Fourth printing, January 1995

Text Design—Jane H. Davenport
Manufacturing—R. R. Donnelley & Sons Company

Pain Disorder. The name has been changed from DSM-III-R Somatoform Pain Disorder. The definition has been broadened to include two types of pain disorder: Pain Disorder Associated With Psychological Factors and Pain Disorder Associated With Both Psychological Factors and a General Medical Condition. In addition, Acute and Chronic specifiers are provided.

Hypochondriasis. A specifier is provided to allow the clinician to note whether the condition is of the With Poor Insight type.

Body Dysmorphic Disorder. The DSM-III-R exclusion that the belief not be of delusional intensity was dropped so that this diagnosis can now be made concurrently with a diagnosis of Delusional Disorder.

Factitious Disorders

DSM-IV provides one set of criteria for Factitious Disorder instead of the previous two, with separate types based on the predominance of presenting signs and symptoms (Psychological, Physical, Combined).

Dissociative Disorders

Dissociative Amnesia. The name has been changed from DSM-III-R Psychogenic Amnesia to be more descriptive and to be more compatible with ICD-10.

Dissociative Fugue. The name has been changed from DSM-III-R Psychogenic Fugue to be more descriptive and to be more compatible with ICD-10. The requirement for assumption of a new identity has been dropped because confusion about personal identity has been found to be the predominant symptom.

Dissociative Identity Disorder. The name has been changed from DSM-III-R Multiple Personality Disorder to be more descriptive. The DSM-III requirement that there be an inability to recall important personal information has been reinstated.

Sexual and Gender Identity Disorders

Sexual Dysfunctions. Each of the disorders listed in this section now includes a clinical significance criterion (i.e., that the dysfunction causes marked distress or interpersonal difficulty).

Female Sexual Arousal Disorder. DSM-IV returns to the DSM-III definition by dropping the DSM-III-R Item A2 that stated that the diagnosis could be given if there were subjective complaints without any difficulty with physiological arousal.

Male Erectile Disorder. DSM-IV returns to the DSM-III definition by dropping DSM-III-R Item A2, which allowed the diagnosis to be given even if there were only subjective complaints without any difficulty with physiological arousal.

Female Orgasmic Disorder. The name has been changed from DSM-III-R Inhibited Female Orgasm. Criterion A has been simplified and revised to be more in accord with clinical usage.

Male Orgasmic Disorder. The name has been changed from DSM-III-R Inhibited Male Orgasm.

Sexual Dysfunction Due to a General Medical Condition. This disorder was included in the "Genitourinary System" section of ICD-9-CM, but was not included in the DSM-III-R Classification. It is included in DSM-IV to facilitate differential diagnosis.

Substance-Induced Sexual Dysfunction. This disorder was not included in DSM-III-R and is included in DSM-IV to increase coverage and to facilitate differential diagnosis.

Transvestic Fetishism. A specifier has been added for those individuals with Transvestic Fetishism who also have persistent discomfort with gender role that does not meet criteria for Gender Identity Disorder.

Gender Identity Disorder. This DSM-IV diagnosis subsumes three DSM-III-R diagnoses: Gender Identity Disorder of Childhood; Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type (GIDAANT); and Transsexualism. It is placed in the "Sexual and Gender Identity Disorders" section rather than in the "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence," section as in DSM-III-R. The criteria set accommodates both sexes and all ages.

Eating Disorders

Anorexia Nervosa. This disorder has been moved from the "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" section to the "Eating Disorders" section of the Classification. In DSM-IV, a presentation that includes binge eating and purging that occurs exclusively during Anorexia Nervosa is no longer given a separate diagnosis of Bulimia Nervosa, but rather is subsumed as a subtype under Anorexia Nervosa. The subtyping for Anorexia Nervosa now indicates the presence of binge-eating/purging versus restricting behavior.

Bulimia Nervosa. This disorder has been moved from the "Disorders Usually First Diagnosed in Infancy, Childhood, or Adolescence" section to the "Eating Disorders" section of the Classification. An exclusion criterion has been added so that the diagnosis is not given if the behavior occurs exclusively during episodes of Anorexia Nervosa. Subtypes are provided to distinguish between purging and nonpurging types.

Sleep Disorders

The organization of this section has been changed from that in DSM-III-R. The disorders are grouped into four sections based on presumed etiology (primary, related to another

302.82 Voyeurism

The paraphiliac focus of Voyeurism involves the act of observing unsuspecting individuals, usually strangers, who are naked, in the process of disrobing, or engaging in sexual activity. The act of looking ("peeping") is for the purpose of achieving sexual excitement, and generally no sexual activity with the observed person is sought. Orgasm, usually produced by masturbation, may occur during the voyeuristic activity or later in response to the memory of what the person has witnessed. Often these individuals have the fantasy of having a sexual experience with the observed person, but in reality this rarely occurs. In its severe form, peeping constitutes the exclusive form of sexual activity. The onset of voyeuristic behavior is usually before age 15 years. The course tends to be chronic.

Diagnostic criteria for 302.82 Voyeurism

A. Over a period of at least 6 months, recurrent, intense sexually arousing fantasies, sexual urges, or behaviors involving the act of observing an unsuspecting person who is naked, in the process of disrobing, or engaging in sexual activity.

B. The fantasies, sexual urges, or behaviors cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

302.9 Paraphilia Not Otherwise Specified

This category is included for coding Paraphilias that do not meet the criteria for any of the specific categories. Examples include, but are not limited to, telephone scatologia (obscene phone calls), necrophilia (corpses), partialism (exclusive focus on part of body), zoophilia (animals), coprophilia (feces), klismaphilia (enemas), and urophilia (urine).

Gender Identity Disorders

Gender Identity Disorder

Diagnostic Features

There are two components of Gender Identity Disorder, both of which must be present to make the diagnosis. There must be evidence of a strong and persistent cross-gender identification, which is the desire to be, or the insistence that one is, of the other sex

(Criterion A). This cross-gender identification must not merely be a desire for any perceived cultural advantages of being the other sex. There must also be evidence of persistent discomfort about one's assigned sex or a sense of inappropriateness in the gender role of that sex (Criterion B). The diagnosis is not made if the individual has a concurrent physical intersex condition (e.g., androgen insensitivity syndrome or congenital adrenal hyperplasia) (Criterion C). To make the diagnosis, there must be evidence of clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion D).

In boys, the cross-gender identification is manifested by a marked preoccupation with traditionally feminine activities. They may have a preference for dressing in girls' or women's clothes or may improvise such items from available materials when genuine articles are unavailable. Towels, aprons, and scarves are often used to represent long hair or skirts. There is a strong attraction for the stereotypical games and pastimes of girls. They particularly enjoy playing house, drawing pictures of beautiful girls and princesses, and watching television or videos of their favorite female characters. Stereotypical female-type dolls, such as Barbie, are often their favorite toys, and girls are their preferred playmates. When playing "house," these boys role-play female figures, most commonly "mother roles," and often are quite preoccupied with female fantasy figures. They avoid rough-and-tumble play and competitive sports and have little interest in cars and trucks or other nonaggressive but stereotypical boy's toys. They may express a wish to be a girl and assert that they will grow up to be a woman. They may insist on sitting to urinate and pretend not to have a penis by pushing it in between their legs. More rarely, boys with Gender Identity Disorder may state that they find their penis or testes disgusting, that they want to remove them, or that they have, or wish to have, a vagina.

Girls with Gender Identity Disorder display intense negative reactions to parental expectations or attempts to have them wear dresses or other feminine attire. Some may refuse to attend school or social events where such clothes may be required. They prefer boy's clothing and short hair, are often misidentified by strangers as boys, and may ask to be called by a boy's name. Their fantasy heroes are most often powerful male figures, such as Batman or Superman. These girls prefer boys as playmates, with whom they share interests in contact sports, rough-and-tumble play, and traditional boyhood games. They show little interest in dolls or any form of feminine dress up or role-play activity. A girl with this disorder may occasionally refuse to urinate in a sitting position. She may claim that she has or will grow a penis and may not want to grow breasts or to menstruate. She may assert that she will grow up to be a man. Such girls typically reveal marked cross-gender identification in role-play, dreams, and fantasies.

Adults with Gender Identity Disorder are preoccupied with their wish to live as a member of the other sex. This preoccupation may be manifested as an intense desire to adopt the social role of the other sex or to acquire the physical appearance of the other sex through hormonal or surgical manipulation. Adults with this disorder are uncomfortable being regarded by others as, or functioning in society as, a member of their designated sex. To varying degrees, they adopt the behavior, dress, and mannerisms of the other sex. In private, these individuals may spend much time cross-dressed and working on the appearance of being the other sex. Many attempt to pass in public as the other sex. With cross-dressing and hormonal treatment (and for males, electrolysis), many individuals with this disorder may pass convincingly as the other sex. The sexual activity of these individuals with same-sex partners is generally constrained by the preference that their partners neither see nor touch their genitals. For some males who

present later in life, (often following marriage), sexual activity with a woman is accompanied by the fantasy of being lesbian lovers or that his partner is a man and he is a woman.

In adolescents, the clinical features may resemble either those of children or those of adults, depending on the individual's developmental level, and the criteria should be applied accordingly. In a younger adolescent, it may be more difficult to arrive at an accurate diagnosis because of the adolescent's guardedness. This may be increased if the adolescent feels ambivalent about cross-gender identification or feels that it is unacceptable to the family. The adolescent may be referred because the parents or teachers are concerned about social isolation or peer teasing and rejection. In such circumstances, the diagnosis should be reserved for those adolescents who appear quite cross-gender identified in their dress and who engage in behaviors that suggest significant cross-gender identification (e.g., shaving legs in males). Clarifying the diagnosis in children and adolescents may require monitoring over an extended period of time.

Distress or disability in individuals with Gender Identity Disorder is manifested differently across the life cycle. In young children, distress is manifested by the stated unhappiness about their assigned sex. Preoccupation with cross-gender wishes often interferes with ordinary activities. In older children, failure to develop age-appropriate same-sex peer relationships and skills often leads to isolation and distress, and some children may refuse to attend school because of teasing or pressure to dress in attire stereotypical of their assigned sex. In adolescents and adults, preoccupation with cross-gender wishes often interferes with ordinary activities. Relationship difficulties are common and functioning at school or at work may be impaired.

Specifiers

For sexually mature individuals, the following specifiers may be noted based on the individual's sexual orientation: **Sexually Attracted to Males, Sexually Attracted to Females, Sexually Attracted to Both,** and **Sexually Attracted to Neither.** Males with Gender Identity Disorder include substantial proportions with all four specifiers. Virtually all females with Gender Identity Disorder will receive the same specifier—Sexually Attracted to Females—although there are exceptional cases involving females who are Sexually Attracted to Males.

Recording Procedures

The assigned diagnostic code depends on the individual's current age: if the disorder occurs in childhood, the code 302.6 is used; for an adolescent or adult, 302.85 is used.

Associated Features and Disorders

Associated descriptive features and mental disorders. Many individuals with Gender Identity Disorder become socially isolated. Isolation and ostracism contribute to low self-esteem and may lead to school aversion or dropping out of school. Peer ostracism and teasing are especially common sequelae for boys with the disorder. Boys with Gender Identity Disorder often show marked feminine mannerisms and speech patterns.

The disturbance can be so pervasive that the mental lives of some individuals revolve only around those activities that lessen gender distress. They are often preoccupied with appearance, especially early in the transition to living in the opposite sex role. Relationships with one or both parents also may be seriously impaired. Some males with Gender Identity Disorder resort to self-treatment with hormones and may very rarely perform their own castration or penectomy. Especially in urban centers, some males with the disorder may engage in prostitution, which places them at high risk for human immunodeficiency virus (HIV) infection. Suicide attempts and Substance-Related Disorders are commonly associated.

Children with Gender Identity Disorder may manifest coexisting Separation Anxiety Disorder, Generalized Anxiety Disorder, and symptoms of depression. Adolescents are particularly at risk for depression and suicidal ideation and suicide attempts. In adults, anxiety and depressive symptoms may be present. Some adult males have a history of Transvestic Fetishism as well as other Paraphilias. Associated Personality Disorders are more common among males than among females being evaluated at adult gender clinics.

Associated laboratory findings. There is no diagnostic test specific for Gender Identity Disorder. In the presence of a normal physical examination, karyotyping for sex chromosomes and sex hormone assays are usually not indicated. Psychological testing may reveal cross-gender identification or behavior patterns.

Associated physical examination findings and general medical conditions. Individuals with Gender Identity Disorder have normal genitalia (in contrast to the ambiguous genitalia or hypogonadism found in physical intersex conditions). Adolescent and adult males with Gender Identity Disorder may show breast enlargement resulting from hormone ingestion, hair denuding from temporary or permanent epilation, and other physical changes as a result of procedures such as rhinoplasty or thyroid cartilage shaving (surgical reduction of the Adam's apple). Distorted breasts or breast rashes may be seen in females who wear breast binders. Postsurgical complications in genetic females include prominent chest wall scars, and in genetic males, vaginal strictures, rectovaginal fistulas, urethral stenoses, and misdirected urinary streams. Adult females with Gender Identity Disorder may have a higher than expected likelihood of polycystic ovarian disease.

Specific Age and Gender Features

Females with Gender Identity Disorders generally experience less ostracism because of cross-gender interests and may suffer less from peer rejection, at least until adolescence. In child clinic samples, there are approximately five boys for each girl referred with this disorder. In adult clinic samples, men outnumber women by about two or three times. In children, the referral bias toward males may partly reflect the greater stigma that cross-gender behavior carries for boys than for girls.

Prevalence

There are no recent epidemiological studies to provide data on prevalence of Gender Identity Disorder. Data from smaller countries in Europe with access to total population statistics and referrals suggest that roughly 1 per 30,000 adult males and 1 per 100,000 adult females seek sex-reassignment surgery.

Course

For clinically referred children, onset of cross-gender interests and activities is usually between ages 2 and 4 years, and some parents report that their child has always had cross-gender interests. Only a very small number of children with Gender Identity Disorder will continue to have symptoms that meet criteria for Gender Identity Disorder in later adolescence or adulthood. Typically, children are referred around the time of school entry because of parental concern that what they regarded as a "phase" does not appear to be passing. Most children with Gender Identity Disorder display less overt cross-gender behaviors with time, parental intervention, or response from peers. By late adolescence or adulthood, about three-quarters of boys who had a childhood history of Gender Identity Disorder report a homosexual or bisexual orientation, but without concurrent Gender Identity Disorder. Most of the remainder report a heterosexual orientation, also without concurrent Gender Identity Disorder. The corresponding percentages for sexual orientation in girls are not known. Some adolescents may develop a clearer cross-gender identification and request sex-reassignment surgery or may continue in a chronic course of gender confusion or dysphoria.

In adult males, there are two different courses for the development of Gender Identity Disorder. The first is a continuation of Gender Identity Disorder that had an onset in childhood or early adolescence. These individuals typically present in late adolescence or adulthood. In the other course, the more overt signs of cross-gender identification appear later and more gradually, with a clinical presentation in early to mid-adulthood usually following, but sometimes concurrent with, Transvestic Fetishism. The later-onset group may be more fluctuating in the degree of cross-gender identification, more ambivalent about sex-reassignment surgery, more likely to be sexually attracted to women, and less likely to be satisfied after sex-reassignment surgery. Males with Gender Identity Disorder who are sexually attracted to males tend to present in adolescence or early adulthood with a lifelong history of gender dysphoria. In contrast, those who are sexually attracted to females, to both males and females, or to neither sex tend to present later and typically have a history of Transvestic Fetishism. If Gender Identity Disorder is present in adulthood, it tends to have a chronic course, but spontaneous remission has been reported.

Differential Diagnosis

Gender Identity Disorder can be distinguished from simple **nonconformity to stereotypical sex role behavior** by the extent and pervasiveness of the cross-gender wishes, interests, and activities. This disorder is not meant to describe a child's nonconformity to stereotypic sex-role behavior as, for example, in "tomboyishness" in girls or "sissyish" behavior in boys. Rather, it represents a profound disturbance of the individual's sense of identity with regard to maleness or femaleness. Behavior in children that merely does not fit the cultural stereotype of masculinity or femininity should not be given the diagnosis unless the full syndrome is present, including marked distress or impairment.

Transvestic Fetishism occurs in heterosexual (or bisexual) men for whom the cross-dressing behavior is for the purpose of sexual excitement. Aside from cross-dressing, most individuals with Transvestic Fetishism do not have a history of childhood cross-gender behaviors. Males with a presentation that meets full criteria for Gender Identity Disorder as well as Transvestic Fetishism should be given both diagnoses. If gender dysphoria is present in an individual with Transvestic Fetishism but full criteria

for Gender Identity Disorder are not met, the specifier With Gender Dysphoria can be used.

The category **Gender Identity Disorder Not Otherwise Specified** can be used for individuals who have a gender identity problem with a **concurrent congenital intersex condition** (e.g., androgen insensitivity syndrome or congenital adrenal hyperplasia).

In **Schizophrenia,** there may rarely be delusions of belonging to the other sex. Insistence by a person with a Gender Identity Disorder that he or she is of the other sex is not considered a delusion, because what is invariably meant is that the person feels like a member of the other sex rather than truly believes that he or she is a member of the other sex. In very rare cases, however, Schizophrenia and severe Gender Identity Disorder may coexist.

Diagnostic criteria for Gender Identity Disorder

A. A strong and persistent cross-gender identification (not merely a desire for any perceived cultural advantages of being the other sex).

In children, the disturbance is manifested by four (or more) of the following:

(1) repeatedly stated desire to be, or insistence that he or she is, the other sex
(2) in boys, preference for cross-dressing or simulating female attire; in girls, insistence on wearing only stereotypical masculine clothing
(3) strong and persistent preferences for cross-sex roles in make-believe play or persistent fantasies of being the other sex
(4) intense desire to participate in the stereotypical games and pastimes of the other sex
(5) strong preference for playmates of the other sex

In adolescents and adults, the disturbance is manifested by symptoms such as a stated desire to be the other sex, frequent passing as the other sex, desire to live or be treated as the other sex, or the conviction that he or she has the typical feelings and reactions of the other sex.

B. Persistent discomfort with his or her sex or sense of inappropriateness in the gender role of that sex.

In children, the disturbance is manifested by any of the following: in boys, assertion that his penis or testes are disgusting or will disappear or assertion that it would be better not to have a penis, or aversion toward rough-and-tumble play and rejection of male stereotypical toys, games, and activities; in girls, rejection of urinating in a sitting position, assertion that she has or will grow a penis, or assertion that she does not want to grow breasts or menstruate, or marked aversion toward normative feminine clothing.

(continued)

☐ **Diagnostic criteria for Gender Identity Disorder** (*continued*)

In adolescents and adults, the disturbance is manifested by symptoms such as preoccupation with getting rid of primary and secondary sex characteristics (e.g., request for hormones, surgery, or other procedures to physically alter sexual characteristics to simulate the other sex) or belief that he or she was born the wrong sex.

C. The disturbance is not concurrent with a physical intersex condition.

D. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Code based on current age:
302.6 Gender Identity Disorder in Children
302.85 Gender Identity Disorder in Adolescents or Adults

Specify if (for sexually mature individuals):
Sexually Attracted to Males
Sexually Attracted to Females
Sexually Attracted to Both
Sexually Attracted to Neither

302.6 Gender Identity Disorder Not Otherwise Specified

This category is included for coding disorders in gender identity that are not classifiable as a specific Gender Identity Disorder. Examples include

1. Intersex conditions (e.g., androgen insensitivity syndrome or congenital adrenal hyperplasia) and accompanying gender dysphoria
2. Transient, stress-related cross-dressing behavior
3. Persistent preoccupation with castration or penectomy without a desire to acquire the sex characteristics of the other sex

302.9 Sexual Disorder Not Otherwise Specified

This category is included for coding a sexual disturbance that does not meet the criteria for any specific Sexual Disorder and is neither a Sexual Dysfunction nor a Paraphilia. Examples include

1. Marked feelings of inadequacy concerning sexual performance or other traits related to self-imposed standards of masculinity or femininity
2. Distress about a pattern of repeated sexual relationships involving a succession of lovers who are experienced by the individual only as things to be used
3. Persistent and marked distress about sexual orientation

Hayes directory

May 15, 2014

Sex Reassignment Surgery for the Treatment of Gender Dysphoria

PURPOSE OF TECHNOLOGY:

Sex reassignment surgery (SRS), which involves genital reconstruction surgery and chest surgery, is part of the treatment approach for persons with gender dysphoria (GD). Individuals with GD have persistent feelings of gender discomfort and inappropriateness of their anatomical sex, strong and ongoing cross-gender identification, and a desire to live and be accepted as a member of the opposite sex. SRS includes the surgical procedures by which the physical appearance and function of a person's existing sexual characteristics are changed to those of the other sex in an effort to resolve or minimize GD and improve quality of life.

EXECUTIVE SUMMARY:

Health Problem: People with gender dysphoria (GD) feel a severe incongruity between anatomical sex and gender identity. The prevalence of GD is 1 in 11,900 to 1 in 45,000 persons for male-to-female (MtF) and 1 in 30,400 to 1 in 200,000 persons for female-to-male (FtM) transgender persons.

The earlier term, *gender identity disorder* (GID), has given way to *gender dysphoria* (GD). This change was intended to reflect a consensus that gender nonconformity is not a psychiatric disorder, as it was previously categorized. However, since the condition may cause clinically significant distress and since a diagnosis is necessary for access to medical treatment, the new term was proposed. The diagnostic criteria for GD outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), as well as the criteria for GID in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV), require that the individual believes there is a marked difference between the gender assigned to him or her by others and the gender he or she experiences or wishes to express. Additional criteria must also be met for a diagnosis of GD.

Determinants: The determinants of GD are poorly understood. Experts believe that gender identity develops as the result of a combination of biological factors, possibly including genetic and/or prenatal and perinatal hormonal influences, and environmental influences that have psychological effects.

Treatment: Individuals with GD seeking professional help begin with psychotherapy. An American Psychiatric Association Task Force recommends 2 goals for psychotherapy: (1) to explore issues related to the individual's commitment to living in the cross-gender role; and (2) to fully explore other options for the patient including whether to live as a homosexual person without medical and surgical treatments for gender transition.

The full therapeutic approach to GD consists of 3 elements or phases, typically in the following order: (1) hormones of the desired gender, (2) real-life experience for 12 months in the desired role; and (3) surgery to change the genitalia and other sex characteristics (e.g., breast reconstruction or mastectomy). However, not everyone with GD needs or wants all elements of this triadic approach.

Technology: Sex reassignment surgery SRS involves modification of the genitalia and/or breast/chest to resemble that of the opposite sex.

For the FtM patient, surgical procedures may include mastectomy, hysterectomy, salpingo-oophorectomy, vaginectomy, metoidioplasty, scrotoplasty, urethroplasty, placement of testicular prostheses, and phalloplasty.

For the MtF patient, surgical procedures may include breast augmentation, penectomy, orchiectomy, vaginoplasty, clitoroplasty, and labiaplasty.

Rationale: The goal of SRS is to feminize or masculinize the body to facilitate an individual's desire to live in the gender role opposite from the biological sex.

Controversy: The medical necessity of SRS for the treatment of GD is under debate. The condition does not readily fit traditional concepts of medical necessity since research to date has not established anatomical or physiological anomalies associated with GD. An evidence-based assessment of the effectiveness of SRS procedures for alleviation of symptoms associated with GD and improvement of recipients' well-being can make a helpful contribution to this controversy.

Relevant Questions:

- Has SRS been shown to be effective in improving patient-important outcomes such as relief of symptoms of GD, quality of life (QOL), satisfaction with sex characteristics, psychological well being, or sexual function?
- Does SRS confer additional benefits to hormone therapy alone?
- Do outcomes vary according to which components of SRS are performed?
- Is SRS safe?
- Have definitive patient selection criteria been established for SRS as treatment for GD?

Evidence Base: Nineteen peer-reviewed studies, primarily case series, cross-sectional studies or pretest-posttest studies assessing the effectiveness of SRS were analyzed in this report. In addition, 6 case series evaluating safety outcomes in ≥ 300 MtF patients or ≥ 200 FtM patients following SRS were analyzed.

Search Dates: November 2004 to April 2014.

Sample Sizes: 35 to 376 patients for main evidence review, 202-390 patients for safety evidence.

Patients: MtF patients (6 studies), FtM patients (6 studies), both MtF and FtM patients (7 studies).

Interventions: Chest surgery only (5 studies), genital surgery only (5 studies), both chest and genital surgery (4 studies), unspecified (5 studies).

Comparisons: Transgendered patients that had undergone SRS vs. those that had not undergone SRS (5 studies) and outcomes in SRS patients that were MtF vs. FtM (1 study).

Outcome Measures: GD, QOL, sexual experience, patient satisfaction, psychological outcomes, and safety outcomes.

Follow-Up: 1 month to 7 years.

Findings: Following SRS, patients reported decreased GD, depression and anxiety, and increased QOL. The majority of SRS patients were sexually active, but the ability to orgasm varied across studies. The majority of patients were satisfied with their aesthetic results following SRS.

Gender Dysphoria: GD was decreased following SRS relative to baseline (2 studies).

Quality of Life: Transgendered patients who underwent SRS had improved QOL relative to patients that had not undergone SRS (1 study), improved QOL relative to before SRS (2 of 3 studies), and had QOL scores similar to those of the general population (2 studies).

Sexual Function: The majority of patients were sexually active following SRS (4 studies), and the ability to orgasm varied across studies (5 studies).

Patient Satisfaction: The majority of patients were satisfied with aesthetic results following SRS (10 studies).

Psychological Outcomes: Depression (3 studies) and anxiety (2 studies) decreased following SRS.

Other Outcomes: Following SRS, almost all FtM patients were able to micturate while standing (1 study), and rates of employment were high (3 studies).

Comparative Effectiveness of Hormone Therapy Alone and SRS: The evidence was too sparse to allow any conclusion regarding the comparative benefits of SRS and hormone therapy alone.

Comparative Effectiveness of Different Types of SRS: The evidence was too sparse to allow any conclusion regarding the comparative benefits of different SRS procedures.

Safety: Following SRS, there were very low rates of regret of surgery (0% to 6%) (5 studies) and suicide (2% to 3%) (3 studies). Only 6 of the 19 studies reported on complications following SRS, and the most common complications were urinary tract complications (4% to 33%) (3 studies), necrosis of tissue (1% to 10%) (6 studies), vaginal stenosis or prolapse (2% to 14%) (3 studies), and need for revision surgery (4% to 29%) (3 studies). The most common complications reported in the 6 safety studies were need for revision surgery (22% to 40%) (5 studies), urinary tract complications (40% to 41%) (2 studies), and wound healing difficulties (11% to 33%) (2 studies). The majority of studies reported a length of follow-up of at least 1 year following surgery (12 studies).

Patient Selection Criteria: There is insufficient evidence to establish patient selection criteria for SRS to treat GD. Professional groups recommend that SRS be restricted to individuals who are referred for sex reassignment services by a qualified mental health professional, and that while 1 referral is sufficient for breast or chest surgery, 2 independent referrals should be required for genital SRS. Individuals who have medical contraindications to surgery should not undergo SRS.

Quality of Evidence: Very low.

Overall, the quality of the evidence was very low due to limitations of individual studies, including small sample sizes, few studies evaluating any 1 outcome, retrospective data, lack of randomization of patients to treatment groups, failure to blind outcome assessors to group assignment, lack of a control or comparator group or

minimal adjustment for confounders, lack of baseline assessments to assess change over time, a possible procedural learning curve, and a lack of objective and validated outcome measures.

Conclusions: The evidence suggests positive benefits but because of serious limitations permit only weak conclusions regarding sex reassignment surgery (SRS) for gender dysphoria (GD). No conclusions can be made about the comparative benefits of hormone therapy alone and SRS, or about different components of SRS.

- Patients who underwent chest/breast or genital surgery were generally pleased with the aesthetic results.
- Following SRS, patients reported decreased GD, depression and anxiety, and increased quality of life.
- The majority of SRS patients were sexually active, but the ability to orgasm varied across studies.
- Complications of surgery following SRS were common and could be serious.
- Rates of regret of surgery and suicide were very low following SRS.
- Data were too sparse to draw conclusions regarding whether SRS conferred additional benefits to hormone therapy alone.
- Data were too sparse to draw conclusions regarding whether outcomes vary according to which surgeries were performed.

Hayes Rating:

C - For sex reassignment surgery (SRS) to treat gender dysphoria (GD) in adults for whom a qualified mental health professional has made a formal diagnosis of GD, have undergone hormone therapy and psychotherapy, and have undergone a "real-life" test (i.e., in which they lived as the desired gender role). This Rating reflects the reporting of some positive evidence but serious limitations in the evidence of both effectiveness and safety.

D2 - For SRS to treat GD in adolescents. This rating reflects the paucity of data of SRS in adolescents.

INSIGHTS:

- Since part of the reason for the psychopathology experienced by transgender persons has to do with the reactions or expected reactions of family and society, evolving social norms theoretically could diminish the perceived need to undergo physical changes in order to live in the desired gender role.
- The majority of the studies selected for this report reflect the diagnostic criteria of *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, rather than the somewhat expanded criteria published in 2013 in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*.

MILITARY MEDICINE, 181, 10:1182, 2016

Military Considerations in Transsexual Care of the Active Duty Member

Lt Col Irene Folaron, USAF MC; Lt Col Monica Lovasz, USAF MC†*

ABSTRACT Retention standards and policies applied to active duty members in the U.S. military who identify as transgender have recently been in evolution. The Secretary of Defense recently released a new directive allowing transgender members to serve openly with the option to transition gender while in active duty, abrogating the old policy disqualifying transgender members from continued service. There is a reasonable expectation that some may pursue medical and surgical options toward gender transition. The clinical pathway for gender transition relies heavily on Mental Health and Endocrinology services. This article highlights the medical aspects of gender transition and how they can affect readiness and the delivery of military health care.

INTRODUCTION

Recently, there has been significant activity surrounding the policies related to transgender active duty members in the U.S. military. After examining the readiness implications of allowing transgender members to serve openly over the past year, Defense Secretary Ashton B. Carter released Directive-type Memorandum (DTM) 16-005, "Military Service of Transgender Service Members." The directive states that transgender members who meet readiness standards may now serve openly, and that gender transition may occur while remaining in active duty.[1] An independent research institute estimates that there are approximately 15,500 transgender personnel currently serving in the U.S. armed forces.[2] Those who seek to initiate, continue with, or have completed gender transition will require services from the departments of Mental Health, Endocrinology, and Surgery. A recent cost analysis of gender transition-related care estimates that approximately 188 members per year may seek to transition at a cost of $5.6 million annually.[3] Although the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) basic program currently excludes coverage for civilian network referrals for care related to transgenderism,[4] modifications in this policy may soon materialize as military leadership address the appropriate provision of transgender care within the military health system (MHS). With transgender service members potentially spread throughout various military bases worldwide, there is a reasonable expectation that primary care providers (PCP) may also be expected to address the specific healthcare needs of transgender members and to understand the readiness implications of related medical interventions. The goal of this article is to review the recommended medical process for gender transition and to highlight some of the issues that may affect healthcare delivery and military readiness.

TERMINOLOGY

According to the American Psychiatric Association, the term, "transgender," refers to a broad spectrum of individuals who identify with a gender that is different from their assigned gender at birth, known as the "natal gender."[5] The term "transgender" is often used interchangeably with the term "transsexual," but there are nuances. A "transsexual" individual is one who identifies with, and seeks to be accepted as, a member of the gender opposite to their natal gender. A "male-to-female (MtF) transsexual" is an individual who was assigned a male gender at birth, but identifies as a female. Conversely, a "female-to-male (FtM) transsexual" is an individual who was assigned a female gender at birth, but identifies as a male. Since transgender individuals may not conform to conventional female or male gender roles, they may not necessarily desire any physical changes or gender reassignment. In contrast, transsexual individuals identify with the opposite gender and may seek the physical and social transformation made possible by cross-sex hormone treatments and sex reassignment surgery (SRS).[5,6] The process of "sex reassignment" involves interventions through medications and/or surgery to adapt one's appearance to the desired gender.[6] "Gender reassignment" involves the administrative steps to officially change the gender.[5]

MENTAL HEALTH—LAYING THE FOUNDATION

According to American Psychiatric Association's 2013 update to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), individuals who experience mental distress over the incongruence between their assigned gender and the gender with which they identify are diagnosed with "gender dysphoria (GD)."[5] In the DSM-5, GD has replaced the diagnosis of "gender identity disorder" in order to place the focus on the dysphoria and to diminish the pathology

*Department of Endocrinology, San Antonio Military Medical Center, MCH-ZDM-E, 3551 Roger Brooke Drive, JBSA Fort Sam Houston, TX 78234.

†559 MDG/SGH, 1760 Nellis Street, Building 5200, Joint Base San Antonio-Lackland, TX 78236.

The views expressed are those of the authors and do not reflect the official views or policies of the Department of Defense, or its components.

doi: 10.7205/MILMED-D-15-00559

associated with identity incongruence. The DSM-5 section on GD has also been uncoupled from the chapters discussing sexual dysfunction and paraphilic disorders, recognizing fundamental differences between these diagnoses. The 2009 Endocrine Society Clinical Practice Guidelines (CPG) on transsexual care recommends that the diagnosis of GD be made by a mental health professional (MHP).[6]

Medical providers may rely on MHPs to assess patient readiness and help them prepare for the psychological and social aspects of transition before, during, and after medical interventions. Existing treatments and protocols for gender reassignment have centered on carefully designed multispecialty protocols including a mental health assessment at the outset and support through the process.[7] Lifetime psychiatric comorbidity in this disorder is high, and this should be taken into account in the assessment and treatment planning of GD. Of the transgender patients studied, 39% fulfilled the criteria for current mental disorders, 71% for current and/or lifetime-associated mental disorders, and 42% of the patients were diagnosed with 1 or more personality disorders.[8] Data from an 18-year follow-up in a university gender clinic showed that suicides were one of the chief causes of mortality in MtF transsexual patients.[9] Given the likelihood that patients will require chronic mental health support, the American Psychological Association Council of Representatives adopted the Guidelines for Psychological Practice with Transgender and Gender Nonconforming People in August 2015.[10] The guidelines highlight the importance of treating minority stress, providing social support or trans-affirmative care, and adopting an interdisciplinary approach when providing care to transgender patients. During psychotherapy, psychologists will explore past experiences of prejudice, anticipate future rejection, explore sources of resilience, promote stress management strategies, and encourage the patient to cultivate a social support system. The overarching treatment goal is to assist transgender individuals achieve long-term comfort in their gender identity expression, with realistic chances for success in their relationships, education, and occupations. If patients choose to undergo hormone therapy, psychologists are called to assist patients in adjusting to the phenotypic changes seen in the initial stages of hormone therapy and how to cope with their emotions. Psychotherapy can also aid in alleviating any coexisting mental health concerns (e.g., anxiety, depression) identified during screening and assessment.[10–13] Mental Health support plays a critical role throughout the transition process and will be an enduring healthcare need for many transgender people.

ENDOCRINOLOGY—ALIGNING BODY WITH MIND

The Endocrine Society proposes a sequential approach in transsexual care to optimize mental health and physical outcomes.[6] Generally, they recommend initiation of psychotherapy, followed by cross-sex hormone treatments, then SRS. If the MHP and the patient jointly agree that hormone treatments will align the patient's gender identity with the expected somatic changes, then the patient can be referred to Endocrinology for cross-sex hormone treatments. Before starting cross-sex hormones, the Endocrine Society recommends an initial assessment to determine whether the patient satisfies a set of eligibility and readiness criteria. Salient points of these criteria include patient acknowledgement of the expected outcomes, risks, and benefits of cross-sex hormone treatments, as well as documented completion of a period of psychotherapy or Real Life Experience (RLE) for at least 3 months. RLE is the act of living and interacting with society as the identified gender. RLE is expected to help the patient gain more insight into the realities of living as a certain gender, evaluate the response of their social network, and ultimately test the patient's resolve and ability to function in a gender role. Since cross-sex hormone treatments can induce irreversible physical effects, such as infertility and skeletal changes, it is recommended that RLE is accomplished before starting hormone therapy.[6,14] There is no prescribed method to conduct RLE. The Endocrine Society recommends a minimum RLE of 3 months,[6] but some experts advocate that RLE should continue for a longer duration, generally at least 12 months.[14,15]

The goals of cross-sex hormone treatments are to (1) suppress the patient's endogenous reproductive hormone production and (2) establish a hormone profile consistent with that of the identified gender. Overall, this strategy will diminish the secondary sex characteristics of the patient's natal gender and promote the characteristics of the identified gender.[6]

Female to Male

For FtM transsexual patients, the administration of exogenous testosterone accomplishes both goals relatively well. Any form of testosterone can be prescribed, but the intramuscular and transdermal (gel or patch) forms are the most widely used in the United States. The principles of testosterone dosing in FtM transsexual patient are identical to the principles behind testosterone replacement in hypogonadal men, with a goal total testosterone level of 350 to 700 ng/dL. Physiologic and phenotypic changes can become apparent in as early as 1 month, but the maximum effect is usually delayed until 5 years or longer.[6] In the initial stages of testosterone therapy, the patient must be available for frequent clinical assessments to evaluate the physical transformation and to monitor for any adverse reactions. The Endocrine Society CPG and other experts recommend a physical examination and laboratory evaluation every 2 to 3 months in the first year of cross-sex hormone treatments, then every 6 to 12 months thereafter.[6,14,15] If testosterone administration is not monitored, major safety issues arise. Supraphysiologic testosterone will cause the desired virilization, but it will also promote erythrocytosis, hepatic dysfunction, unfavorable lipid changes, fluid

retention, and adverse psychological effects. Conversely, sustained underdosing can exert a deleterious effect on bone mineral density.[6] A few case reports have also raised concerns about the development of cancers involving breast tissue, ovaries, endometrium, cervix, and the vagina. Exogenous testosterone is aromatized to estradiol, which stimulates the endometrium and breast tissue. With scant data, however, the association between exogenous testosterone and reproductive malignancies is unclear.[16]

Male to Female

The cross-sex hormone strategy for an MtF transsexual patient is slightly more complicated. Unlike FtM transsexual patients, the additional requirement of an antiandrogen is often necessary to adequately suppress endogenous testosterone and to maximize the ability of exogenous estrogen to cause feminization. Otherwise, very high doses of estrogen would be required to suppress testosterone levels, up to 4 to 8 times the dose for a nontransgender woman. Estrogen is combined with spironolactone or gonadotropin-releasing hormone agonists to achieve a serum estradiol level commensurate with the mean daily level for a premenopausal woman, which is less than 200 pg/mL. The goal total testosterone level is aimed at the female range of less than 55 ng/dL.[6]

There are important considerations in the choice of estrogen to prescribe. The use of conjugated or synthetic estrogens, such as ethinyl estradiol, which is commonly found in oral contraceptives, are effective, but they cannot be monitored through serum measurements. In addition, ethinyl estradiol has been associated with the risk of venous thromboemboli.[6] A comparative study of hemostatic variables in MtF transsexual patients taking oral ethinyl estradiol vs. oral or transdermal 17-β-estradiol for 4 months showed a significantly more prothrombotic profile in the ethinyl estradiol group. The hemostatic value of activated protein C resistance in the ethinyl estradiol group reached comparable levels to those seen in people with heterozygous or homozygous factor V Leiden.[17] A long-term follow-up study on mortality among transsexual patients also revealed that the use of ethinyl estradiol was associated with a 3-fold increase in cardiovascular mortality.[9] Therefore, 17-β-estradiol, not ethinyl estradiol, is the recommended form of estrogen for cross-sex hormone treatments. Phenotypic and physiologic changes can manifest in as early 1 month, with maximum effect at about 3 years or longer. Identical to the approach with FtM transsexual patients, a physical examination and laboratory follow-up every 2 to 3 months is recommended in the first year, then every 6 to 12 months thereafter. Unmonitored administration of estrogen and anti-androgens is not advised, as it can lead to biochemical abnormalities such as hyperkalemia, hyperprolactinemia, and hepatic dysfunction. Cancer screening is also paramount given some concerns for breast cancer and possibly prostate cancer associated with estrogen therapy.[6,18] For all transsexual patients with or without a history of SRS, regular surveillance of hormone levels, age-appropriate cancer screening, and an assessment for adverse events are essential elements of their healthcare.

SEX REASSIGNMENT SURGERY—CONTINUING THE PHYSICAL TRANSFORMATION

SRS encompasses multiple types of surgical procedures intended to complement the physical transition. Procedures such as facial feminization surgery, breast augmentation, or a mastectomy can help to improve aesthetic outcomes after a course of cross-sex hormone treatments. Eventually, patients may pursue gonadectomy and genital reconstruction.

In FtM transsexual patients, it is recommended that the uterus and ovaries are removed since malignancy in these organs can be difficult to detect. Clitoral hypertrophy is expected with exogenous testosterone, which may be sufficient to serve as a phallus. If not, surgical procedures are available to create a neophallus with the addition of rigid or inflatable implants.[14]

For MtF transsexual patients, orchidectomy and neovaginoplasty are performed, but there is no standardized procedure. Depending on the procedure, complications can range from urinary tract dysfunction to neovaginal strictures requiring reoperation. In these procedures, the prostate is generally left intact, so the risks of prostate hyperplasia and cancer remain.[18,19] Breast augmentation is often delayed until after 2 years of estrogen therapy since breast tissue may continue to enlarge with estrogen stimulation.[6]

Similar to the eligibility and readiness criteria in initiating cross-sex hormone treatments, the Endocrine Society has also proposed criteria for SRS. The criteria require that the patient has been on continuous cross-sex hormones and has had continuous RLE or psychotherapy for the past 12 months. Like any surgery, the criteria also require patient acknowledgement of the expected outcomes, risks, and benefits of SRS.[6] As procedures have evolved over the past several years, experts agree that aesthetic and functional outcomes have significantly improved. Mental health and quality of life are reported to improve following SRS.[6,14,15] The surgical team and endocrinologist will need to coordinate with each other to address any necessary adjustments in hormone regimens peri-operatively and postoperatively. After gonadectomy, the patient will continue to require cross-sex hormone therapy to avoid the consequences of hormone deficiency.[6]

MILITARY IMPLICATIONS

There are military-specific challenges to each aspect of transgender care, from diagnosis, gender transition, and beyond. Although not all-encompassing, some of these challenges include potential limitations in duty station options, deployment restrictions, and ensuring provider competencies.

The decision process in assigning active duty members to permanent duty stations includes any ongoing medical requirements or limitations. If a member is diagnosed with a new condition that requires specialty services, their local military treatment facility (MTF) will determine whether they are capable of treating the member or if external resources are needed. As previously discussed, a new diagnosis of gender dysphoria and the decision to proceed with gender transition requires frequent evaluations by the MHP and endocrinologist. However, most MTFs lack one or both of these specialty services. Members who are not in proximity to MTFs may have significant commutes to reach their required specialty care. Members stationed in more remote locations face even greater challenges of gaining access to military or civilian specialists within a reasonable distance from their duty stations. Depending on the frequency of clinic visits, members may require multiple work absences with associated loss in productivity. If medical requirements become too burdensome, then the possibility of changing the member's permanent duty station may need to be entertained. An option to mitigate this problem is to have PCPs in smaller clinics manage gender transition with remote guidance from specialty providers. However, the feasibility and safety of this approach is questionable, especially when physical examination findings are being monitored in the earlier phases of gender transition. For members stationed in smaller bases with limited medical capabilities, enduring specialty and other healthcare needs will limit a member's options in duty stations and, for some, require a reassignment.

The recommended follow-up schedule for members undergoing cross-sex hormone therapy will affect readiness and deployability. Close physical and laboratory monitoring is recommended in the first year of hormone therapy with a recommended follow-up interval of 2 to 3 months.[6,14,15] To ensure appropriate surveillance during the initial phases of cross-sex hormone treatments, the active duty member will require restrictions from duties with extended absences, such as a military deployment. Given the specialized laboratory requirements for monitoring, it is highly unlikely that members can receive comparable care in a combat theater. After the first year of cross-sex hormone treatments, those without any adverse reactions and on stable doses should require less frequent follow-up. Mobility restrictions can then be adjusted based on the member's needs. However, for the first year of gender transition, it is essential that the member is available at their duty station to accomplish all medically necessary exams.

Transsexual members require indefinite cross-sex hormones, which require chronic follow-up to ensure appropriate hormone levels and continued tolerance. However, the level of experience and comfort among military PCPs regarding long-term management of transgender members is unknown. Modern versions of the medical education curricula have added content in the specific healthcare needs of the lesbian, gay, bisexual, and transgender (LGBT) population, but clinical competencies remain variable. Survey responses from deans of U.S. and Canadian medical schools regarding LGBT content in their curricula revealed that the topic of gender identity was addressed by most of the schools surveyed. However, less than half of them included content on gender transition.[20] The same research group found that U.S. and Canadian medical students, when questioned about their comfort level in providing care for the LGBT community, were least prepared addressing SRS and gender transitioning.[21] The sentiment is likely to be similar among military PCPs since academic MTFs utilize the same medical education milestones as their civilian counterparts. With the scarcity of specialists throughout the military health system, this leaves the question as to which clinical entity would be the most appropriate to provide long-term surveillance. It is uncertain whether military PCPs will be willing or able to provide comprehensive transgender care under the guidance of published CPGs and remote coordination with specialists. Perhaps additional military-unique training, "extender" provider courses, or outreach programs are needed. With a variable experience base and inadequate specialist availability, there is a risk of significant disparity in how transgender care will be delivered in the military.

CONCLUSION

Recent changes in military retention standards challenges the MHS to create a clinical pathway to address the medical needs of transgender members. Mental Health and Endocrine services are at the forefront of this process, but the PCP will remain integral to the coordination and provision of long-term care. As outlined in this article, gender transition can raise broad issues in medical, readiness, and social matters for the active duty member. Those who care for and supervise transgender members will require education and guidance to ensure the member receives appropriate healthcare while promoting readiness. In this endeavor, the goal of this article has been to educate healthcare leaders, clinicians, and military commanders on the mental health and medical needs of a member pursuing gender transition, as well as to highlight a few military-specific challenges. Awareness of these challenges and preparedness are ways by which the military health system can support the military mission while continuing to provide the best healthcare possible to all active duty members.

REFERENCES

1. Directive-type Memorandum 16-005, Military Service of Transgender Service Members. Published June 30, 2016.
2. Pollock GS, Minter S: Report of the Planning Commission on Transgender Military Service. Available at www.palmcenter.org; accessed July 22, 2015.
3. Belkin A: Caring for our transgender troops—the negligible cost of transition-related care. N Engl J Med 2015; 373(12): 1089–91.
4. Code of Federal Regulations: Title 32 National Defense, CFR 199.4 Basic Program Benefits. Available at www.gpo.gov; accessed July 22, 2015.

5. American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Ed 5. Arlington, VA, American Psychiatric Association, 2013.
6. Hembree WC, Cohen-Kettenis P, Delemarre-van de Waal HA, et al: Endocrine treatment of transsexual persons: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab 2009; 94: 3132–54.
7. Lev A: The ten tasks of the mental health provider: recommendations for revision of the World Professional Association for Transgender Health's standards of care. Int J Transgend 2009; 11(2): 74–99.
8. Hepp U, Kraemer B, Schnyder U, Miller N, Delsignore A: Psychiatric comorbidity in gender identity disorder. J Psychosom Res 2005; 58(3): 259–61.
9. Asscheman H, Giltay EJ, Megens JAJ, de Ronde W, van Trotsenburg MAA, Gooren LJ: A long-term follow-up study of mortality in transsexuals receiving treatment with cross-sex hormones. Eur J Endocrinol 2011; 164: 635–42.
10. American Psychological Association: Guidelines for psychological practice with transgender and gender nonconforming people. Available at http://www.apa.org/practice/guidelines/transgender.pdf; accessed August 23, 2015.
11. Coleman E, Bockting W, Botzer M, et al; Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. Int J Transgend 2012; 13: 165–232.
12. Bockting WO, Goldberg JM: Guidelines for transgender care (Special issue). Int J Transgend 2006; 9(3/4).
13. Bockting WO, Coleman E: Developmental stages of the transgender coming out process: toward an integrated identity. In: Principles of Transgender Medicine and Surgery, pp 185–208. Edited by Ettner R, Monstrey S, Eyler A. New York, NY, The Haworth Press, 2007.
14. Gooren LJ: Care of transsexual persons. N Engl J Med 2011; 364: 1251–7.
15. Spack NP: Management of transgenderism. JAMA 2013; 309(5): 478–84.
16. Meriggiola MC, Gava G: Endocrine care of transpeople part 1. A review of cross-sex hormonal treatments, outcomes and adverse effects in transmen. Clin Endocrinol 2015; 83: 597–606.
17. Toorians AW, Thomassen MC, Zweegman S, et al: Venous Thrombosis and Changes of Hemostatic Variables during Cross-Sex Hormone Treatment in Transsexual People. J Clin Endocrinol Metab 2003; 88: 5723–9.
18. Meriggiola MC, Gava G: Endocrine care of transpeople part 2. A review of cross-sex hormonal treatments, outcomes and adverse effects in transwomen. Clin Endocrinol 2015; 0: 1–9.
19. Horbach SER, Bouman MB, Smit JM, Ozer M, Buncamper ME, Mullender MG: Outcomes of Vaginoplasty in Male-to-Female transgenders: a systematic review of surgical techniques. J Sex Med 2015; 12: 1499–512.
20. Obedin-Maliver J, Goldsmith ES, Stewart L, et al: Lesbian, gay, bisexual, and transgender-related content in undergraduate medical education. JAMA 2011; 306(9): 971–7.
21. White W, Brenman W, Paradis E, et al: Lesbian, gay, bisexual, and transgender patient care: medical students' preparedness and comfort. Teach Learn Med 2015; 27(3): 254–63.

SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUL 28 2015

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS

SUBJECT: Transgender Service Members

Effective as of July 13, 2015, no Service member shall be involuntarily separated or denied reenlistment or continuation of active or reserve service on the basis of their gender identity, without the personal approval of the Under Secretary of Defense for Personnel and Readiness. This approval authority may not be further delegated.

The Under Secretary of Defense for Personnel and Readiness will chair a working group composed of senior representatives from each of the Military Departments, Joint Staff, and relevant components from the Office of the Secretary of Defense to formulate policy options for the DoD regarding the military service of transgender Service members. The working group will start with the presumption that transgender persons can serve openly without adverse impact on military effectiveness and readiness, unless and except where objective, practical impediments are identified, and shall present its recommendations to me within 180 days. Pending the issuance of DoD-wide policy following the submission of the working group's report, any interim guidance issued by the Military Departments will be coordinated with, and subject to the prior personal approval of, the Under Secretary of Defense for Personnel and Readiness. If questions relating to the service of transgender members arise, the Military Departments should address them to the Under Secretary of Defense for Personnel and Readiness.

Ash Carter

cc:
DepSecDef
CJCS
USDs
DoD, GC
ASD(LA)
ATSD(PA)

SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUN 3 0 2016

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
DEPUTY CHIEF MANAGEMENT OFFICER
CHIEF OF THE NATIONAL GUARD BUREAU
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, COST ASSESSMENT AND PROGRAM EVALUATION
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION
DEPARTMENT OF DEFENSE CHIEF INFORMATION OFFICER
ASSISTANT SECRETARY OF DEFENSE FOR LEGISLATIVE AFFAIRS
ASSISTANT TO THE SECRETARY OF DEFENSE FOR PUBLIC AFFAIRS
DIRECTOR, NET ASSESSMENT
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES

SUBJECT: Directive-type Memorandum (DTM) 16-005, "Military Service of Transgender Service Members"

References: DoD Directive 1020.02E, "Diversity Management and Equal Opportunity in the DoD," June 8, 2015
DoD Directive 1350.2, "Department of Defense Military Equal Opportunity (MEO) Program," August 18, 1995
DoD Instruction 6130.03, "Medical Standards for Appointment, Enlistment, or Induction in the Military Services," April 28, 2010, as amended

Purpose. This DTM:

- Establishes policy, assigns responsibilities, and prescribes procedures for the standards for retention, accession, separation, in-service transition, and medical coverage for transgender personnel serving in the Military Services.

- Except as otherwise noted, this DTM will take effect immediately. It will be converted to a new DoDI. This DTM will expire effective June 30, 2017.

Applicability. This DTM applies to OSD, the Military Departments (including the Coast Guard at all times, including when it is a Service in the Department of Homeland Security by agreement with that Department), the Office of the Chairman of the Joint Chiefs of Staff and the

Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD.

Policy.

- The defense of the Nation requires a well-trained, all-volunteer force comprised of Active and Reserve Component Service members ready to deploy worldwide on combat and operational missions.

- The policy of the Department of Defense is that service in the United States military should be open to all who can meet the rigorous standards for military service and readiness. Consistent with the policies and procedures set forth in this memorandum, transgender individuals shall be allowed to serve in the military.

- These policies and procedures are premised on my conclusion that open service by transgender Service members while being subject to the same standards and procedures as other members with regard to their medical fitness for duty, physical fitness, uniform and grooming, deployability, and retention, is consistent with military readiness and with strength through diversity.

Responsibilities

- The Secretaries of the Military Departments will:

  - Take immediate action to identify all DoD, Military Department, and Service issuances, the content of which relate to, or may be affected by, the open service of transgender Service members.

  - Draft revisions to the issuances identified, and, as necessary and appropriate, draft new issuances, consistent with the policies and procedures in this memorandum.

  - Submit to the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) the text of any proposed revisions to existing Military Department and Service regulations, policies, and guidance, and of any proposed new issuance, no later than 30 days in advance of the proposed publication date of each.

- The USD(P&R) will:

  - Take immediate action to identify all DoD, Military Department, and Service issuances, the content of which relate to, or may be affected by, the open service of transgender Service members.

- Draft revisions to the issuances identified in this memorandum and, as necessary and appropriate, draft new issuances consistent with the policies and procedures in this memorandum.

Procedures. See Attachment.

Releasability. **Cleared for public release.** This DTM is available on the DoD Issuances Website at http://www.dtic.mil/whs/directives.

Ash Carter

Attachment:
As stated

cc:
Secretary of Homeland Security
Commandant, United States Coast Guard

ATTACHMENT

PROCEDURES

1. SEPARATION AND RETENTION

a. Effective immediately, no otherwise qualified Service member may be involuntarily separated, discharged or denied reenlistment or continuation of service, solely on the basis of their gender identity.

b. Transgender Service members will be subject to the same standards as any other Service member of the same gender; they may be separated, discharged, or denied reenlistment or continuation of service under existing processes and basis, but not due solely to their gender identity or an expressed intent to transition genders.

c. A Service member whose ability to serve is adversely affected by a medical condition or medical treatment related to their gender identity should be treated, for purposes of separation and retention, in a manner consistent with a Service member whose ability to serve is similarly affected for reasons unrelated to gender identity or gender transition.

2. ACCESSIONS

a. Medical standards for accession into the Military Services help to ensure that those entering service are free of medical conditions or physical defects that may require excessive time lost from duty. Not later than July 1, 2017, the USD(P&R) will update DoD Instruction 6130.03 to reflect the following policies and procedures:

(1) A history of gender dysphoria is disqualifying, **unless**, as certified by a licensed medical provider, the applicant has been stable without clinically significant distress or impairment in social, occupational, or other important areas of functioning for 18 months.

(2) A history of medical treatment associated with gender transition is disqualifying, **unless**, as certified by a licensed medical provider:

(a) the applicant has completed all medical treatment associated with the applicant's gender transition; and

(b) the applicant has been stable in the preferred gender for 18 months; and

(c) If the applicant is presently receiving cross-sex hormone therapy post-gender transition, the individual has been stable on such hormones for 18 months.

(3) A history of sex reassignment or genital reconstruction surgery is disqualifying, **unless**, as certified by a licensed medical provider:

(a) a period of 18 months has elapsed since the date of the most recent of any such surgery; and

(b) no functional limitations or complications persist, nor is any additional surgery required.

b. The Secretaries of the Military Departments and the Commandant, United States Coast Guard, may waive or reduce the 18-month periods, in whole or in part, in individual cases for applicable reasons.

c. The standards for accession described in this memorandum will be reviewed no later than 24 months from the effective date of this memorandum and may be maintained or changed, as appropriate, to reflect applicable medical standards and clinical practice guidelines, ensure consistency with military readiness, and promote effectiveness in the recruiting and retention policies and procedures of the Armed Forces.

3. IN-SERVICE TRANSITION

a. Effective October 1, 2016, DoD will implement a construct by which transgender Service members may transition gender while serving, in accordance with DoDI 1300.28, which I signed today.

b. Gender transition while serving in the military presents unique challenges associated with addressing the needs of the Service member in a manner consistent with military mission and readiness needs.

4. MEDICAL POLICY. Not later than October 1, 2016, the USD(P&R) will issue further guidance on the provision of necessary medical care and treatment to transgender Service members. Until the issuance of such guidance, the Military Departments and Services will handle requests from transgender Service members for particular medical care or to transition on a case-by-case basis, following the spirit and intent of this memorandum and DoDI 1300.28.

5. EQUAL OPPORTUNITY

a. All Service members are entitled to equal opportunity in an environment free from sexual harassment and unlawful discrimination on the basis of race, color, national origin, religion, sex, or sexual orientation. It is the Department's position, consistent with the U.S. Attorney General's opinion, that discrimination based on gender identity is a form of sex discrimination.

b. The USD(P&R) will revise DoD Directives (DoDDs) 1020.02E," Diversity Management and Equal Opportunity in the DoD," and 1350.2,"Department of Defense Military Equal Opportunity (MEO) Program," to prohibit discrimination on the basis of gender identity and to incorporate such prohibitions in all aspects of the DoD MEO program. The USD(P&R) will prescribe the period of time within which Military Department and Service issuances implementing the MEO program must be conformed accordingly.

6. EDUCATION AND TRAINING

a. The USD(P&R) will expeditiously develop and promulgate education and training materials to provide relevant, useful information for transgender Service members, commanders, the force, and medical professionals regarding DoD policies and procedures on transgender service. The USD(P&R) will disseminate these training materials to all Military Departments and the Coast Guard not later than October 1, 2016.

b. Not later than November 1, 2016, each Military Department will issue implementing guidance and a written force training and education plan. Such plan will detail the Military Department's plan and program for training and educating its assigned force (to include medical professionals), including the standards to which such education and training will be conducted, and the period of time within which it will be completed.

7. IMPLEMENTATION AND TIMELINE

a. Not later than October 1, 2016, the USD(P&R) will issue a Commander's Training Handbook, medical guidance, and guidance establishing procedures for changing a Service member's gender marker in DEERS.

b. In the period between the date of this memorandum and October 1, 2016, the Military Departments and Services will address requests for gender transition from serving transgender Service members on a case-by-case basis, following the spirit and intent of this memorandum and DoDI 1300.28.

SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

JUN 30 2017

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF

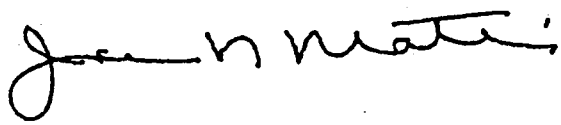
SUBJECT: Accession of Transgender Individuals into the Military Services

Since becoming the Secretary of Defense, I have emphasized that the Department of Defense must measure each policy decision against one critical standard: will the decision affect the readiness and lethality of our armed forces? Put another way, how will the decision affect the ability of America's military forces to defend the Nation? It is against this standard that I provide the following guidance on the way forward in accessing transgender individuals into the military Services.

Under existing DoD policy, such accessions were anticipated to begin on July 1, 2017. The Deputy Secretary directed the Services to assess their readiness to begin accessions. Building upon that work and after consulting with the Service Chiefs and Secretaries, I have determined that it is necessary to defer the start of accessions for six months. We will use this additional time to evaluate more carefully the impact of such accessions on readiness and lethality. This review will include all relevant considerations.

My intent is to ensure that I personally have the benefit of the views of the military leadership and of the senior civilian officials who are now arriving in the Department. This action in no way presupposes the outcome of the review, nor does it change policies and procedures currently in effect under DoD Instruction 1300.28, "In-Service Transition for Transgender Service Members." I am confident we will continue to treat all Service members with dignity and respect.

The Under Secretary of Defense for Personnel and Readiness will lead this review and will report the results to me not later than December 1, 2017.



THE WHITE HOUSE

WASHINGTON

August 25, 2017

MEMORANDUM FOR THE SECRETARY OF DEFENSE
THE SECRETARY OF HOMELAND SECURITY

SUBJECT: Military Service by Transgender Individuals

Section 1. Policy. (a) Until June 2016, the Department of Defense (DoD) and the Department of Homeland Security (DHS) (collectively, the Departments) generally prohibited openly transgender individuals from accession into the United States military and authorized the discharge of such individuals. Shortly before President Obama left office, however, his Administration dismantled the Departments' established framework by permitting transgender individuals to serve openly in the military, authorizing the use of the Departments' resources to fund sex-reassignment surgical procedures, and permitting accession of such individuals after July 1, 2017. The Secretary of Defense and the Secretary of Homeland Security have since extended the deadline to alter the currently effective accession policy to January 1, 2018, while the Departments continue to study the issue.

In my judgment, the previous Administration failed to identify a sufficient basis to conclude that terminating the Departments' longstanding policy and practice would not hinder military effectiveness and lethality, disrupt unit cohesion, or tax military resources, and there remain meaningful concerns that further study is needed to ensure that continued implementation of last year's policy change would not have those negative effects.

(b) Accordingly, by the authority vested in me as President and as Commander in Chief of the Armed Forces of the United States under the Constitution and the laws of the United States of America, including Article II of the Constitution, I am directing the Secretary of Defense, and the Secretary of Homeland Security with respect to the U.S. Coast Guard, to return to the longstanding policy and practice on military service by transgender individuals that was in place prior to June 2016 until such time as a sufficient basis exists

upon which to conclude that terminating that policy and practice would not have the negative effects discussed above. The Secretary of Defense, after consulting with the Secretary of Homeland Security, may advise me at any time, in writing, that a change to this policy is warranted.

Sec. 2. Directives. The Secretary of Defense, and the Secretary of Homeland Security with respect to the U.S. Coast Guard, shall:

(a) maintain the currently effective policy regarding accession of transgender individuals into military service beyond January 1, 2018, until such time as the Secretary of Defense, after consulting with the Secretary of Homeland Security, provides a recommendation to the contrary that I find convincing; and

(b) halt all use of DoD or DHS resources to fund sex-reassignment surgical procedures for military personnel, except to the extent necessary to protect the health of an individual who has already begun a course of treatment to reassign his or her sex.

Sec. 3. Effective Dates and Implementation. Section 2(a) of this memorandum shall take effect on January 1, 2018. Sections 1(b) and 2(b) of this memorandum shall take effect on March 23, 2018. By February 21, 2018, the Secretary of Defense, in consultation with the Secretary of Homeland Security, shall submit to me a plan for implementing both the general policy set forth in section 1(b) of this memorandum and the specific directives set forth in section 2 of this memorandum. The implementation plan shall adhere to the determinations of the Secretary of Defense, made in consultation with the Secretary of Homeland Security, as to what steps are appropriate and consistent with military effectiveness and lethality, budgetary constraints, and applicable law. As part of the implementation plan, the Secretary of Defense, in consultation with the Secretary of Homeland Security, shall determine how to address transgender individuals currently serving in the United States military. Until the Secretary has made that determination, no action may be taken against such individuals under the policy set forth in section 1(b) of this memorandum.

Sec. 4. Severability. If any provision of this memorandum, or the application of any provision of this memorandum, is held to be invalid, the remainder of this

memorandum and other dissimilar applications of the provision shall not be affected.

Sec. 5. General Provisions. (a) Nothing in this memorandum shall be construed to impair or otherwise affect:

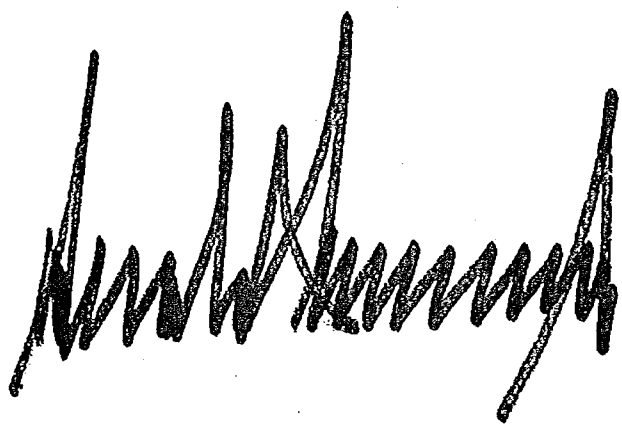
(i) the authority granted by law to an executive department or agency, or the head thereof; or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(d) The Secretary of Defense is authorized and directed to publish this memorandum in the *Federal Register*.



SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

9/14/17

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
COMMANDANT, U.S. COAST GUARD
DEPUTY CHIEF MANAGEMENT OFFICER
CHIEF, NATIONAL GUARD BUREAU
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
DIRECTOR OF COST ASSESSMENT AND PROGRAM EVALUATION
INSPECTOR GENERAL OF THE DEPARTMENT OF DEFENSE
DIRECTOR OF OPERATIONAL TEST AND EVALUATION
CHIEF INFORMATION OFFICER OF THE DEPARTMENT OF DEFENSE
ASSISTANT SECRETARY OF DEFENSE FOR LEGISLATIVE AFFAIRS
ASSISTANT TO THE SECRETARY OF DEFENSE FOR PUBLIC AFFAIRS
DIRECTOR OF NET ASSESSMENT
DIRECTOR, STRATEGIC CAPABILITIES OFFICE
DIRECTORS OF DEFENSE AGENCIES
DIRECTORS OF DOD FIELD ACTIVITIES

SUBJECT: Terms of Reference - Implementation of Presidential Memorandum on Military Service by Transgender Individuals

Reference: Military Service by Transgender Individuals – Interim Guidance

I direct the Deputy Secretary of Defense and the Vice Chairman of the Joint Chiefs of Staff to lead the Department of Defense (DoD) in developing an Implementation Plan on military service by transgender individuals, to effect the policy and directives in Presidential Memorandum, *Military Service by Transgender Individuals*, dated August 25, 2017 ("Presidential Memorandum"). The implementation plan will establish the policy, standards and procedures for service by transgender individuals in the military, consistent with military readiness, lethality, deployability, budgetary constraints, and applicable law.

The Deputy Secretary and the Vice Chairman, supported by a panel of experts drawn from DoD and the Department of Homeland Security (DHS) ("Panel"), shall propose for my consideration recommendations supported by appropriate evidence and information, not later than January 15, 2018. The Deputy Secretary and the Vice Chairman will be supported by the Panel, which will be comprised of the Military Department Under Secretaries, Service Vice Chiefs, and Service Senior Enlisted Advisors. The Deputy Secretary and Vice Chairman shall

[redacted]

designate personnel to support the Panel's work to ensure Panel recommendations reflect senior civilian experience, combat experience, and expertise in military operational effectiveness. The Panel and designated support personnel shall bring a comprehensive, holistic, and objective approach to study military service by transgender individuals, focusing on military readiness, lethality, and unit cohesion, with due regard for budgetary constraints and consistent with applicable law. The Panel will be chaired by the Under Secretary of Defense for Personnel and Readiness and will report to the Deputy Secretary and the Vice Chairman at least every 30 days and address, at a minimum, the following three areas:

Accessions: The Presidential Memorandum directs DoD to maintain the policy currently in effect, which generally prohibits accession of transgender individuals into military service. The Panel will recommend updated accession policy guidelines to reflect currently accepted medical terminology.

Medical Care: The Presidential Memorandum halts the use of DoD or DHS resources to fund sex-reassignment surgical procedures for military personnel, effective March 23, 2018, except to the extent necessary to protect the health of an individual who has already begun a course of treatment to reassign his or her sex. The implementation plan will enumerate the specific surgical procedures associated with sex reassignment treatment that shall be prohibited from DoD or DHS resourcing unless necessary to protect the health of the Service member.

Transgender Members Serving in the Armed Forces: The Presidential Memorandum directs that the Department return to the longstanding policy and practice on military service by transgender individuals that was in place prior to June 2016. The Presidential Memorandum also allows the Secretary to determine how to address transgender individuals currently serving in the Armed Forces. The Panel will set forth, in a single policy document, the standards and procedures applicable to military service by transgender persons, with specific attention to addressing transgender persons currently serving. The Panel will develop a universal retention standard that promotes military readiness, lethality, deployability, and unit cohesion.

To support its efforts, the Panel will conduct an independent multi-disciplinary review and study of relevant data and information pertaining to transgender Service members. The study will be planned and executed to inform the Implementation Plan. The independent multi-disciplinary review and study will address aspects of medical care and treatment, personnel management, general policies and practices, and other matters, including the effects of the service of transgender persons on military readiness, lethality, deployability, and unit cohesion.

The Panel may obtain advice from outside experts on an individual basis. The recommendations of the Deputy Secretary and the Vice Chairman will be coordinated with senior civilian officials, the Military Departments, and the Joint Staff.

All DoD Components will cooperate fully in, and will support the Deputy Secretary and the Vice Chairman in their efforts, by making personnel and resources available upon request in support of their efforts.

James Mattis

cc:
Secretary of Homeland Security

Mental Health Disorder Prevalence among Active Duty Service Members in the Military Health System, Fiscal Years 2005–2016

Prepared by the Deployment Health Clinical Center

Released January 2017 by Deployment Health Clinical Center, a Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury Center.
This product is reviewed annually and is current until superseded.
301-295-7681 | pdhealth.mil PUID 4251

Contents

I. Overview

Description

This section contains trends in period prevalence of each mental health disorder of interest among active duty service members (ADSMs) including active Guard and reserves within each fiscal year from 2005 to 2016. Prevalence of diagnosis for each disorder is aggregated and also stratified by military service, which includes Army, Air Force, Marine Corps, and Navy. A patient may be diagnosed with multiple mental health disorders in a given year; in this case, that patient is captured in the graph for each disorder.

Period prevalence was defined as the number of ADSMs diagnosed with the given mental health condition during the fiscal year of interest (numerator) over the total number of ADSMs at fiscal month six (March) of the fiscal year of interest (denominator). This measure does not determine the proportion of the active duty population ever diagnosed with a given mental health disorder. Instead, it determines the proportion of the active duty population that was diagnosed during the given fiscal year.

The mental health disorders assessed in this report include: adjustment disorders, alcohol-related disorders, alcohol abuse, alcohol dependence, anxiety disorders, bipolar disorders, depressive disorders, insomnia, personality disorders, psychoses, posttraumatic stress disorder (PTSD), schizophrenia, substance-related disorders, substance abuse, and substance dependence.

This report summarizes the prevalence of:

1. Any mental health disorder among ADSMs by military service
2. Specific mental health disorders among ADSMs by military service. There are three sub-sections for each specific mental health disorder:
   I. **Case Definition** (Armed Forces Health Surveillance Branch definition for the disorder of interest)
      a. http://www.health.mil/Military-Health-Topics/Health-Readiness/Armed-Forces-Health-Surveillance-Branch/Epidemiology-and-Analysis/Surveillance-Case-Definitions
   II. **The Numbers:** Graph of disorder prevalence by military service
   III. **Main Findings:** List of main takeaways for the graph

Methodology

We used the Military Health System Data Repository (MDR) to conduct these prevalence analyses. To be considered a patient with a given disorder, the patient had to be diagnosed with the condition of interest within that fiscal year. Specifically, the patient had to have the diagnoses of interest in the first or second diagnostic position in at least one of the following:

1. One inpatient stay
2. One outpatient visit

Date of data pull: April 2017

Definitions

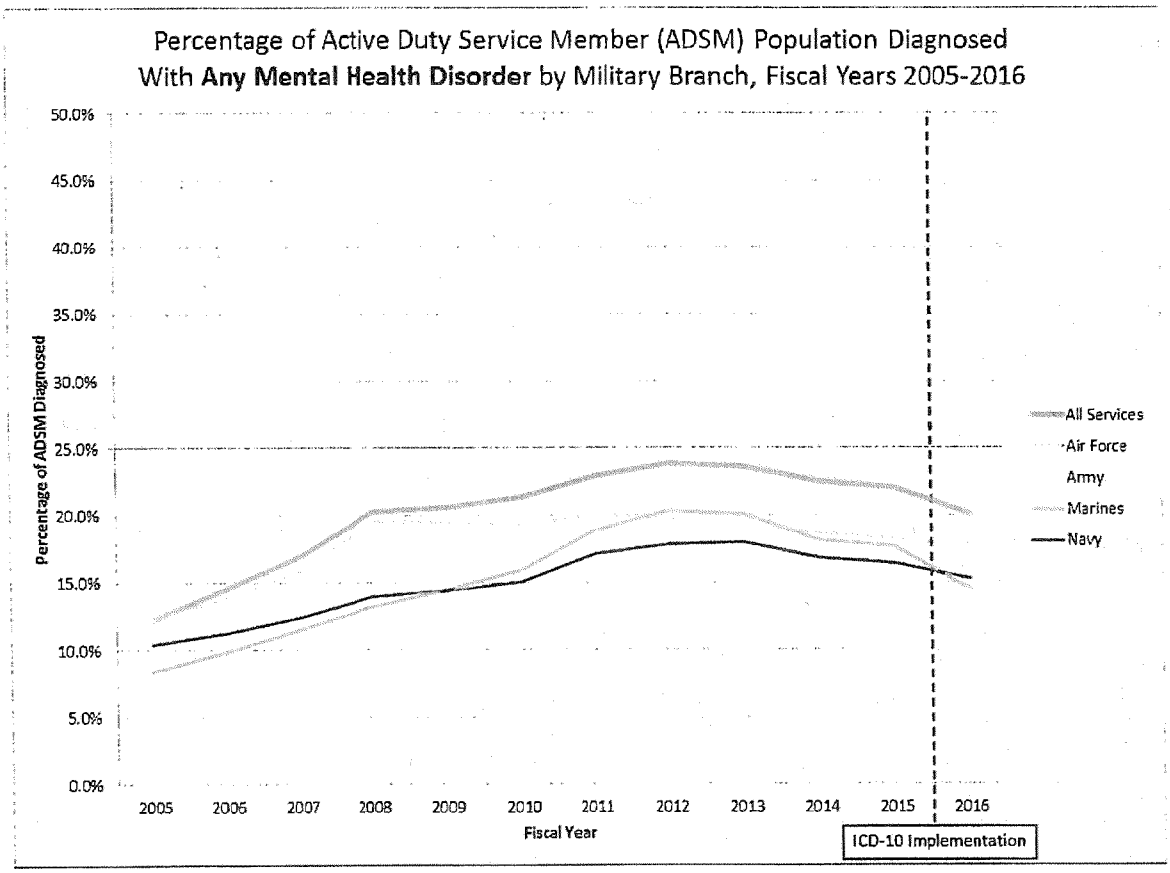
Active Duty Service Member (ADSM)
ADSM was defined as any individual in the active component (including National Guard and reserves) of the Army, Navy, Air Force, and Marine Corps on the date of encounter in which they received the relevant mental health diagnosis.

Fiscal Year
Fiscal year of interest (e.g. fiscal year 2010 spans from Oct. 1, 2009, through Sep. 30, 2010).

ICD-10 Implementation

Starting fiscal year 2017 (Oct. 1, 2016), the Military Health System transitioned from using ICD-9 to ICD-10 diagnosis codes to record patient diagnoses. The case definitions utilized in this analysis were adjusted to reflect this change. Since ICD-10 codes are not a one-for-one match to ICD-9 codes, certain diagnoses may be artificially altered between fiscal year 2016 and fiscal year 2017. These alterations may not reflect true changes in mental health prevalence.

II. Prevalence of Any Mental Health Disorder by Military Service



Military Service	Prevalence	2005[2]	2006[2]	2007[2]	2008[2]	2009[2]	2010[2]	2011[2]	2012[2]	2013[2]	2014[2]	2015[2]	2016[2]
All Listed Services	Mental Health Cases	209,982	236,842	275,214	333,172	347,272	365,011	383,512	389,507	375,655	349,328	328,000	297,473
	ADSM Population[3]	1,719,753	1,632,573	1,623,462	1,646,548	1,686,521	1,708,575	1,678,476	1,636,693	1,591,669	1,552,476	1,486,435	1,477,761
	Percent Diagnosed[4]	12.2%	14.5%	17.0%	20.2%	20.6%	21.4%	22.9%	23.8%	23.6%	22.5%	22.1%	20.1%
Army	Mental Health Cases	101,857	118,767	145,845	168,751	192,041	205,957	207,467	211,746	201,946	185,858	173,798	155,155
	ADSM Population[3]	715,853	659,116	673,253	712,960	741,227	755,924	735,698	708,356	674,998	649,996	601,939	587,527
	Percent Diagnosed[4]	14.2%	18.0%	21.7%	23.8%	25.9%	27.0%	28.2%	29.9%	29.9%	29.2%	28.9%	26.4%
Air Force	Mental Health Cases	50,323	54,735	60,827	72,189	72,519	73,015	75,875	74,172	71,923	68,311	63,742	57,558
	ADSM Population[3]	409,765	394,563	384,325	369,567	372,252	380,260	377,459	375,841	374,405	357,602	349,144	351,655
	Percent Diagnosed[4]	12.3%	13.9%	15.8%	19.5%	19.5%	19.2%	20.1%	19.7%	19.2%	18.6%	18.3%	17.5%
Marine Corps	Mental Health Cases	15,876	19,239	22,473	27,117	31,177	34,697	40,236	42,627	40,912	36,248	33,920	27,710
	ADSM Population[3]	201,331	195,961	195,385	205,135	215,552	218,169	213,638	209,961	204,089	200,217	191,613	191,264
	Percent Diagnosed[4]	8.4%	9.8%	11.5%	13.2%	14.5%	15.9%	18.8%	20.3%	20.0%	18.1%	17.7%	14.5%
Navy	Mental Health Cases	41,926	43,071	46,066	59,115	51,535	53,342	60,224	60,962	60,874	57,911	56,540	53,050
	ADSM Population[3]	392,824	382,733	370,486	359,586	357,390	354,222	351,683	342,565	338,167	343,661	343,742	347,355
	Percent Diagnosed[4]	10.4%	11.3%	12.4%	13.9%	14.4%	15.1%	17.1%	17.8%	18.0%	16.9%	16.4%	15.3%

Main Findings

- Among all service members, mental health disorder prevalence rose roughly 12 percent in 2005 to more than 23 percent in 2013 and then declined to approximately 20 percent in 2016. This increase occurred concurrently with a 14.1 percent decline in the total ADSM population between 2005 and 2016.
- The Army had the greatest percentage of ADSMs diagnosed in each year of the measurement period, rising to approximately 30 percent by fiscal year 2013.

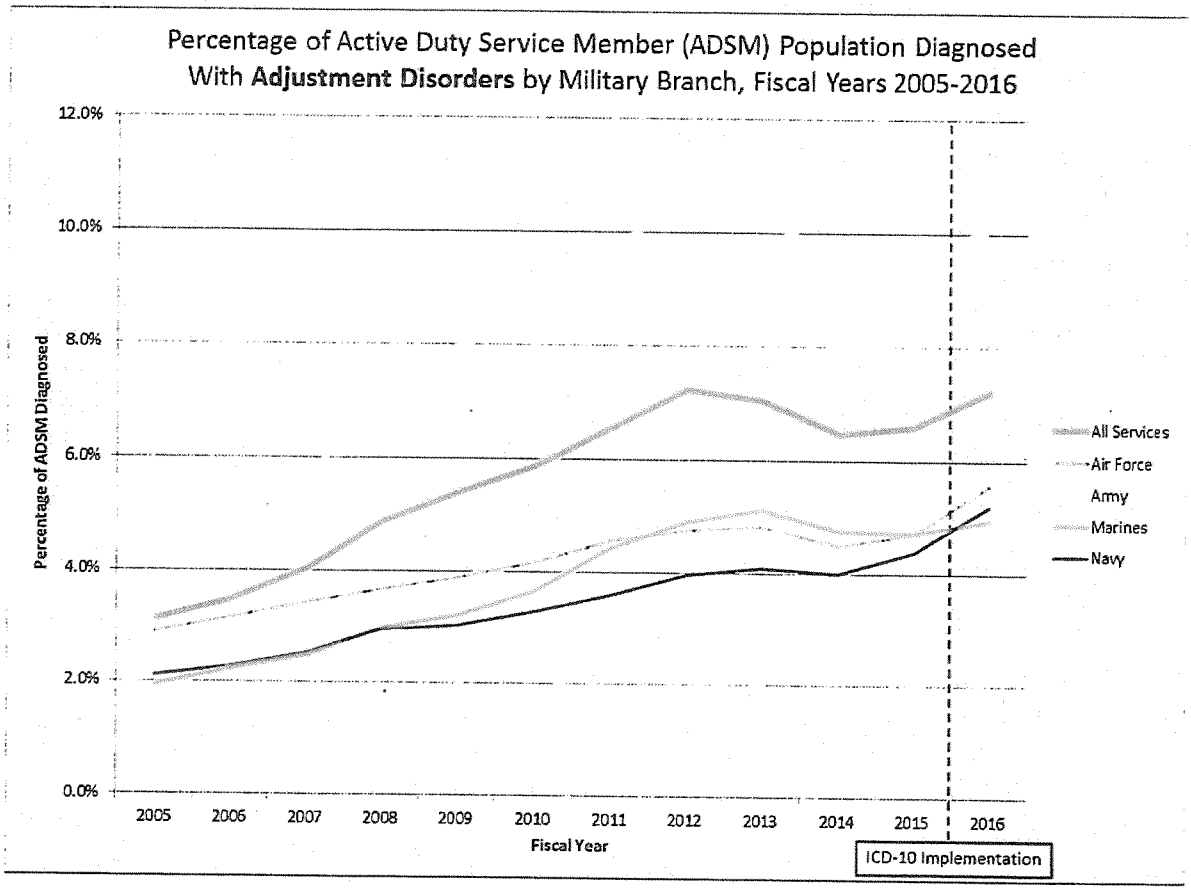
III. Prevalence of Specific Mental Health Disorders by Military Service

Adjustment Disorders

efinition

An adjustment disorder is a psychological response to an identifiable stressor or group of stressors that cause(s) significant emotional or behavioral symptoms that do not meet criteria for another specific Axis I disorder. Symptoms cause marked distress that is in excess of what would be expected from exposure to the stressor and may cause significant impairment in social or occupational functioning. Symptoms do not represent bereavement, must occur within three months of the event(s) or stressor(s), and must persist for no longer than six months after the stressor, or its consequences, have been removed.[2] This does not include acute stress disorders or posttraumatic stress disorder (PTSD).

The Numbers



Main Findings

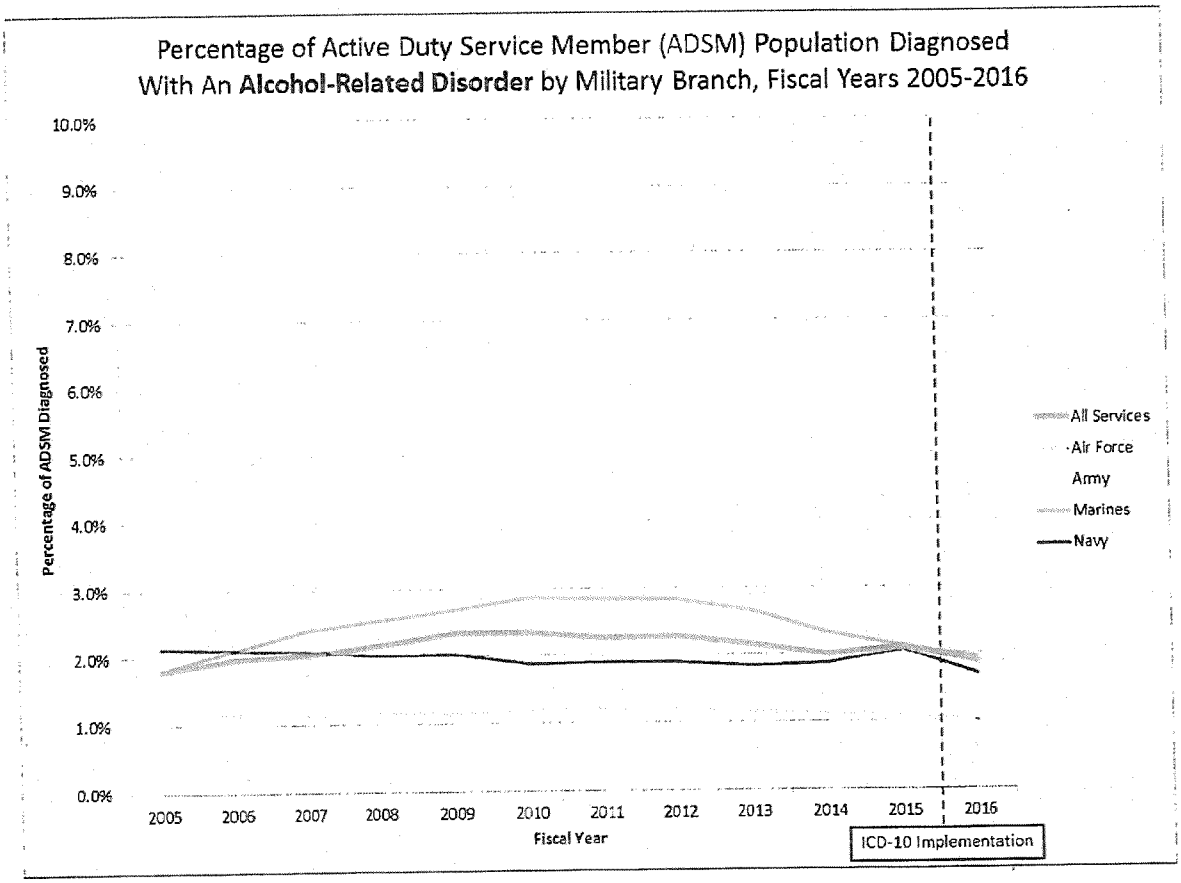
- The percentage of ADSMs diagnosed with an adjustment disorder increased from 3 percent to nearly 7 percent during the reporting period.
- The Army diagnosed nearly 11 percent of its service members with an adjustment disorder in 2012, leveling off near 10 percent in 2016.

Alcohol-related Disorders

Definition

Alcohol-related disorders encompass both alcohol abuse and alcohol dependence, both of which will be defined in the following two sections. This does not include alcohol use disorders.

The Numbers



Main Findings

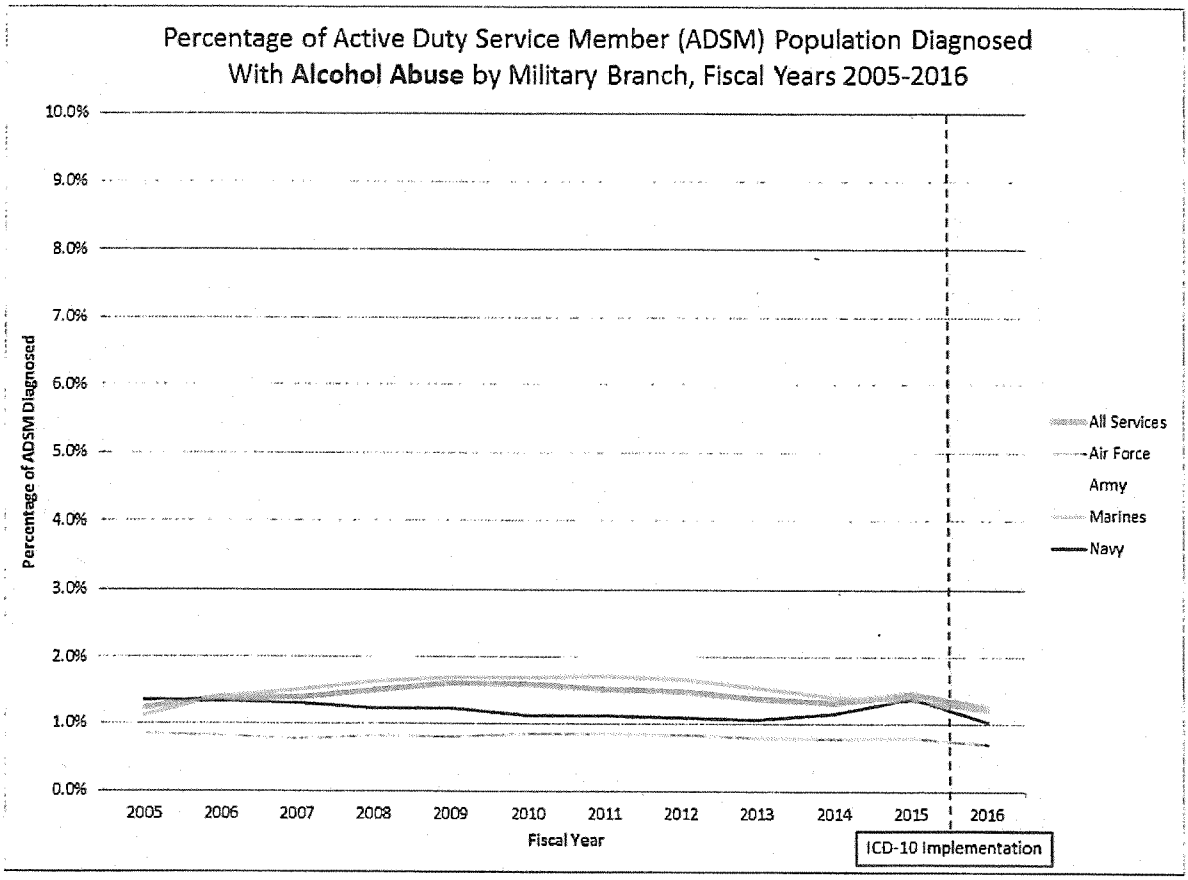
- The Army and Marine Corps have, until 2016, consistently had the highest percentage of ADSMs diagnosed with an alcohol-related disorder.
- The Air Force maintained a lower proportion of diagnosed service members at just above 1 percent for the duration of the 11-year reporting period.

Alcohol Abuse

Definition

'cohol *abuse* is a maladaptive pattern of alcohol use leading to clinically significant impairment or distress. Occurring ,ithin a 12-month period, alcohol abuse is usually manifested by recurrent alcohol use resulting in a failure to fulfill major role obligations, use in situations that are physically hazardous, alcohol-related legal problems, and continued alcohol use despite social and interpersonal problems caused by, or exacerbated by, the effects of alcohol.[1,2]

The Numbers



Main Findings

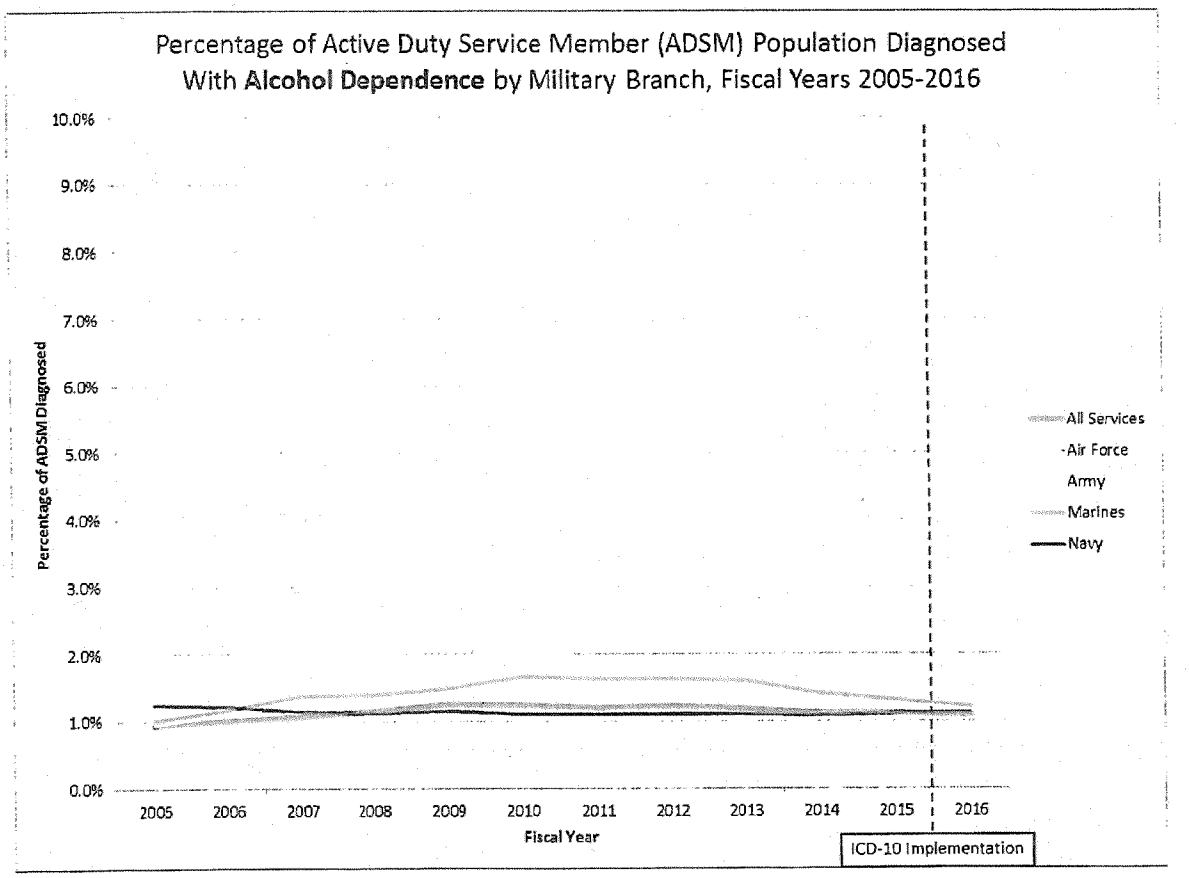
- The percentage of service members diagnosed with alcohol abuse hovered around 1.5 percent over the reporting period.
- The Army consistently diagnosed the highest percentage, while the Air Force diagnosed the lowest percentage.

Alcohol Dependence

Definition

Alcohol *dependence* is a maladaptive pattern of alcohol abuse leading to clinically significant impairment, distress, and hardship. There is a pattern of repeated alcohol use that often results in tolerance, withdrawal, and compulsive drinking behavior. Often, a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects. There are persistent desires to drink and unsuccessful efforts to cut down or control use. Denial of an alcohol abuse-related problem is an inherent component of dependence.[1,2]

The Numbers



Main Findings

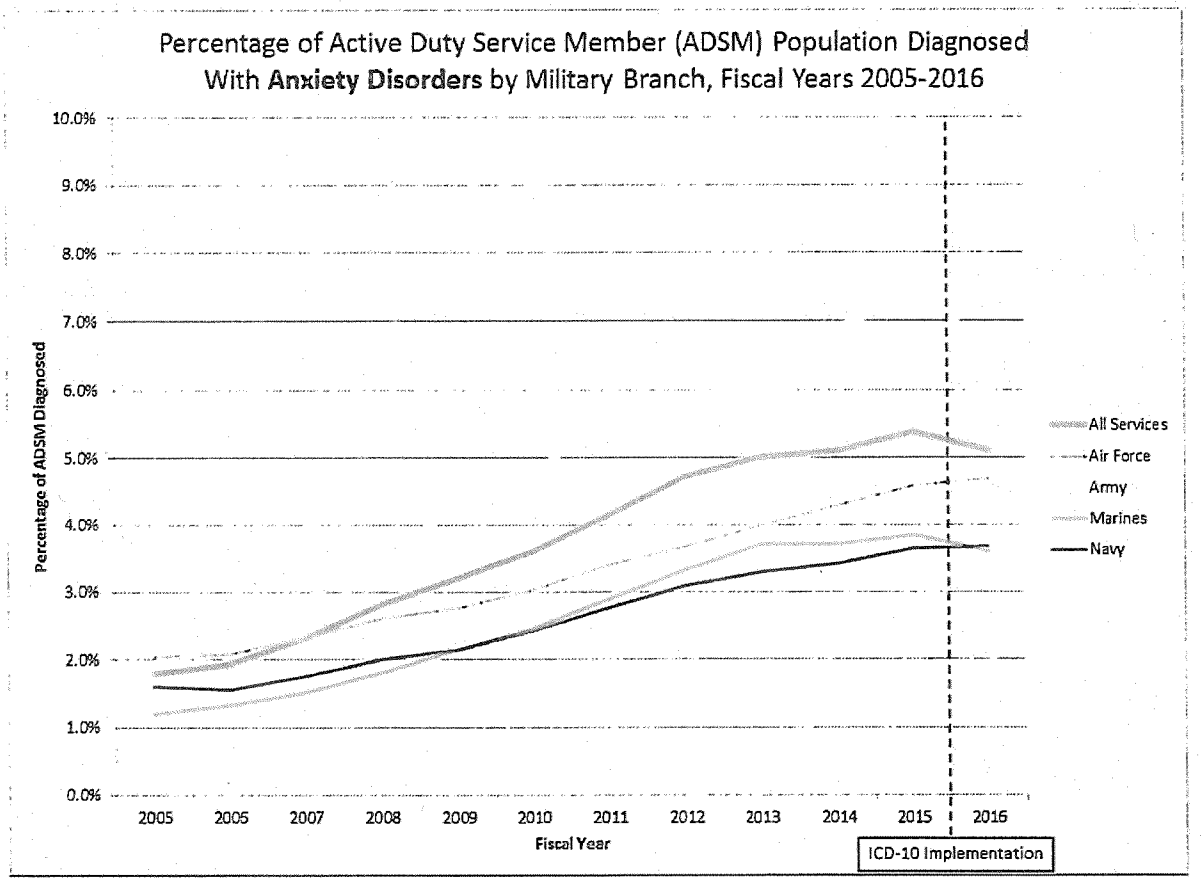
- The Marine Corps diagnosed a slightly higher percentage of ADSMs with alcohol dependence over the majority of the reporting period than the other services, followed closely by the Army.
- Similar to alcohol abuse, the Air Force diagnosed a lower percentage of ADSMs than the other three services.

Anxiety Disorders

Definition

Anxiety disorders encompass a broad range of mental illnesses. Generalized anxiety disorders are characterized by chronic and excessive worry about minor day-to-day problems. The worrying is usually severe and impedes an individual's social and occupational functioning. Individuals with phobias have a persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation. Exposure to the phobic stimulus results in an immediate anxiety reaction or panic attack. Panic disorders are characterized by unexpected and repeated episodes of intense fear of disaster or of losing control even when there is no real danger. Attacks are often accompanied by physical symptoms of stress. Individuals with obsessive compulsive disorder experience obsessions (recurrent, persistent thoughts, impulses or images in excess of worries about real-life problems) and compulsions (repetitive behaviors such as hand washing, ordering, checking or mental acts such as praying, counting, repeating words silently) and are driven to perform these activities in response to an obsession.[1,2]

The Numbers



Main Findings

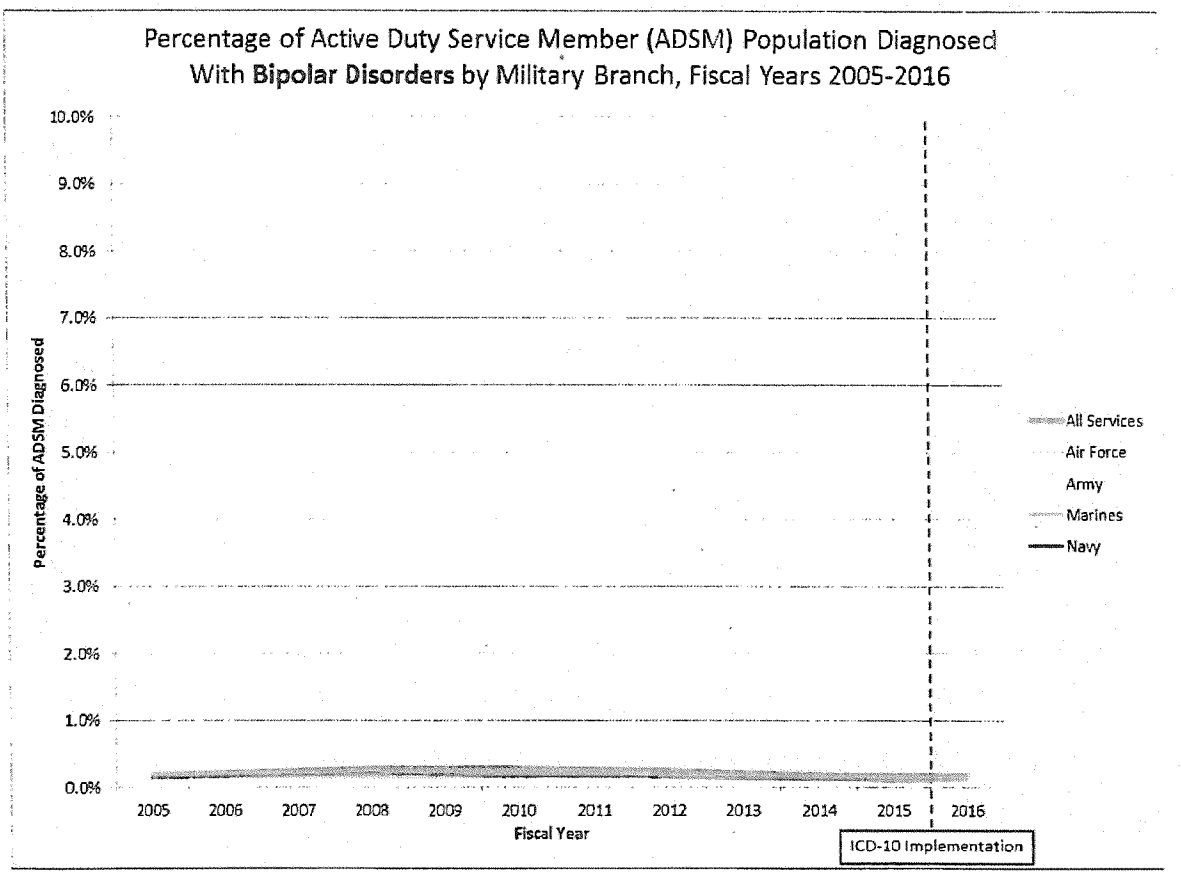
- The percentage of anxiety disorder diagnoses among all ADSMs rose drastically from under 2 percent in 2005 to more than 5 percent in 2016.
- The Army had a higher burden of anxiety disorders than the other services during the reporting period, diagnosing more than 7 percent of its ADSMs in 2015.

Bipolar Disorders

Definition

Bipolar disorders is a category of mood disorders defined by the occurrence of one or more episodes of abnormally elevate mood, clinically referred to as mania or, if mood elevations are milder, hypomania. Individuals who experience manic episodes also commonly experience depressive episodes or symptoms, or mixed episodes in which features of both mania and depression are present at the same time. The disorders are subdivided into bipolar I, bipolar II, and other types, based on the nature and severity of mood episodes experienced.[1,2]

The Numbers



Main Findings

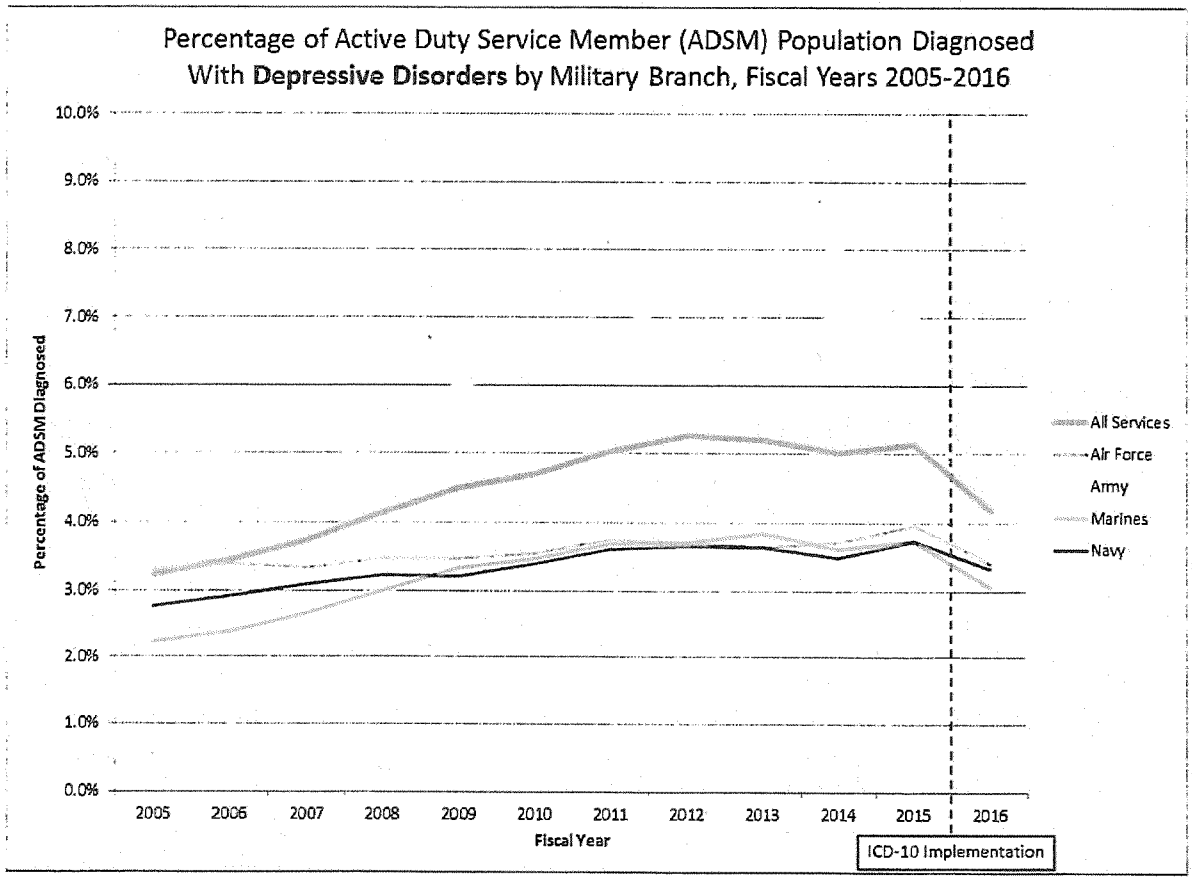
- The percentage of bipolar disorder diagnoses remained well under 0.5 percent during the reporting period among ADSMs.

Depressive Disorders

Definition

epressive disorders are mental illnesses characterized by a persistent, all-encompassing, low mood often accompanied by one or more of the following symptoms: weight loss or gain, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue, loss of interest or pleasure in normally enjoyable activities, diminished ability to think or concentrate, feelings of worthlessness or excessive guilt, and recurrent thoughts of death or suicide. Major depressive disorder manifests as a moderate to severe episode of depression lasting two or more weeks, while dysthymic disorder is characterized by ongoing, chronic depression often lasting for two or more years.[1,2]

The Numbers



Main Findings

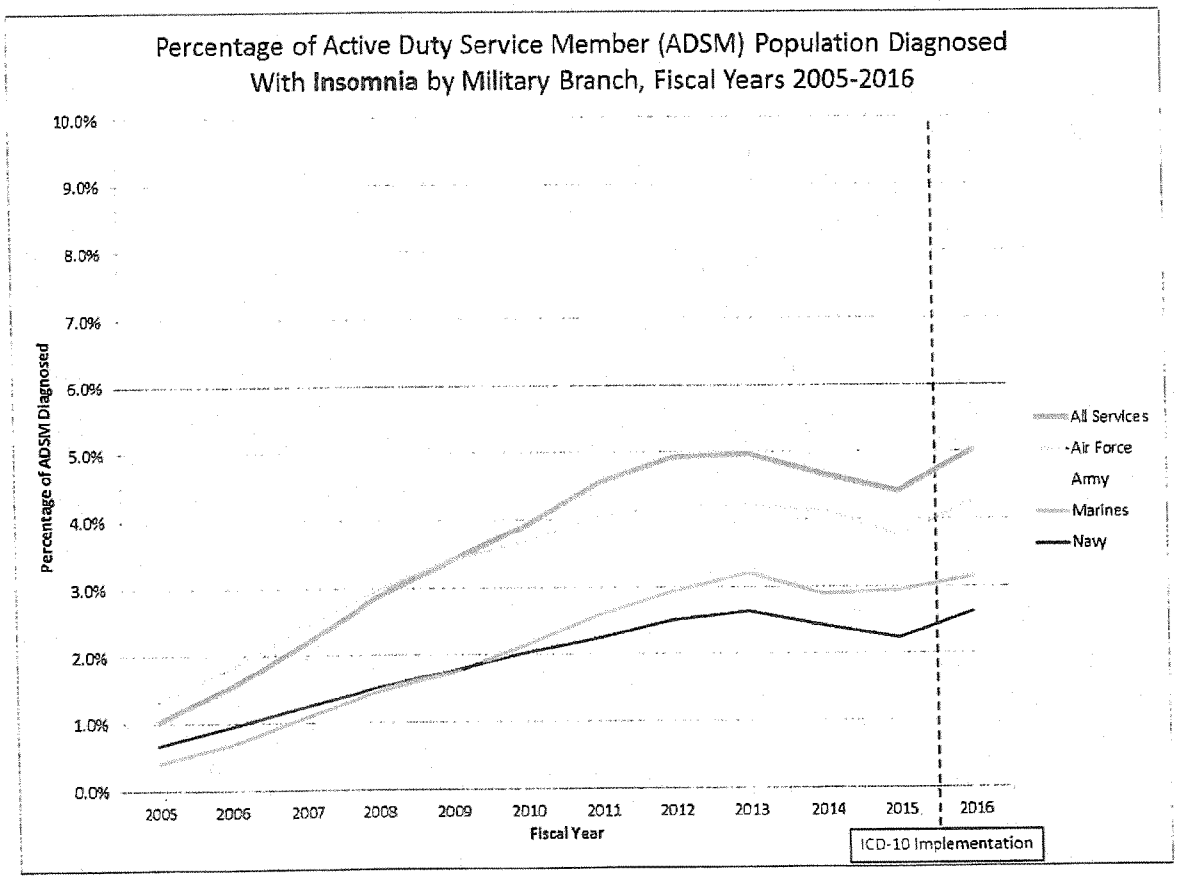
- The percentage of ADSMs diagnosed with a depressive disorder rose steadily during the reporting period, from 3 percent in 2005 to more than 5 percent in 2015.
- The Army diagnosed a disproportionate amount of ADSMs with depressive disorders compared to the other three services, with more than 7 percent of its active duty population diagnosed in 2015.

Insomnia

Definition

Insomnia is the inability to obtain an adequate amount or quality of sleep and the condition is the most common sleep disorder in adults in the United States. Symptoms include difficulty initiating sleep, early awakening, and non-restorative or poor quality sleep. Insomnia can occur as a "primary" condition or as a "secondary" condition meaning the cause is attributable to, or may coexist with, a specific medical, psychiatric or environmental condition. The diagnosis is more common in women and older adults and is often associated with occupational and environmental risk factors (e.g., military personnel on rotating shifts, night shift work, stress, and frequent moves, including deployment).[1,3,4]

The Numbers



Main Findings

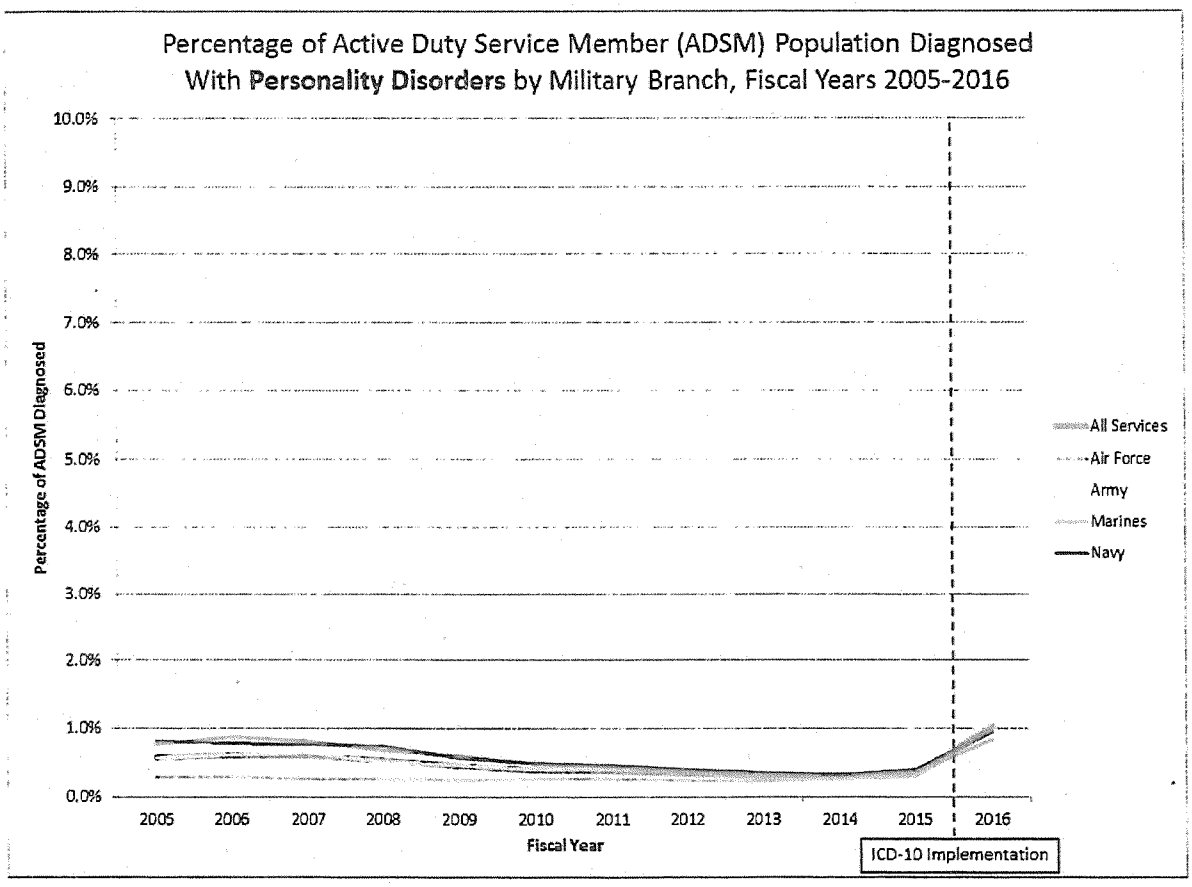
- The percentage of ADSMs diagnosed with insomnia rose from 1 percent in 2005 to 5 percent in 2016.
- The Army diagnosed a higher percentage of ADSMs with insomnia during much of the reporting period, with nearly 7 percent of its active duty population diagnosed in 2015.

Personality Disorders

Definition

ersonality disorders are a group of personality types that manifest as enduring patterns of psychological experience and behavior that markedly affect an individual's ability to function individually and interpersonally with others in social and occupational settings. In general, the behavior patterns are inflexible and pervasive across a wide range of situations and have often been present in the individual since adolescence or early adulthood. Currently the Diagnostic and Statistical Manual of Mental Disorders lists 10 personality disorders, grouped in three clusters: 1) odd or eccentric disorders which includes paranoid, schizoid, and schizotypal personality disorder; 2) dramatic, emotional or erratic disorders which include antisocial, borderline, histrionic, and narcissistic personality disorder; and 3) anxious or fearful disorders which include avoidant, dependent, and obsessive-compulsive personality disorder.[1,2]

The Numbers



Main Findings

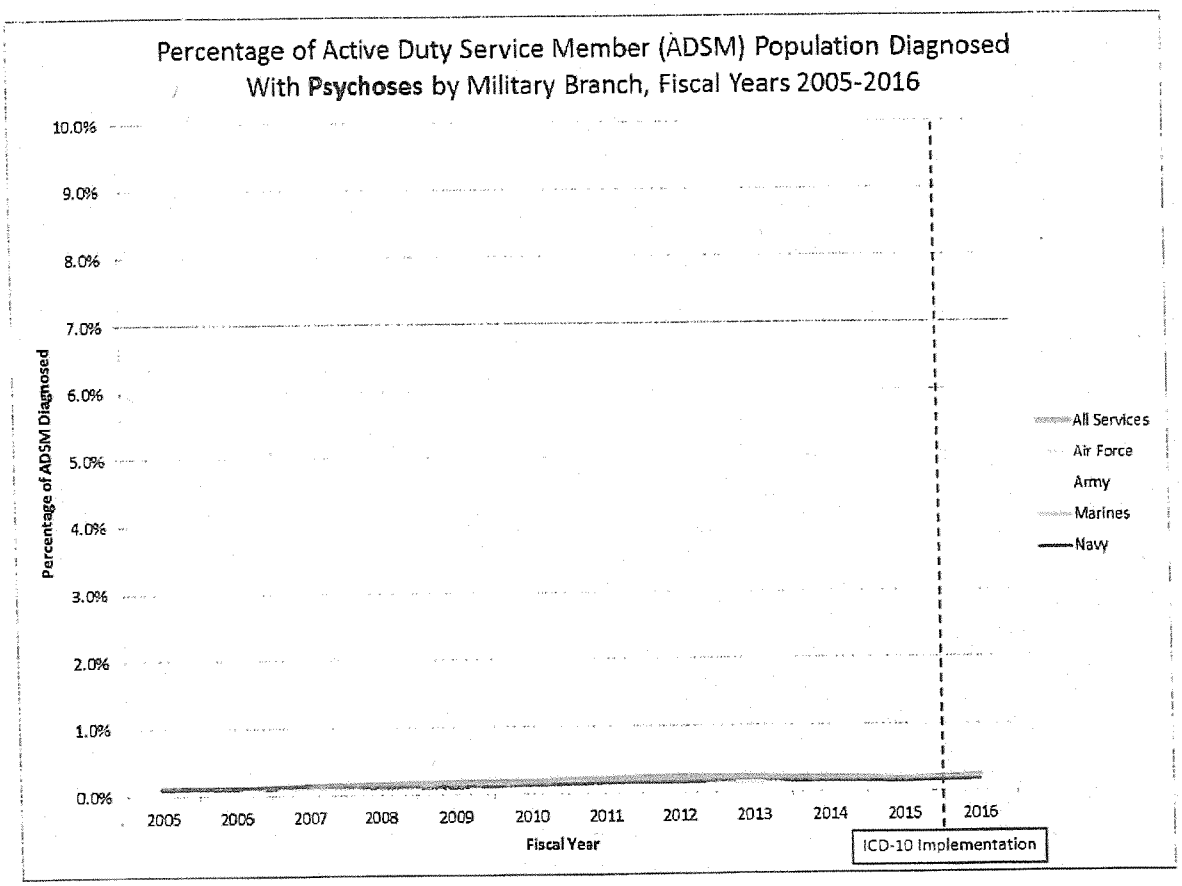
- The percentage of ADSMs diagnosed with a personality disorder has declined in the Army, Marine Corps, and Navy over the last decade, to less than 0.5 percent each by 2015.
- The percentage of ADSMs diagnosed with a personality disorder increased across all services in 2016. This increase was likely due to the MHS implementation of ICD-10 on Oct. 1, 2017.

Psychoses

Definition

Psychoses are a component of certain serious mental disorders and are usually marked by an individual having false beliefs about what is taking place in reality. Psychotic symptoms often include delusions (believing something is true despite strong evidence to the contrary), hallucinations (seeing and hearing things that are not actually present), disorganized thoughts and speech, and disordered thinking.[1,2]

The Numbers



Main Findings

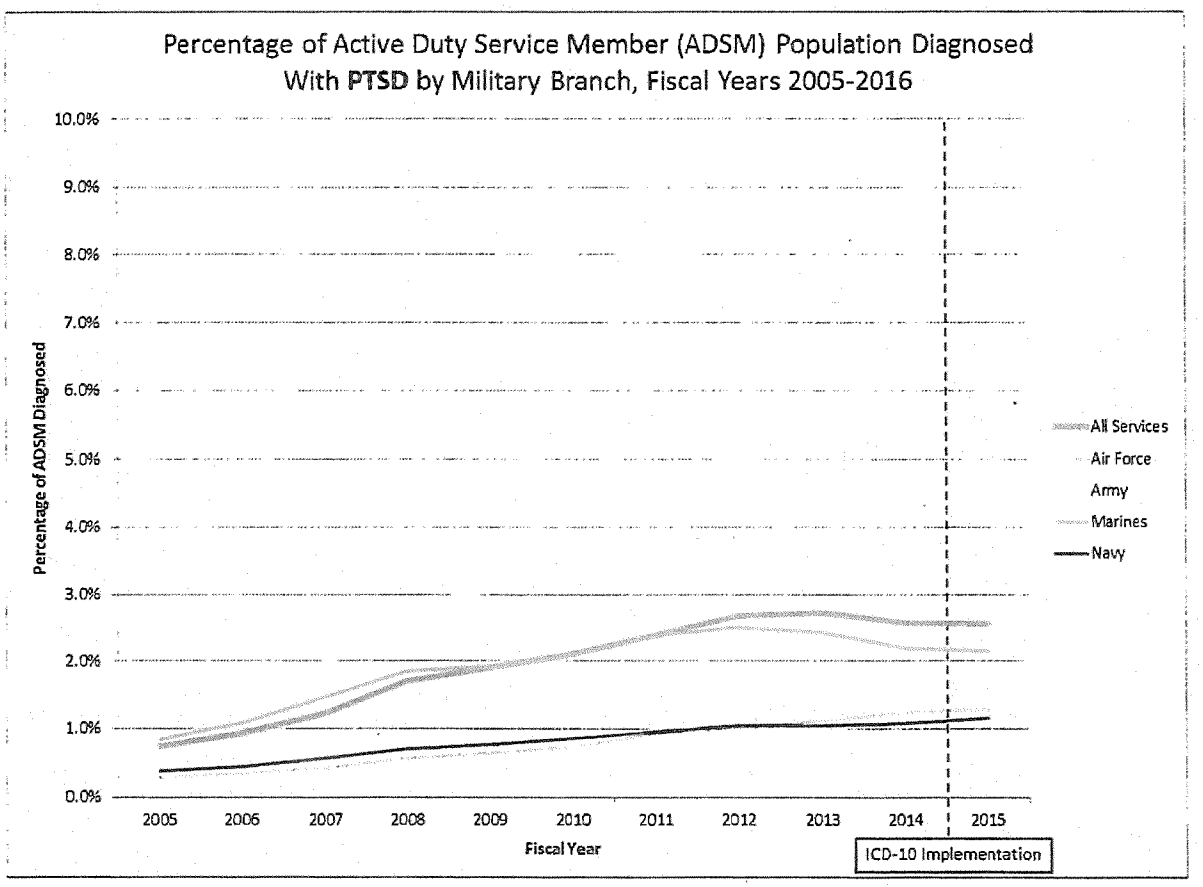
- The percentage of active duty personnel diagnosed with psychoses has increased slightly since 2005, but was still less than 0.25 percent in 2015.
- The Army has a slightly higher percentage of diagnosed psychoses among ADSMs.

Posttraumatic Stress Disorder (PTSD)

Definition

Posttraumatic stress disorder, commonly referred to by its acronym, PTSD, is a severe anxiety disorder that can develop after exposure to any event that causes psychological trauma. The event may involve the threat of death to oneself or to someone else, or a threat to one's own or someone else's physical, sexual, or psychological integrity, overwhelming the individual's psychological defenses. Symptoms include re-experiencing the original trauma(s) through flashbacks or nightmares, avoidance of stimuli associated with the trauma, and increased arousal manifest as difficulty falling asleep or staying asleep, anger, or hypervigilance. Formal diagnostic criteria are dependent upon the duration of symptoms, and the associated impairment in social, occupational, or other important areas of functioning, (e.g., problems with work and relationships).[1,2]

The Numbers



Main Findings

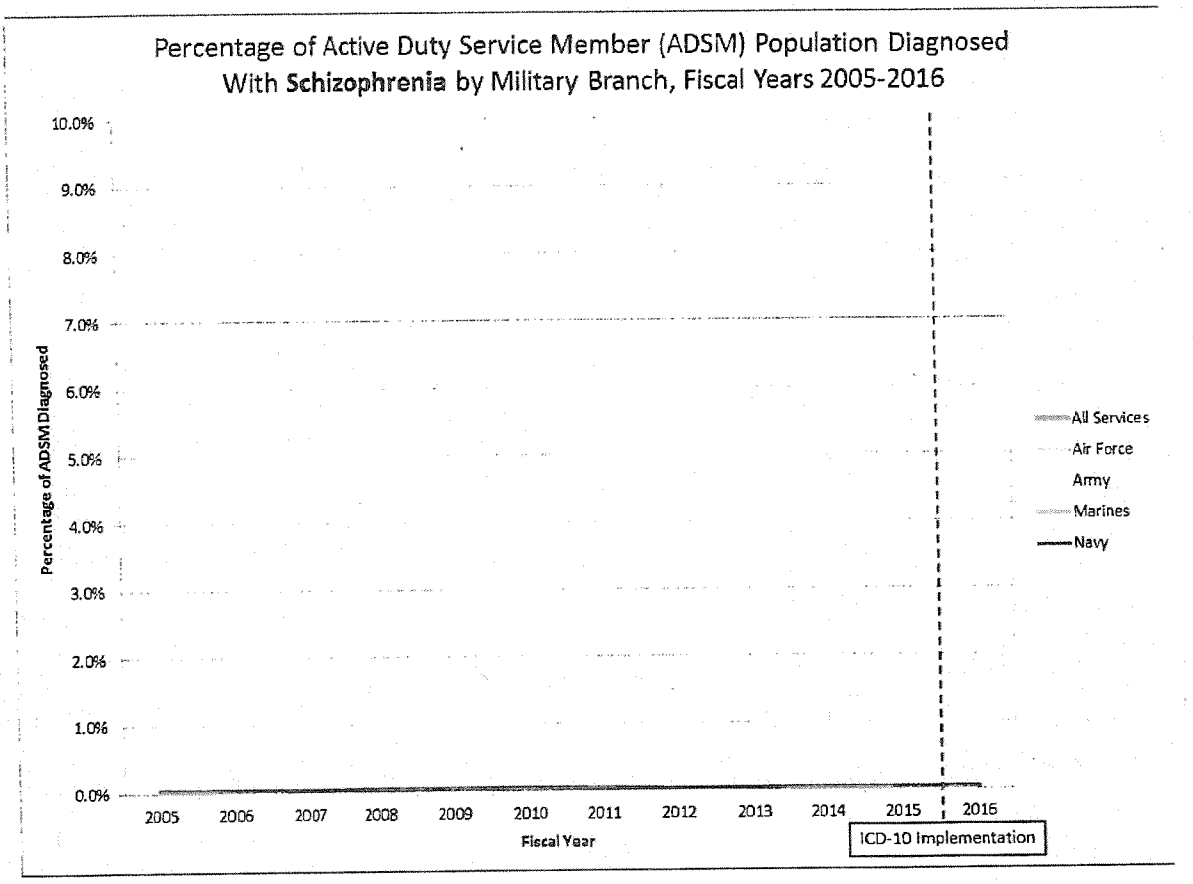
- The percentage of PTSD diagnoses among ADSMs steadily rose over the last decade from less than 1 percent in 2005 to 2.5 percent in 2016.
- The Army disproportionately diagnosed a higher percentage of its service members with PTSD, with over 4 percent diagnosed each year from 2012 to 2016.
- Despite steadily rising trends, the Air Force and the Navy diagnosed a lower percentage of service members with PTSD than the Marine Corps and Army at just over 1 percent in 2015.

Schizophrenia

Definition

Schizophrenia is a severe, frequently unremitting mental illness that involves symptoms of hallucinations, delusions, paranoia disorganized speech, and other disorganized behavior. The etiology is unknown although genetic and environmental risk factors have been identified. Symptom onset is insidious, often beginning in adolescence and progressing until symptoms become severe enough to require medical attention. The syndrome usually significantly affects occupational and social interactions, and earlier age at onset is associated with greater morbidity.[1,2] Complete remission of the disorder is rare.

The Numbers



Main Findings

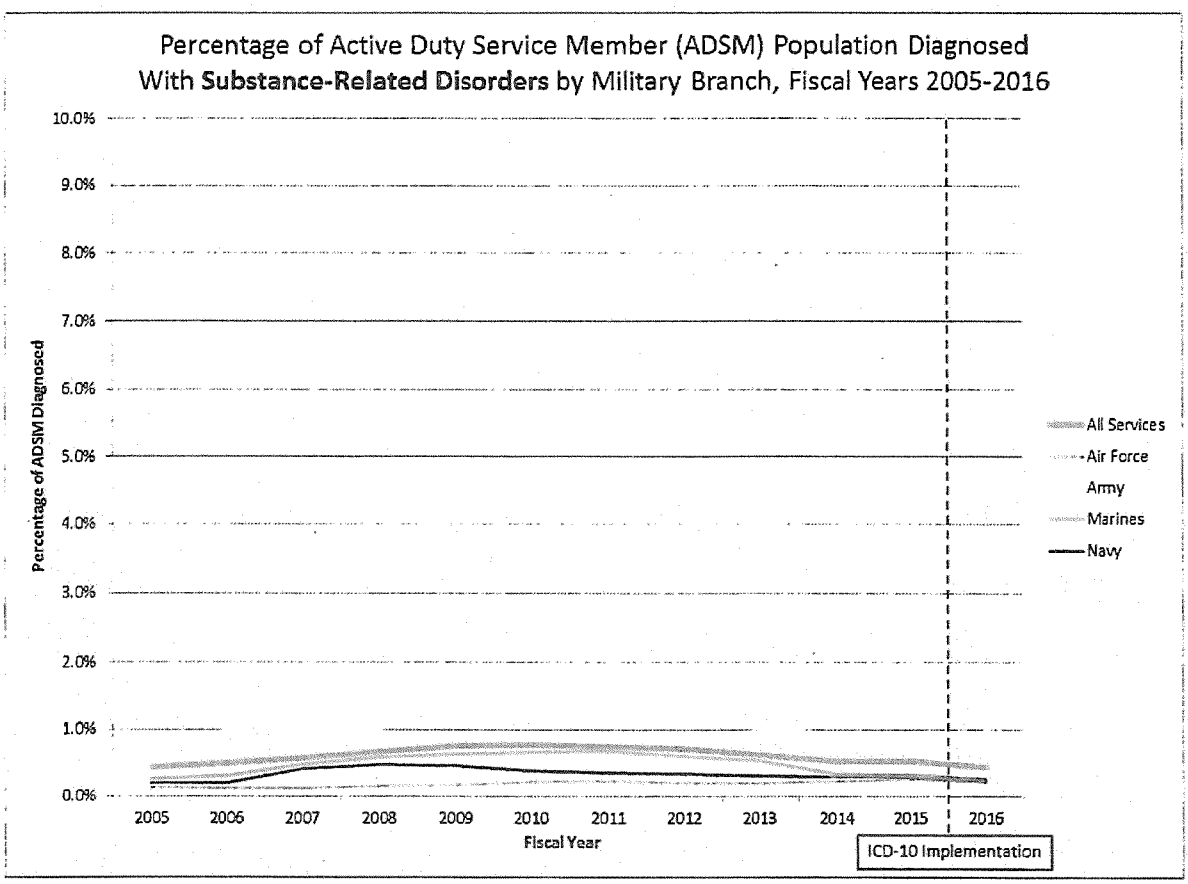
- The percentage of ADSM diagnosed with schizophrenia remained steady at less than 0.1 percent over the duration of the reporting period.

Substance-related Disorders

Definition

ubstance-related disorders include both substance abuse and substance dependence, which will be defined in the following .wo sections. This does not include tobacco use disorders or alcohol-related disorders.

The Numbers



Main Findings

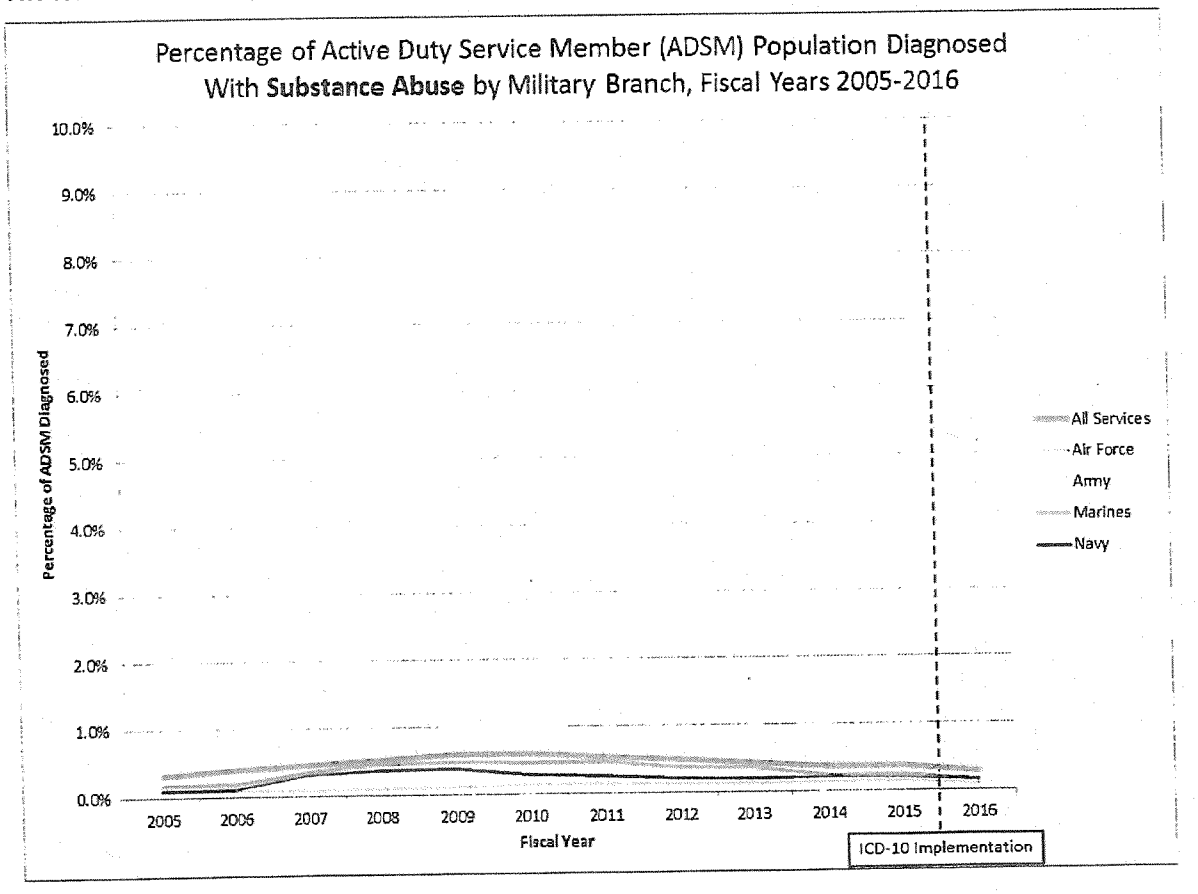
- The percentage of ADSMs diagnosed with a substance-related disorder rose slowly but steadily from 2005 to 2010, and declined in subsequent years to 0.4 percent in 2016.
- The Army diagnosed a higher percentage of service members with a substance-related disorder over the reporting period, with 1.3 percent diagnosed in 2010, declining to 0.8 percent in 2016.
- The Air Force diagnosed the lowest proportion of ADSMs, hovering at 0.3 percent or less from 2005–2016.

Substance Abuse

Definition

Substance *abuse* is a maladaptive pattern of substance use leading to clinically significant impairment or distress. The abuse is usually manifested by one or more of the following, occurring within a 12-month period: recurrent substance use resulting in a failure to fulfill major role obligations, use in situations that are physically hazardous, substance-related legal problems, and continued substance use despite persistent or recurrent social and interpersonal problems caused or exacerbated by the effects of the substance.[1,2]

The Numbers



Main Findings

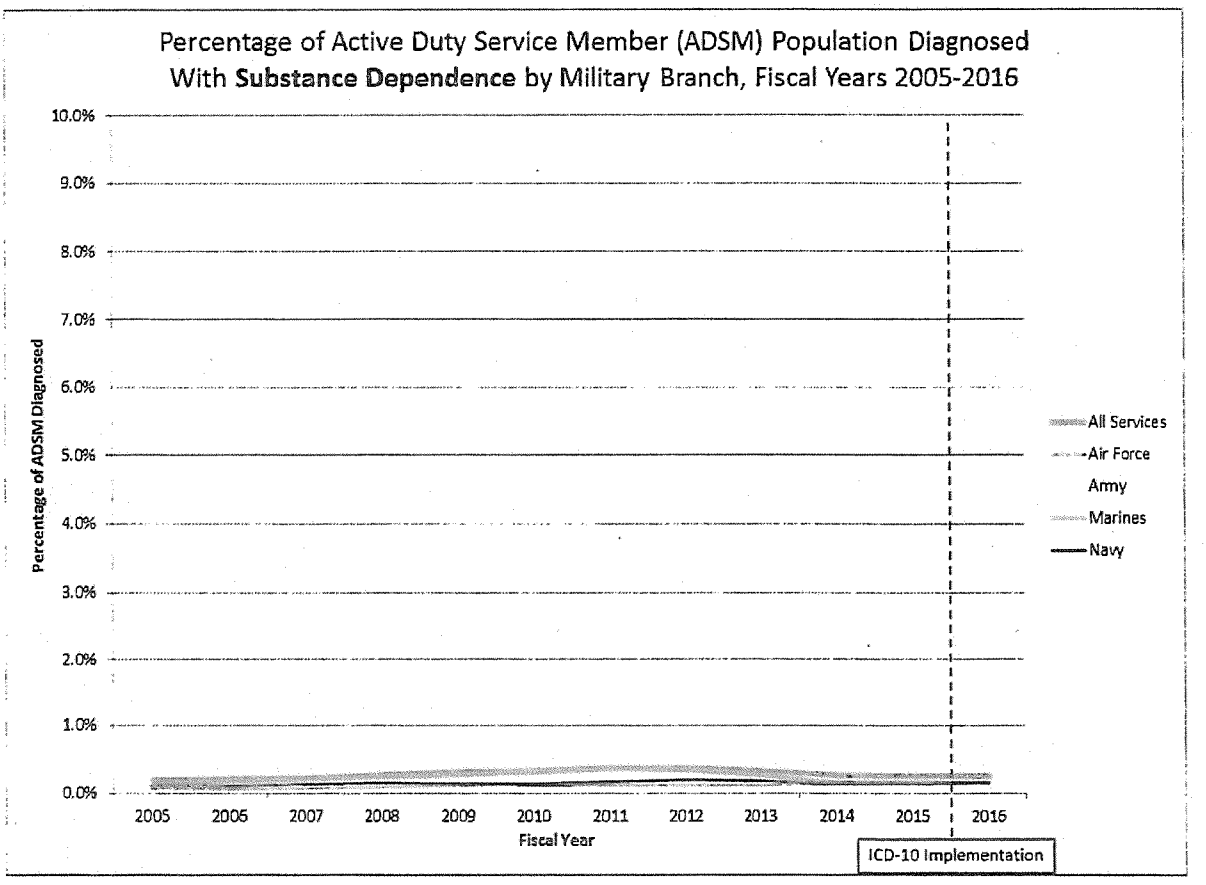
- Substance abuse disorders among ADSMs rose from 0.3 percent in 2005 to 0.6 percent in 2010, but declined steadily to 0.3 percent by 2016.
- The Army diagnosed a higher percentage of ADSMs with a substance abuse disorder across 2005–2016 compared to the other services.

Substance Dependence

Definition

Substance *dependence* is a maladaptive pattern of substance abuse leading to clinically significant impairment, distress, and hardship. There is a pattern of repeated substance use that often results in tolerance, withdrawal, and compulsive substance use behavior. There are persistent desires and unsuccessful efforts to cut down or control use, and a great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects. Denial of a substance abuse-related problem is an inherent component of dependence.[1,2]

The Numbers



Main Findings

- The percentage of ADSMs diagnosed with substance dependence hovered at less than 0.5 percent over the reporting period, with 0.3 percent diagnosed in 2016.
- Similar to substance abuse, the Army consistently diagnosed a higher percentage than the other three services over the reporting period.

IV. Suggested Future Directions

1. Conduct a sensitivity analysis that compares period prevalence (i.e. the current report) to lifetime prevalence and incidence rates of mental health diagnoses in the Military Health System.
2. Delineate trends in mental health disorder diagnoses by mental health disorder (e.g. depressive disorders, PTSD, and anxiety disorders).
3. Seek to identify individual-, treatment-, facility-, and environmental-level factors correlated with changes in prevalence of mental health disorders in the ADSM population between fiscal years 2005 and 2016. Assess the prevalence of each mental health disorder during this period.
4. Investigate factors associated with the increased period prevalence of mental health disorders among Army personnel compared to other listed services. Analyses could identify risk factors associated with the onset of mental health disorders (e.g. race, rank, gender) that increase the likelihood of diagnosis.
5. Determine demographic (e.g. race, gender, age, education) and geographic (e.g. state, region) distributions of mental health diagnoses among ADSMs, and use these variables to help predict future trends in mental health diagnoses.
6. Assess whether clinic-level metrics, such as staffing levels and appointment availability correlate with trends in prevalence of mental health diagnoses among diagnosed ADSMs.
7. Investigate the prevalence of comorbidities (i.e. multiple mental health diagnoses per ADSM) in the ADSM population.
8. Assess the impact of combat-related exposures among ADSMs (e.g. days deployed, region of deployment, number of deployments) on the prevalence of mental health diagnoses.

V. References

1. Armed Forces Health Surveillance Branch. Epidemiology and Analyses: Surveillance Case Definitions. Accessed 08/22/16. Found at: http://www.health.mil/Military-Health-Topics/Health-Readiness/Armed-Forces-Health-Surveillance-Branch/Epidemiology-and-Analysis/Surveillance-Case-Definitions
2. American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders. Fourth Edition. 1994.
3. Braunwald, E., Fauci, A., Longo, D. et al. 2008. *Harrison's Principles of Internal Medicine.* 17th ed. United States McGraw-Hill Professional.
4. Armed Forces Health Surveillance Center. Insomnia, Active Component, U.S. Armed Forces, January 2000–December 2009. *Medical Surveillance Monthly Report (MSMR)*; 2010 May; Vol 17(5): 8–11.

AMERICAN PSYCHIATRIC ASSOCIATION

Gender Dysphoria

Gender Dysphoria

Expert Q & A: Gender Dysphoria

Submit A Question

What is the difference between transgender and transsexual?

Transgender is a non-medical term that has been used increasingly since the 1990s as an umbrella term describing individuals whose gender identity (inner sense of gender) or gender expression (outward performance of gender) differs from the sex or gender to which they were assigned at birth. Some people who use this term do not consider themselves as matching a binary gender category. In addition, new terms such as genderqueer, bigendered, and agendered are increasingly in use.

Transsexual is a historic, medical term that refers to individuals who have undergone some form of medical and/or surgical treatment for gender reassignment (historically referred to as sex reassignment). Some transsexual individuals may identify as transgender, although others primarily identify as the male or female gender to which they have transitioned.

People who identify as transgender but who do not seek medical or surgical treatment are not transsexual.

Is there a general age that people realize they are transgender or experience gender dysphoria? Can it happen late in life?

Not all transgender people suffer from gender dysphoria and that distinction is important to keep in mind. Gender dysphoria and/or coming out as transgender can occur at any age.

The *DSM-5** distinguishes between Gender Dysphoria in Childhood for those who experience GD before puberty. The diagnosis of Gender Dysphoria in Adolescents and Adults can occur at any age. For those who experience gender dysphoria later in life, they often report having secretly hidden their gender dysphoric feelings from others when they were younger.

How does hormone therapy affect a person's emotional state? (From WPATH SOC)

Many transgender people who take feminizing or masculinizing hormones report improvement of emotions as their gender dysphoria lessens or resolves. A person transitioning from male to female (MTF, transwoman) takes feminizing hormones that may reduce libido. A person transitioning from female to male (FTM, transman) takes masculinizing hormones that may increase libido. Less commonly, masculinizing hormones may provoke hypomanic, manic, or psychotic symptoms in patients who have an underlying psychiatric disorder that include such symptoms. This adverse event appears to be associated with higher doses or greater than average blood levels of testosterone.

As with any medical treatment, the anticipated risks and benefits should be considered by a patient and prescribing doctor on an individual basis.

How can a person deal with gender dysphoria without gender reassignment?

Not all individuals with gender dysphoria choose to undergo gender reassignment. For one, gender reassignment that includes surgery is very expensive and usually not covered by most insurance. Nor do all individuals with gender dysphoria desire a

complete gender reassignment. Some are satisfied with taking hormones alone. Some are satisfied with no medical or surgical treatment but prefer to dress as the felt gender in public. Some people make use of Trans affirming social networks online and in local supportive communities to cope with gender dysphoria and claim a gender identity and forms of expression that do not require medical treatments. Some individuals choose to express their felt gender in private settings only because they are either uncomfortable or fearful of publicly expressing their felt gender. However some people who are denied or have no access to gender reassignment treatments can become anxious, depressed, socially withdrawn and suicidal.

If a man likes to dress in women's clothes but does not want to be a woman and otherwise lives typically as a male, that would be just a choice or preference and not considered any type of disorder. Correct?

I'm not sure it's a "choice" or a "preference" but it is not necessarily a disorder. I would rewrite this question as well:

If a man likes to dress in women's clothes but does not want to be a woman and otherwise lives typically as a male, does he have a psychiatric disorder?

No. Such a desire is called transvestitism and it is not a psychiatric disorder. DSM-5 does have a diagnosis of Transvestic Disorder that specifically states it "does not apply to all individuals who dress as the opposite sex, even those who do so habitually." It is only considered a disorder if "cross-dressing or thoughts of cross-dressing are always or often accompanied by sexual excitement."

References

1. *Diagnostic and Statistical Manual of Mental Disorders (DSM-5), Fifth edition.* American Psychiatric Association. 2013

Submit A Question

About the Expert

Jack Drescher, M.D.
Clinical Professor of Psychiatry, New York Medical College
Adjunct Professor, New York University

Jack Pula, M.D.
Psychiatrist in private practice in New York City

What is gender dysphoria?

Gender dysphoria involves a conflict between a person's physical or assigned gender and the gender with which he/she/they identify. People with gender dysphoria may be very uncomfortable with the gender they were assigned, sometimes described as being uncomfortable with their body (particularly developments during puberty) or being uncomfortable with the expected roles of their assigned gender.

Learn More

Patient Stories: Gender Dysphoria

Read patient stories about Gender Dysphoria and learn how to share your story.

View More

- Terms of Use
- Copyright
- Contact

800 Maine Avenue, S.W., Suite 900, Washington, DC 20024

202-559-3900 apa@psych.org

Article

Armed Forces & Society
1-22

DOI: 10.1177/0095327X1454562S
afs.sagepub.com
SAGE

Medical Aspects of Transgender Military Service

M. Joycelyn Elders[1], George R. Brown[2], Eli Coleman[3], Thomas A. Kolditz[4], and Alan M. Steinman[5]

Abstract

At least eighteen countries allow transgender personnel to serve openly, but the United States is not among them. In this article, we assess whether US military policies that ban transgender service members are based on medically sound rationales. To do so, we analyze Defense Department regulations and consider a wide range of medical data. Our conclusion is that there is no compelling medical reason for the ban on service by transgender personnel, that the ban is an unnecessary barrier to health care access for transgender personnel, and that medical care for transgender individuals should be managed using the same standards that apply to all others. Removal of the military's ban on transgender service would improve health outcomes, enable commanders to better care for their troops, and reflect the military's commitment to providing outstanding medical care for all military personnel.

Keywords

transgender service members, medical care, mental health, "don't ask, don't tell"

[1] University of Arkansas College of Medicine (Emeritus), Little Rock, AR, USA
[2] East Tennessee State University, Johnson City, TN, USA
[3] Department of Family Medicine and Community Health, University of Minnesota Medical School, Duluth, MN, USA
[4] Yale School of Management, New Haven, CT, USA
[5] US Coast Guard (Retired), Olympia, WA, USA

Corresponding Author:
Thomas A. Kolditz, Yale School of Management, P.O. Box 208200, New Haven, CT 06520-8200, USA.
Email: thomas.kolditz@yale.edu

Introduction

At least eighteen countries allow transgender personnel to serve openly, but the United States is not among them.[1] When "don't ask, don't tell" was overturned in 2011, gay, lesbian, and bisexual personnel were allowed to serve openly, but regulations banning transgender military service remained in place. Unlike the rationales that justified excluding gays, lesbians, and bisexuals, and that emphasized operational issues including readiness, cohesion, recruitment and morale, the rules barring transgender military service are, for the most part, embedded in medical regulations, and are premised on assumptions about the medical fitness of transgender personnel.[2] Despite the repeal of "don't ask, don't tell," and the fact that the Veterans Health Administration (VHA) enacted a 2011 policy mandating the provision of health care benefits to transgender veterans, medical regulations that bar the service of transgender personnel have not been updated.[3] In this article, we conduct the first-ever analysis of the plausibility of rationales that justify regulations prohibiting transgender service.[4] After a brief introduction, we discuss Defense Department regulations barring transgender service as well as the four medical rationales that justify them. Then, we assess the plausibility of each rationale.

The term *transgender* is a broad, umbrella term that refers to individuals who do not identify with the physical gender that they were assigned at birth.[5] There are an estimated 700,000 transgender American adults, representing 0.3 percent of the nation's adult population. While some military regulations and legal cases that we discuss refer to *transsexuals*, and while some transgender people use the term transsexual to describe someone who lives permanently with a gender different from their sex at birth, many view the term as outdated and no longer use it, which is why we use the term transgender in this article.

There is no single medical treatment for transgender individuals who undergo gender transition. Surgical transition refers to the use of gender-confirming surgery to change one's gender while medical transition refers to the use of surgery and/or cross-sex hormone therapy (CSH) to do so. Survey data indicate that 76 percent of transgender individuals have had cross-sex hormone therapy and that only a small minority have had genital reconstructive surgery.[6] The transition period for most people lasts between one and six months.[7]

Scholars estimate that 15,500 transgender individuals serve in the US armed forces, including 8,800 in the active component and 6,700 in the National Guard and Reserve components, and that 134,000 veterans are transgender.[8] Transgender adult citizens are more than twice as likely as non-transgender Americans (2.2 percent transgender vs. 0.9 percent non-transgender) to serve currently in the military.[9] We are only aware, however, of approximately two dozen service members who have been discharged because of their transgender identity in recent years.[10]

Defense Department Regulations Barring Transgender Service

Transgender individuals are not allowed to enlist or serve in the US armed forces, and the rules barring their participation in the military are articulated in medical regulations that govern accession and retention. Medical standards for enlistment and retention are designed to ensure that service members are free of conditions that would interfere with duty performance, endanger oneself or others, or impose undue burdens for medical care, and current regulations contain a list of disqualifying conditions that preclude applicants from joining or remaining in the military. Accession regulations that are articulated in Department of Defense Instruction (DODI) 6130.03, *Medical Standards for Appointment, Enlistment, or Induction in the Military Services* disqualify physical conditions including "abnormalities or defects of the genitalia including but not limited to change of sex, hermaphroditism, pseudohermaphroditism, or pure gonadal dysgenesis" and "learning, psychiatric, and behavioral" conditions such as "current or history of psychosexual conditions, including but not limited to transsexualism, exhibitionism, transvestism, voyeurism, and other paraphilias."[11] Thus, the accession prohibition against transgender military service includes both a physical component barring "change of sex" and a psychological component barring "psychosexual conditions, including but not limited to transsexualism."

Retention regulations contained in DODI 1332.14, *Enlisted Administrative Separations* include "sexual gender and identity disorders" as grounds for administrative separation at the discretion of a commander.[12] Even though retention regulations do not include a physical component such as "change of sex," gender-confirming surgery would surely be taken as evidence of a "sexual gender and identity disorder" and would thus subject any service member who changed their gender surgically to discharge. Even transgender service members who do not wish to take hormones, have surgery, or undergo any other aspect of gender transition are subject to discharge under the psychological components of the accession and retention regulations.

Medical regulations generally allow for waivers of accession standards under some circumstances. Under DODI 6130.03, the services shall "Authorize the waiver of the standards [for entry] in individual cases for applicable reasons and ensure uniform waiver determinations."[13] Service-specific implementing rules affirm the possibility of accession waivers. By Army rules, for example, "Examinees initially reported as medically unacceptable by reason of medical unfitness ... may request a waiver of the medical fitness standards in accordance with the basic administrative directive governing the personnel action."[14]

While accession standards allow for the possibility of waivers, they also specify that accession waivers will not be granted for conditions that would disqualify an individual for the possibility of retention: "Waivers for initial enlistment or appointment, including entrance and retention in officer procurement programs, will not be

granted if the applicant does not meet the retention standards."[15] As discussed previously, because some conditions related to transgender identity are grounds for discharge, and because recruiters cannot waive a condition upon enlistment that would be disqualifying for retention, transgender individuals cannot obtain medical waivers for entrance into the military.

We conducted a comprehensive review of all Department of Defense (DOD)-wide as well as Army and Navy/Marine regulations governing transgender service, but we do not address service-specific rules here because they are largely consistent with DOD-wide regulations discussed in this section.[16] Air Force medical standards governing enlistment and retention were removed from public access upon the latest revision of Air Force Instruction 48-123, *Medical Examinations and Standards*, in November 2013.

US military policies that ban transgender service members do not include rationales that explain why the armed forces prohibit them from serving, although the policies are embedded in comprehensive medical and other regulations that are designed to preserve health and good order. While regulations do not offer reasons for banning transgender service members, several transgender individuals have challenged the policy in court and military representatives have presented rationales via testimony and affidavit. In *Doe v. Alexander*, a federal district court noted "evidence that transsexuals would require medical maintenance to ensure their correct hormonal balances and continued psychological treatment and that the army would have to acquire the facilities and expertise to treat the endocrinological complications which may stem from the hormone therapy. The army might well conclude that those factors could cause plaintiff to lose excessive duty time and impair her ability to serve in all corners of the globe."

In testimony for *Leyland v. Orr*, an Air Force consulting physician testified that assigning individuals who had undergone a sex change operation to remote geographic areas "would be equivalent to placing an individual with known coronary artery disease in a remote location without readily available coronary care." Finally, in *DeGroat v. Townsend*, an Air Force consulting physician stated that "Individuals who have undergone sex change procedures would not be qualified for world-wide service" in part because they could be "without access to potentially acute specialized tertiary medical care, which would only be available at major medical centers. Overall, it is neither in the best interest of the individual patient to have their access to necessary health care limited during potential Air Force duties nor is it in the best interest of the Air Force to have to provide the medical care that these individuals may require."[17]

The regulations, in short, appear to be premised on the notion that in four different ways, transgender personnel are not medically fit and that addressing their medical needs would place an undue burden on commanders and doctors. Specifically, the regulations appear to be justified by the notions that (1) transgender personnel are too prone to mental illness to serve, (2) cross-sex hormone therapy is too risky for medical personnel to administer and monitor, (3) gender-confirming surgery is too

complex and too prone to postoperative complications to permit, and (4) transgender personnel are not medically capable of deploying safely.[18] We address each of these rationales in turn.

Mental Health

Some of the regulatory provisions that prohibit transgender service emphasize psychological factors. In turn, scholars have found that some transgender service members report poor mental health. One recent study concluded that the transgender community faces "elevated rates of suicide, risk for HIV infection, exposure to trauma, and other health challenges."[19] In a sample of 1,261 transgender respondents with prior military service, 40 percent had attempted suicide. Among seventy veterans evaluated for gender identity disorder between 1987 and 2007, 4 percent "had actively harmed their genitals," 61 percent "revealed a history of serious suicidal thoughts," and 43 percent "had additional psychiatric diagnoses exclusive of [gender identity disorder]."[20]

Despite such data, arguments based on mental health are not convincing rationales for prohibiting transgender military service for two reasons. First, and as discussed in greater detail subsequently, DODI 6130.03, the document that lays out medical standards that bar service for transgender personnel, is based on the outdated view that simply having a transgender identity is a mental illness.[21] Indeed, scientists have abandoned psychopathological understandings of transgender identity, and no longer classify gender nonconformity as a mental illness. Second, in contrast to rules categorically barring all transgender personnel regardless of fitness for duty, military regulations governing most psychological conditions strike a careful balance between admitting those whose conditions can be managed without imposing undue burdens on commanders or doctors while excluding those whose conditions would impair their service. Given that many service members diagnosed with a range of psychological conditions are allowed to serve and, as discussed subsequently, having a transgender identity is no longer considered a mental illness, it is implausible to suggest that the military must ban transgender personnel because they are not mentally fit to serve.

While mental health professionals used to consider transgender identity as a mental illness, this is no longer the case. In the newest edition of the *Diagnostic and Statistical Manual* (*DSM-5*), a comprehensive classification of psychological conditions and mental disorders that reflects the most up-to-date medical understandings, gender identity disorder has been replaced with gender dysphoria, a diagnostic term that refers to an incongruence between a person's gender identity and the physical gender that they were assigned at birth, and to clinically significant distress that may follow from that incongruence.[22] While gender identity disorder was pathologized as an all-encompassing mental illness, gender dysphoria is understood as a condition that is amenable to treatment.[23] And mental health professionals agree that not all transgender individuals suffer from dysphoria. In addition, the World Health

Organization's Working Group on the Classification of Sexual Disorders and Sexual Health (WGCSDSH) has recommended that the forthcoming version of the *International Statistical Classification of Diseases and Related Health Problems* (*ICD*-11), due for publication in 2015, "abandon the psychopathological model of transgender people based on 1940's conceptualizations of sexual deviance."[24]

The reclassification of transgender identity in both *DSM* and *ICD* is based, in part, on the understanding among scientists and medical practitioners that distress can be the result of prejudice and stigmatization, not mental illness, and that many individuals who do not identify with the physical gender that they were assigned at birth do not suffer from clinically significant distress, and therefore do not have a medical or psychological condition.[25] WGCSDSH members wrote recently that "there are individuals who today present for gender reassignment who may be neither distressed nor impaired."[26] The high reported rates of distress among transgender veterans and service members have been based on clinical samples that overrepresented patients requiring psychological care. In addition, a significant body of evidence shows that treatment can alleviate symptoms among those who do experience distress. A meta-analysis of more than 2,000 patients in seventy-nine studies published between 1961 and 1991 found "Favorable effects of therapies that included both hormones and surgery ... Most patients reported improved psychosocial outcomes, ranging between 87% for MTF patients and 97% for FTM patients." Satisfaction rates have increased over time: "studies have been reporting a steady improvement in outcomes as the field becomes more advanced."[27]

Defense Department rules concerning mental health, deployment, and fitness for duty do not regulate gender identity in a manner that is consistent with the management of other psychological conditions, and have the effect of singling out transgender personnel for punishment even when they are mentally healthy. Defense Department rules categorically ban all recruits who have a "learning, psychiatric, and behavioral" condition such as a "current or history of psychosexual conditions, including but not limited to transsexualism," as well as all currently serving personnel with a "sexual gender and identity disorder," regardless of whether the individual in question is fit for duty or suffers from any mental distress. By contrast, Defense Department regulations governing many other psychological conditions carefully balance between admitting those whose conditions can be managed without imposing undue burdens on commanders or doctors while excluding those whose conditions would impair their service. For example, DODI 6130.03 prohibits individuals suffering from serious mental illnesses such as autistic, schizophrenic, and delusional disorders from enlisting in the armed forces. Yet for less serious disorders, regulations strike a careful balance. Thus, individuals with attention deficit hyperactivity disorder are prohibited from enlisting unless they meet a number of criteria, including documenting that they maintained a 2.0 grade point average after the age of fourteen, and individuals with simple phobias are banned from enlisting unless they meet other criteria, including documenting that they have not required medication for the past twenty-four continuous months.

Retention regulations strike a balance as well. For those who develop mood or anxiety disorders while in the military, regulations require a referral for physical disability evaluation only if their condition requires extended or recurrent hospitalization or interferes with duty performance. Service members requiring medication for mood and anxiety disorders are not categorically barred from deployment. The determination depends on the seriousness and stability of the condition, logistical difficulties in providing medication, and the need for clinical monitoring.

Finally, empirical data suggest that many non-transgender service members continue to serve despite psychological conditions that may not be as amenable to treatment as gender dysphoria. A 2012 meta-analysis of available scholarship estimated that 5.7 percent of active-duty service members who had never been deployed suffered from major depressive disorder and that the prevalence rate among deployed service members was approximately 12 percent.[28] In 2009, at least 15,328 service members were hospitalized for mental health disorders, and the *Los Angeles Times* reported in 2012 that "110,000 active-duty Army troops last year were taking prescribed antidepressants, narcotics, sedatives, antipsychotics and anti-anxiety drugs."[29] According to the Congressional Research Service, "Between 2001 and 2011 ... [a] total of 936,283 servicemembers, or former servicemembers during their period of service, have been diagnosed with at least one mental disorder over this time period ... Nearly 49 percent of these servicemembers were diagnosed with more than one mental disorder."[30] During manpower shortages, non-transgender individuals whose psychological well-being has not met entrance standards outlined in DODI 6130.03 have been able to obtain waivers allowing them to enlist in the military. According to the National Academy of Sciences, 1,468 of the 4,303 applicants (34 percent) who failed to meet psychiatric entrance standards from May 1, 2003, through April 30, 2005, received waivers.[31]

While regulations are intended to prevent individuals with significant psychological impairments from serving, the regulations themselves pose significant obstacles to the well-being of some troops. Current restrictions discourage transgender individuals from getting the care they need, exacerbating symptoms and in some cases leading to dependence on alcohol or drugs.[32] And, research has also shown that policies that force individuals to conceal their identities can have significant mental health consequences.[33] The British regulatory provision on mental health and transgender military service may warrant consideration at this point: "Although transsexual people generally may have an increased risk of suicide, depression and self-harm, transsexual applicants should not automatically be referred to a Service Psychiatrist. Transsexual applicants with no history of mental health problems or deliberate self-harm who meet other fitness standards should be passed as being fit to join the Armed Forces."[34]

Cross-sex Hormone Treatment

Military representatives cited previously have indicated that cross-sex hormone treatment is too risky and complicated for medical personnel to administer and

monitor. Our argument, by contrast, is that the risks associated with cross-sex hormone treatment are low and that despite various restrictions that prohibit military members from seeking medical treatments, the military's unwillingness to allow any transgender service members to undergo cross-sex hormone therapy is inconsistent with the fact that many non-transgender personnel are permitted to take hormones.[35]

Many, but not all, transgender people wish to take cross-sex hormones in order to achieve feminization or masculinization of their hair and fat distribution, genitalia, and musculature, and to achieve and maintain a gender presentation consistent with their gender identity. Hormonal therapy for male-to-female (MTF) reassignment involves medications that block the production and effects of testosterone (antiandrogen therapy) and simultaneously produce feminizing effects (estrogen therapy). For female-to-male (FTM) patients, the main treatment for hormonal reassignment is testosterone, which can be administered through patches, gels, or injection and which usually produces satisfactory results. Most effects take place beginning at eight weeks and maximize at about two years and vary depending on age and genetic makeup.

Despite some mild risks associated with cross-sex hormone therapy, over fifty years of clinical experience have demonstrated that hormones are an effective treatment for gender dysphoria, that psychological benefits follow from cross-sex hormone administration, and that the incidence of complications is quite low.[36] Studies looking at the risk of blood clots from estrogen found an occurrence of anywhere from 0 to 142 blood clots per 10,000 people per year, with much lower rates in more recent studies with newer estrogens and non-oral administration.[37] Clinics with a high volume of transgender patients on estrogen therapy report having "rarely seen adverse effects."[38]

While the use of hormones may entail some risk, the military consistently retains non-transgender men and women who have conditions that may require hormone replacement. For example, the military lists several gynecological conditions (dysmenorrhea, endometriosis, menopausal syndrome, chronic pelvic pain, hysterectomy, or oophorectomy) as requiring referral for evaluation only when they affect duty performance. And the only male genitourinary conditions that require referral for evaluation involve renal or voiding dysfunctions. The need for cross-sex hormone treatment is not listed as a reason for referral for either men or women. The military also allows enlistment in some cases despite a need for hormone replacement. DODI 6130.03, for example, does not disqualify all female applicants with hormonal imbalance. Polycystic ovarian syndrome is not disqualifying unless it causes metabolic complications of diabetes, obesity, hypertension, or hypercholesterolemia. Virilizing effects, which can be treated by hormone replacement, are expressly not disqualifying.

Hormonal conditions whose remedies are biologically similar to cross-sex hormone treatment are grounds neither for discharge nor even for referral for medical evaluation, if service members develop them once they join the armed forces. Male hypogonadism, for example, is a disqualifying condition for enlistment, but does not

require referral for medical evaluation if a service member develops it after enlisting. Similarly, DODI 6130.03 lists "current or history of pituitary dysfunction" and various disorders of menstruation as disqualifying enlistment conditions, but personnel who develop these conditions once in service are not necessarily referred for evaluation. Conditions directly related to gender dysphoria are the only gender-related conditions that carry over from enlistment disqualification and continue to disqualify members during military service, and gender dysphoria appears to be the only gender-related condition of any kind that requires discharge irrespective of ability to perform duty.

Military policy allows service members to take a range of medications, including hormones, while deployed in combat settings. According to a Defense Department study, 1.4 percent of all US service members (approximately 31,700 service members) reported prescription anabolic steroid use during the previous year, of whom 55.1 percent (approximately 17,500 service members) said that they obtained the medications from a military treatment facility. One percent of US service members exposed to high levels of combat reported using anabolic steroids during a deployment.[39] According to Defense Department deployment policy, "There are few medications that are inherently disqualifying for deployment."[40] And, Army deployment policy requires that "A minimum of a 180-day supply of medications for chronic conditions will be dispensed to all deploying Soldiers." A former primary behavioral health officer for brigade combat teams in Iraq and Afghanistan told *Army Times* that "Any soldier can deploy on anything."[41] Although Tricare officials claimed not to have estimates of the amounts and types of medications distributed to combat personnel, Tricare data indicated that in 2008, "About 89,000 antipsychotic pills and 578,000 anti-convulsants [were] being issued to troops heading overseas."[42] The Military Health Service maintains a sophisticated and effective system for distributing prescription medications to deployed service members worldwide.[43]

Gender-confirming Surgery

According to the official policies of the American Medical Association, American Psychological Association, Endocrine Society, and World Professional Association for Transgender Health, gender-confirming surgeries can be medically necessary for some transgender individuals to mitigate distress associated with gender dysphoria.[44] Surgeries may include chest reconstruction and surgeries to create testes (scrotoplasty) and penises (phalloplasty or metoidioplasty, with or without urethral lengthening) for FTMs, and facial feminization, breast augmentation and surgeries to remove testes (orchiectomy) and create vaginas (vaginoplasty) for MTFs. That said, other transgender individuals do not want or require surgery to alleviate symptoms. A recent study noted that "As the field matured, health professionals recognized that while many individuals need both hormone therapy and surgery to alleviate their gender dysphoria, others need only one of these treatment options and some need neither."[45]

In considering the question of gender-confirming surgery among military personnel, it is important to recognize that regulations permit service members to have elective cosmetic surgeries at military medical facilities and that some of those elective procedures risk postoperative complications that can be more serious than those of medically necessary gender-confirming surgeries.[46] For example, the LeFort osteotomy procedures and mandibular osteotomies that service members may elect to have are associated with a number of possible complications based upon the technique, surgical level, and anatomic site at which the surgery/osteotomies are performed.[47] The incidence of complications in craniofacial surgery depends upon the type of surgery and anatomic location at which the procedure is performed, and infection rates may range from approximately 1 to 3 percent.[48] Treatment for these complications may require additional surgical or other interventional procedures, antibiotics, and/or local wound care.

Even if the Military Health Service provided gender-confirming surgeries, however, the demand for such procedures would be low. Research on civilian employers whose insurance plans cover transition-related health care has found that very few employees submit claims for such benefits in any given year. If extrapolated to the active, Guard and Reserve components of the military, the data suggest that if transgender service members were allowed to serve, and if the military covered medically necessary care related to gender transition, fewer than 2 percent of transgender service members, a total of 230 individuals, would seek gender-confirming surgery in any particular year.[49] A recent study reported the average cost of transition-related health care at US$29,929.[50]

As with any surgical procedures, gender-confirming surgeries entail a risk of short-term and chronic postoperative complications.[51] Yet, despite the presence of risk, research shows that the complications rate is low. Across fifteen studies from 1986 to 2001, 2.1 percent of patients had rectal–vaginal fistula, 6.2 percent with vaginal stenosis, 5.3 percent had urethral stenosis, 1.9 percent with clitoral necrosis, and 2.7 percent with vaginal prolapse.[52] A follow-up study of eighty women who had vaginoplasties found three postoperative complications and another determined that among eighty-nine vaginoplasties, there was one major complication.[53] If transgender service members were allowed to serve and to have gender-confirming surgery while in the military, we estimate that ongoing postoperative complications would render ten MTF service members unfit for duty each year.[54]

Research suggests that a minority of individuals having FTM genital surgery may expect long-term complications that would require ongoing care.[55] Yet, very few FTMs have genital surgery, and of the 1,594 FTMs who responded to a recent survey, only forty-eight individuals (3 percent) had genital surgery, including twenty-four who had metoidioplasty and phalloplasty, one who had just phalloplasty, and twenty-three who had just metoidioplasty.[56] Given such low demand, even using conservative assumptions, it is estimated that only six postoperative FTM transgender men would become unfit for duty each year as a result of ongoing, postoperative complications following genital surgery.[57]

In sum, while the risks of genital surgery are real, they are no higher than risks associated with other genitourinary procedures, and they are lower than risks that accompany some elective non-transgender-related surgeries which the military allows and which, unlike genital surgeries for transgender individuals, are cosmetic and not medically necessary. As well, the low rate of demand for genital surgeries would mean that in absolute and relative terms, allowing such procedures would place almost no burden on the military.

Deployment

In explaining the rationale for the military's ban on transgender service, spokespersons have emphasized non-deployability, medical readiness, and constraints on fitness for duty.[58] While personnel policy must be designed to promote deployability and medical readiness, arguments invoked to oppose transgender service on these grounds do not withstand scrutiny. With few exceptions, transgender service members are deployable and medically ready. As noted in other sections of this article, cross-sex hormone treatment and mental health considerations do not, in general, impede the deployability of transgender service members, and the public record includes instances in which transgender individuals deployed after having undergone transition. With two exceptions, all transgender service members who are otherwise fit would be as deployable as their non-transgender peers. The first exception is postoperative transgender service members whose genital surgeries result in long-term complications. Using conservative assumptions, an estimated maximum of sixteen postoperative service members (ten MTF transgender women and six FTM transgender men) would become permanently undeployable each year as a result of ongoing postoperative medical complications following genital surgery.

The second exception would be those undergoing surgical transition while in service. But as discussed, the number of service members undergoing surgical transition in any given period would be low, both in relative and absolute terms, either because they would have already transitioned prior to joining the military, would prefer to wait until the end of military service to transition, or would not want to surgically transition, regardless of the timing. Thus, with very few exceptions, transgender service members would be deployable and medically ready on a continuous basis.

Straightforward and fair-minded regulatory options are available for managing transgender military service and deployability. According to Army regulations (which do not apply to transgender-related conditions), "Personnel who have existing medical conditions may deploy" if deployment is unlikely to aggravate the condition, if an unexpected worsening of the condition would not pose a grave threat, if health care and medications are immediately available in theater, and if "no need for significant duty limitation is imposed by the medical condition."[59] British military policy concerning transgender service and deployability is equally sensible: "Applicants who are about to undergo, or are still recovering from surgery to change the

external appearance of their body into that of the acquired gender should be graded P8 [medically unfit], as with any other condition that is being treated or requires surgery at the time of application, until they are fully recovered from the surgery."[60]

Many non-transgender service members are temporarily or permanently non-deployable, but they are not automatically discharged as a result, and military policies accommodate them within reason. Defense Department regulations confirm that when evaluating a service member's fitness for duty, non-deployability is not grounds for a determination of unfitness: "Inability to perform the duties of his or her office, grade, rank, or rating in every geographic location and under every conceivable circumstance will not be the sole basis for a finding of unfitness." Even service members who are permanently constrained by serious medical conditions and defects are allowed, under some circumstances, to remain in the military. According to DODI 1332.38, "A service member who has one or more of the listed conditions or physical defects is not automatically unfit," including systemic diseases such as tuberculosis, leprosy, lymphoma, leukemia, or Hodgkin's disease. Regulations provide service members suffering from these and other serious, non-transgender-related, medical conditions with opportunities to serve in a limited capacity and to recover: "A member previously determined unfit and continued in a permanent limited duty status ... may be determined fit when the member's condition has healed or improved so that the member would be capable of performing his or her duties in other than a limited duty status."[61]

Although deployability is a crucial component of readiness, many non-transgender service members are temporarily or permanently non-deployable. According to a 2011 Defense Department study of health-related behaviors, 16.6 percent of active duty service members (244,000 service members) were unable to deploy for a variety of reasons during the twelve-month period prior to the survey's administration, including 22.5 percent of Marines.[62] Yet, non-deployable service members (who are not transgender) are not automatically banned, and policies accommodate them to the extent possible. Indeed, the services have adopted leave and assignment policies that provide for prolonged absences and restrictions on duty as a result of medical conditions, as well as life choices that service members make. These include ordinary and advance leave. By law, members of the armed forces are entitled to thirty days of paid leave per year (generally referred to as "ordinary" or "annual" leave), accruing at a rate of 2½ days per month.[63] Service members need not provide any justification in order to take their annual leave. On the contrary, military commanders "shall encourage and assist all Service members to use" their leave.[64] Leave is scheduled "consistent with operational requirements, training workloads, and the desires of the Service member," including "at least one extended leave period each year of approximately 14 consecutive days in length or longer."[65]

Service members may also be granted special leave on top of their ordinary leave. This leave is in addition to the thirty days per year provided for by federal law and is not counted against the member's ordinary leave balance. And in addition to the elective leave programs, the services provide for situations in which a member may

be absent owing to a medical condition or procedure. A member unable to be present for duty due to hospitalization is excused from duty while hospitalized, and the absence is not counted against the member's leave balance.[66]

Military convalescent leave policy does not discriminate against elective procedures such as Botox treatments and "plastic surgery for unacceptable cosmetic appearance."[67] Soldiers receiving such procedures may be expected to reimburse the service for their cost, but they "will be afforded convalescent leave and will not be required to use regular leave for their post-operative recovery."[68] Finally, the services recognize that members may on occasion have medical conditions which limit their availability to be assigned overseas. Members with such medical conditions may be deferred from reassignment for up to twelve months.[69] Personnel with more persistent medical needs are given assignment limitation codes and may be excluded from overseas service altogether, while still remaining on active duty.[70]

While the operational needs of the service are critical considerations, existing military law and policy contemplate that members may be absent from duty for extended periods of time. Despite concerns expressed by those such as the judge in the 1981 *Alexander* case, existing military policies and procedures are designed to ensure a capable fighting force while at the same time anticipating and providing for prolonged absences by service members based on medical conditions, elective medical procedures, personal life choices, and morale and personal welfare. Transgender service members, however, are automatically discharged, in part because of assumed constraints on their deployability and medical readiness, even though such constraints would apply to no more than a few hundred transgender service members at any one time and would normally last less than the twelve months allowed for deferrals of reassignment. In contrast, non-transgender service members are given multiple opportunities to demonstrate their deployability and fitness for duty despite medical limitations, and many are retained even if they are not fully deployable or fit. Even those service members deemed permanently unfit "may be retained as an exception to the general policy rule" if their skills or experience warrant continuing service.[71]

Conclusion

Medical standards are designed to ensure that service members are free of conditions that would interfere with performance or burden the military. Current regulations, however, bar the service of transgender individuals regardless of ability to perform or degree of medical risk. They include transgender conditions on a list of disqualifying, maladaptive traits assumed to be resistant to treatment and inconsistent with either fitness for duty or good order and discipline. Unlike other medical disqualifications, however, which are based on the latest medical expertise and military experience, it is the transgender bar itself that is inconsistent with current medical understanding and is based on standards that are decades out-of-date.

Medical regulations requiring the discharge of transgender personnel are inconsistent with how the military regulates all other medical and psychological conditions,

and transgender-related conditions appear to be the only gender-related conditions that require discharge irrespective of fitness for duty. Transgender medical care should be managed in terms of the same standards that apply to all medical care, and there is no medical reason to presume transgender individuals are unfit for duty. Their medical care is no more specialized or difficult than other sophisticated medical care the military system routinely provides, and existing policies and practices are adequate for identifying rare and extreme circumstances that may affect duty performance.

Simply treating transgender service members in accordance with established medical practices and standards, as it does with the provision of all medical care, is all that's needed to end the unnecessary and harmful policy of discrimination against transgender service. While no new medical rules are needed, the Defense Department could look to foreign military experiences as it formulates administrative guidance to address fitness testing, records and identification, uniforms, housing, and privacy. As mentioned previously, at least eighteen countries allow transgender personnel to serve. Foreign military regulations that apply to transgender military service are straightforward, sensible, and fair, offering a sound model for US military policy. In light of the research presented here, taking these steps to reform current military policy governing transgender service would improve care for US service members without burdening the military's pursuit of its vital missions.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The Palm Center, a research initiative of the Political Science Department of San Francisco State University, provided research funding for this project.

Notes

1. In an earlier, self-published version of this article, we referred to twelve countries that allow transgender military service. Since that time, scholars at the Hague Centre for Strategic Studies have published a comprehensive study of rules governing gay, lesbian, bisexual, and transgender service in 103 countries. While the report does not include a list of nations allowing transgender military service, we are grateful to its authors, who provided us with their data indicating that 18 nations allow transgender military service while 9 nations probably allow it, but could not be confirmed. The 18 confirmed cases are Australia, Austria, Belgium, Bolivia, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Israel, Netherlands, New Zealand, Norway, Spain, Sweden, and United Kingdom. See Joshua Polchar et al., *LGBT Military Personnel; A Strategic Vision for Inclusion* (The Hague, the Netherlands: The Hague Centre for Strategic Studies, 2014).
2. Aaron Belkin et al., "Readiness and DADT Repeal: Has the New Policy of Open Service Undermined the Military?," *Armed Forces & Society* 39, 4 (2013): 587-601; Robert

MacCoun, Elizabeth Kier, and Aaron Belkin, "Does Social Cohesion Determine Motivation in Combat? An Old Question with an Old Answer," *Armed Forces & Society* 32, 4 (2006): 646-54.

3. Veterans Health Administration (VHA) updated the policy in 2013. See Department of Veterans Affairs, VHA Directive 2013-003, *Providing Health Care for Transgender and Intersex Veterans*, February 8, 2013. The VHA provides cross-sex hormone therapy, but not gender-confirming surgery.
4. In this article, we do not address cross-dressing, which is governed by grooming and uniform regulations that are distinct from the medical rules that apply to transgender military service.
5. For most people, gender identity is a stable, deep-seated component of their sense of self. For a broader discussion of gender identity, see Jaime M. Grant, Lisa A. Mottet, and Justin Tanis, *Injustice at Every Turn: A Report of the National Transgender Discrimination Survey* (Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force, 2011), 24-25.
6. Although fewer than 20 percent of transgender women and 5 percent of transgender men have had genital reconstructive surgeries, more have had other types of gender-confirming surgery such as breast augmentation, and demand for surgeries could increase if they were affordable and available. Grant, Mottet, and Tanis, *Injustice at Every Turn*, 78-79.
7. See, for example, durations associated with variants of cross-sex hormone therapy in Eli Coleman et al., "Standards of Care for the Health of Transsexual, Transgender, and Gender-nonconforming People, Version 7," *International Journal of Transgenderism* 13, 4 (2011): 188-89.
8. Gary Gates and Jody Herman, *Transgender Military Service in the United States* (Los Angeles, CA: Williams Institute, 2014), accessed July 18, 2014, http://williamsinstitute.law.ucla.edu/wp-content/uploads/Transgender-Military-Service-May-2014.pdf. At the time of writing, the active, Guard and Reserve components included 2,280,875 personnel.
9. In response to a recent Freedom of Information Act request for discharge data submitted by the Palm Center, a Pentagon spokesperson said that the military does not track the number of service members who have been separated for transgender-related reasons.
10. Private communication between staff of Sparta, an organization representing currently serving transgender service members, and Palm Center research staff.
11. Department of Defense Instruction (DODI) 6130.03, *Medical Standards for Appointment, Enlistment, or Induction in the Military Services*, April 28, 2010, Incorporating Change 1, September 13, 2011. Paraphilia is sexual arousal to an atypical object. See American Psychiatric Association, *Diagnostic and Statistical Manual*, 5th ed. (Arlington, VA: American Psychiatric Publishing, 2013).
12. Department of Defense Instruction (DODI) 1332.14, *Enlisted Administrative Separations*, August 28, 2008, Incorporating Change 3, September 30, 2011, Enclosure 3, at ¶ 3(a)8. DODI 1332.14 incorporates a list of administratively disqualifying conditions, including sexual gender and identity disorders, found in Enclosure 5 to DODI 1332.38,

Physical Disability Evaluation, November 14, 1996, Incorporating Change 2, April 10, 2013.

13. Department of Defense Instruction 6130.03, *Medical Standards for Appointment*, Enclosure 2, at ¶ 3(b).
14. Army Regulation 40-501, *Standards of Medical Fitness*, December 14, 2007 (updated August 4, 2011), at ¶ 1-6(b).
15. AR 40-501, *Standards of Medical Fitness*, at ¶ 1-6(h).
16. See AR 40-501, *Standards of Medical Fitness* ¶¶ 2-14, 3-35(a), (b); NAVMED P-117, U. S. Navy Manual of the Medical Department, Chapter 15, §§ 15-45, 15-46, 15-58; SECNAV Instruction 1850.4E, Department of the Navy Disability Evaluation Manual, Enclosure 8, § 8013(a); SECNAV Instruction 1850.4E, Enclosure 8, Attachment (b) (page 8-43); and NAVMED P-117, Chapter 18, § 18-5(3).
17. *Doe v. Alexander*, 510 F. Supp. 900 (D. Minn. 1981); *Leyland v. Orr*, 828 F. 2d 584 (9th Cir. 1987); *DeGroat v. Townsend*, 495 F. Supp. 2d 845 (S.D. Ohio 2007).
18. We consider deployability to be a medical aspect of military service because deployment regulations specifically address medical readiness. See, for example, DODI 6490.07, *Deployment-Limiting Medical Conditions for Service Members and DOD Civilian Employees*, February 5, 2010; or Department of Defense, Assistant Secretary of Defense for Health Affairs Memorandum, *Policy Guidance for Deployment-Limiting Psychiatric Conditions and Medications*. (Washington, DC: Department of Defense, November 7, 2006).
19. Jillian C. Shipherd et al., "Male-to-female Transgender Veterans and VA Health Care Utilization," *International Journal of Sexual Health* 24, 1 (2012): 85.
20. Jack Harrison-Quintana and Jody L. Herman, "Still Serving in Silence: Transgender Service Members and Veterans in the National Transgender Discrimination Survey," *LGBTQ Policy Journal at the Harvard Kennedy School* 3, accessed July 18, 2014, http://williamsinstitute.law.ucla.edu/wp-content/uploads/Harrison-Quintana-Herman-LGBTQ-Policy-Journal-2013.pdf; Everett McDuffie and George R. Brown, "Seventy U.S. Veterans with Gender Identity Disturbances: A Descriptive Study," *International Journal of Transgenderism* 12, 1 (2010): 21-30.
21. Department of Defense Instruction 6130.03 requires a reference to diagnostic codes in the International Classification of Diseases (*ICD*-9), and the *ICD* does list diagnoses for both transsexualism and gender identity disorder. Department of Defense translates *DSM-IV* diagnoses to the closest ICD code.
22. In the World Professional Association for Transgender Health Standards of Care, dysphoria refers to the distress itself, not the incongruence between gender identity and assigned sex. See Coleman et al., "Standards of Care for the Health of Transsexual, Transgender, and Gender-nonconforming People, Version 7," 168. Indeed, non-transgender people can experience gender dysphoria. For example, some men who are disabled in combat, especially if their injury includes genital wounds, may feel that they are no longer men because their bodies do not conform to their concept of manliness. Similarly, a woman who opposes plastic surgery, but who must undergo mastectomy because of breast cancer, may find that she requires reconstructive breast surgery in order to resolve gender dysphoria arising from the incongruence between her body without breasts and her sense of herself as a woman.

23. Coleman et al., "Standards of Care for the Health of Transsexual, Transgender, and Gender-nonconforming People, Version 7," 168.
24. Jack Drescher, Peggy Cohen-Kettenis, and Sam Winter, "Minding the Body: Situating Gender Identity Diagnoses in the ICD-11," *International Review of Psychiatry* 24, 6 (2012): 575, 569, 574.
25. Ilan H. Meyer and Mary E. Northridge, eds., *The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations* (New York: Springer, 2007).
26. Drescher, Cohen-Kettenis, and Winter, "Minding the Body," 573.
27. Coleman et al., "Standards of Care for the Health of Transsexual, Transgender, and Gender-nonconforming People, Version 7," 230, citing findings of multiple studies including Richard Green and Davis Fleming, "Transsexual Surgery Follow-up: Status in the 1990s," *Annual Review of Sex Research* 1, 1 (1990): 163-74. See Coleman et al. for additional references.
28. Anne Gaderman et al., "Prevalence of DSM-IV Major Depression Among U.S. Military Personnel," *Military Medicine* 177, 8 (2012): 47-59.
29. Kim Murphy, "A Fog of Drugs and War," *Los Angeles Times,* April 7, 2012, accessed July 18, 2014, http://articles.latimes.com/2012/apr/07/nation/la-na-army-medication-20120408.
30. Katherine Blakeley and Don J. Jansen, *Post-traumatic Stress Disorder and Other Mental Health Problems in the Military: Oversight Issues for Congress* (Washington, DC: Congressional Research Service, 2013), 2, citing "Mental Disorders and Mental Health Problems, Active Component, US Armed Forces, 2000-2011," *Medical Surveillance Monthly Report* 19, 6 (June 2012): 11-17.
31. Paul R. Sackett and Anne S. Mavor, eds., *Assessing Fitness for Military Enlistment Physical, Medical, and Mental Health Standards* (Washington, DC: The National Academies Press, 2006), 144.
32. Adam F. Yerke and Valory Mitchell, "Transgender People in the Military: Don't Ask? Don't Tell? Don't Enlist!," *Journal of Homosexuality* 60, 2-3 (2013): 445. Also see Drescher, Cohen-Kettenis, and Winter, "Minding the Body," 573.
33. Meyer and Northridge, *The Health of Sexual Minorities*, 2007.
34. Ministry of Defence, *Policy for the Recruitment and Management of Transsexual Personnel in the Armed Forces* (London, UK: Ministry of Defence, January 2009).
35. Although service members are not prohibited explicitly from obtaining cross-sex hormone treatment, the use of hormones to modify primary or secondary sex characteristics would almost certainly constitute evidence of having a transgender identity, which is grounds for discharge.
36. H. Asscheman et al., "A Long-term Follow-up Study of Mortality in Transsexuals Receiving Treatment with Cross-sex Hormones," *European Journal of Endocrinology* 164, 4 (2011): 635-42; Paul Van Kesteren et al., "Mortality and Morbidity in Transsexual Subjects Treated with Cross-sex Hormones," *Clinical Endocrinology* 47, 3 (1997): 337-43; M. Colizzi, R. Costa, and O. Todarello, "Transsexual Patients' Psychiatric Comorbidity and Positive Effect of Cross-sex Hormonal Treatment on Mental Health: Results from a Longitudinal Study," *Psychoneuroendocrinology* 39 (2014): 65-73.

37. H. Asscheman et al., "Venous Thrombo-embolism as a Complication of Cross-sex Hormone Treatment of Male-to-Female Transsexual Subjects: A Review," *Andrologia*, August 14, 2013. doi: 10.1111/and.12150.
38. Tom Waddell Health Center, *Protocols for Hormonal Reassignment of Gender*, 2006, accessed November 6, 2013, http://www.sfdph.org/dph/comupg/oservices/medSvs/hlthCtrs/TransGendprotocols122006.pdf.
39. Department of Defense, *Health Related Behaviors Survey of Active Duty Military Personnel 2011* (Washington, DC: Department of Defense, 2013), 119-20, 130-31, 248, 264-65.
40. Department of Defense, *Policy Guidance for Deployment-limiting Psychiatric Conditions and Medications* (Washington, DC: Department of Defense, 2006) at ¶ 4.2.3.
41. Andrew Tilghman, "'Any Soldier Can Deploy on Anything': Pentagon Rules Bar Some Drugs from Combat Zone, but Oversight Is Suspect," *Army Times*, March 17, 2010, accessed July 18, 2014, http://www.armytimes.com/article/20100317/NEWS/3170310/-8216-Any-soldier-can-deploy-anything-.
42. Tilghman, "Any Soldier Can Deploy on Anything," 2010.
43. Department of the Army, *Personnel Policy Guidance for Overseas Contingency Operations* (Washington, DC: Department of the Army, 2009), at ¶ 7-13(b)1.
44. See, for example, American Medical Association, Resolution 122 (A-08), 2008, accessed July 18, 2014, http://www.tgender.net/taw/ama_resolutions.pdf.
45. Coleman et al., "Standards of Care for the Health of Transsexual, Transgender, and Gender-nonconforming People, Version 7," 170-71.
46. For a list of 313 allowable, elective cosmetic procedures, see Tricare Management Activity, Uniform Business Office, *Provider's Guide to the Elective Cosmetic Surgery Superbill.* (Falls Church, VA: TRICARE Management Activity, Uniform Business Office, 2013).
47. Patel, Morris, and Gassman show that these complications may include "airway, vascular, hemorrhage, vascular compromise, neurologic, infectious, skeletal, unfavorable osteotomy, tooth injury, nonunion, postoperative malocclusion, temporomandibular joint disorders, and unfavorable aesthetic results." See P. Patel, D. Morris, and A. Gassman, "Complications of Orthognathic Surgery," *Journal of Craniofacial Surgery* 18, 4 (2007): 975-85. The military allows personnel to have elective cosmetic surgeries on a space-available basis and at their own expense.
48. Patel, Morris, and Gassman, "Complications of Orthognathic Surgery," 2007; F. Kramer et al., "Intra- and Perioperative Complications of the LeFort I Osteotomy: A Prospective Evaluation of 1000 Patients," *Journal of Craniofacial Surgery* 15, 6 (2004): 971-77; K. Jones, "Le Fort II and Le Fort III Osteotomies for Midface Reconstruction and Considerations for Internal Fixation," in *Craniomaxillofacial Reconstructive and Corrective Bone Surgery*, eds. A. Greenberg and J. Prein (New York: Springer, 2006), 667-68.
49. Herman found in a recent study that the highest annualized utilization rate for large employers is 0.044 claimants per thousand employees annually (Table 8). If the military were similar to civilian firms, and given that the active, Guard and Reserve components currently include 2,280,875 personnel, then one would expect $0.044 \times 2,281 = 100$ claimants per year if the Military Health System covered gender-confirming surgery.

However, transgender people are over-represented in the military (15,450/2,280,875 million = 0.68 percent military as compared to 0.3 percent of the civilian adult population), and so the figure of 100 claimants per year should be adjusted upward by .68/.3 = 2.3×. Hence, if the military paid for transition-related surgery, one would expect 2.3 × 100 = 230 claims per year. See Jody L. Herman, *Costs and Benefits of Providing Transition-related Health Care Coverage in Employee Health Benefits Plans* (Los Angeles, CA: Williams Institute, 2013).

50. Herman, *Costs and Benefits of Providing Transition-related Health Care Coverage in Employee Health Benefits Plans*, 6.
51. Short-term surgical complications can include rectal injury, infection, delayed wound healing, bleeding, venous thromboembolism, and/or urethral stream abnormalities. While many of these complications are either self-limited or may be treated with local wound care, antibiotics, or anticoagulants, some, such as rectal injury, may require additional surgical procedures such as a temporary colostomy. Long-term complications can include vaginal stenosis and unsatisfactory appearance of the surgically reconstructed genitalia, and vaginal stenosis may require additional procedures such as skin grafts or intestinal transposition.
52. A. A. Lawrence, "Patient-reported Complications and Functional Outcomes of Male-to-female Sex Reassignment Surgery," *Archives of Sexual Behavior* 35, 6 (2006): 717-27.
53. Cameron Bowman and Joshua M. Goldberg, "Care of the Patient Undergoing Sex Reassignment Surgery," *International Journal of Transgenderism* 9, 3-4 (2006): 135-65; Miroslav L. Djordjevic, Dusan S. Stanojevic, and Marta R. Bizic, "Rectosigmoid Vaginoplasty: Clinical Experience and Outcomes in 86 Cases," *Journal of Sexual Medicine* 8, 12 (2011): 3487-94; Ji-Xiang Wu et al., "Laparoscopic Vaginal Reconstruction Using an Ileal Segment," *International Journal of Gynecology and Obstetrics* 107, 3 (2009): 258-61; L. Jarolím et al., "Gender Reassignment Surgery in Male-to-female Transsexualism: A Retrospective 3-month Follow-up Study with Anatomical Remarks," *Journal of Sexual Medicine* 6, 6 (2009): 1635-44; S. V. Perovic, D. S. Stanojevic, and M. L. J. Djordjevic, "Vaginoplasty in Male Transsexuals Using Penile Skin and a Urethral Flap," *BJU International* 86, 7 (2000): 843-50.
54. Presumably, any postoperative MTF individuals with ongoing complications would be screened out at the time of enlistment. Hence, the only MTF troops who would be unfit for duty would be those experiencing ongoing postoperative complications from genital surgeries they elected to have after joining the military. As explained previously, if the Military Health Service paid for transition-related care, one would expect 230 claimants per year. Approximately 90 percent of transgender troops are MTF's, thus suggesting .9 × 230 = 207 claimants per year for MTF transition-related coverage. If 5 percent of such claims entailed ongoing postoperative complications, this would mean that ten MTF transgender troops would become permanently unfit for duty each year.
55. For example, see S. Baumeister et al., "Phalloplasty in Female-to-male Transsexuals: Experience from 259 Cases [Article in German]," *Handchir Mikrochir Plast Chir* 43, 4 (2011): 215-21; J. E. Terrier et al., "Surgical Outcomes and Patients' Satisfaction with Suprapubic Phalloplasty," *Journal of Sexual Medicine* 11, 1 (September 12, 2013):

288-98; P. A. Sutcliffe et al., "Evaluation of Surgical Procedures for Sex Reassignment: A Systematic Review," *Journal of Plastic, Reconstructive and Aesthetic Surgery* 62, 3 (2009): 294-306.

56. These figures are derived from raw data that informed Grant, Mottet, and Tanis, *Injustice at Every Turn*, 2011.
57. Presumably, any postoperative FTM individuals with ongoing complications would be screened out at the time of enlistment. Hence, the only FTM troops who, as a class, would be unfit for duty would be those experiencing ongoing postoperative complications from genital surgeries they elected to have after joining the military. As explained previously, if the Military Health Service paid for transition-related care, one would expect 230 claimants per year. However, only 10 percent of transgender troops are FTMs, thus suggesting .1 × 230 = 23 claimants per year for FTM transition-related coverage. If one quarter of such claims entailed ongoing postoperative complications, this would mean that six FTM transgender troops would become permanently unfit for duty each year.
58. Chris Johnson, "Pentagon's Gay-inclusive Human Goals Charter Omits Trans People," *Washington Blade*, April 28, 2014, accessed July 18, 2014, http://www.washingtonblade.com/2014/04/28/pentagons-gay-inclusive-human-rights-charter-omits-trans-people/.
59. Department of the Army, *Personnel Policy Guidance for Overseas Contingency Operations*, 2009, 7-9(e).
60. Ministry of Defence, *Policy for the Recruitment and Management of Transsexual Personnel in the Armed Forces*, 2009.
61. DODI 1332.38, *Physical Disability Evaluation,* Enclosure 3, at ¶¶ P3.4.1.3, P3.4.3, and Enclosure 4, at ¶ 1.1.2.
62. Department of Defense, *Health Related Behaviors Survey of Active Duty Military Personnel 2011*, 2013.
63. United States Code, Title 10, Section 701(a).
64. Department of Defense Instruction 1327.06, *Leave and Liberty Policy and Procedures*, June 16, 2009, Incorporating Change 2, effective August 13, 2013, Enclosure 2, at ¶ 1c.
65. DODI 1327.06, *Leave and Liberty Policy*, Enclosure 2, at ¶¶ 1j(1), 1a.
66. Army Regulation 600-8-10, *Leave and Passes* (August 4, 2011 revision), at ¶ 5-3e.
67. Army Medical Command, OTSG/MEDCOM Policy Memo 12-076, *Revised Policy for Cosmetic Surgery Procedures and Tattoo/Brand Removal/Alteration in the Military Health System* (November 20, 2012), at ¶¶ 5e(15), 5f(2).
68. Army Medical Command, *Revised Policy for Cosmetic Surgery*, at ¶ 5(e)(7).
69. See, for example, Department of the Air Force Instruction 36-2110, *Assignments* (Change 2, June 8, 2012), at ¶ 2.17.1.
70. Department of the Air Force Instruction 36-2110, *Assignments,* at ¶ 2.17.3 and table 2.2.
71. DODI 1332.38, *Physical Disability Evaluation*, Enclosure 3, at ¶ P7.3.

Author Biographies

M. Joycelyn Elders was appointed the sixteenth surgeon general of the United States by President Clinton in 1993 and was the second woman to head the US

Public Health Service. After high school, she earned a scholarship to the all-black liberal arts Philander Smith College in Little Rock. She then joined the Army and trained in physical therapy at the Brooke Army Medical Center at Fort Sam Houston, Texas. After discharge in 1956, she enrolled at the University of Arkansas Medical School on the G.I. Bill. She did an internship in pediatrics at the University of Minnesota, and in 1961 returned to the University of Arkansas for her residency. She became chief resident in charge of the all-white, all-male residents and interns, earned her master's degree in biochemistry in 1967 and became an assistant professor of pediatrics at the university's medical school in 1971 and full professor in 1976. Over the next twenty years, she combined her clinical practice with research in pediatric endocrinology, publishing well over a hundred articles, most dealing with problems of growth and juvenile diabetes. She left office in 1994 and in 1995 she returned to the University of Arkansas as a faculty researcher and professor of pediatric endocrinology at the Arkansas Children's Hospital. In 1996, she wrote her autobiography, *Joycelyn Elders, M.D.: From Sharecropper's Daughter to Surgeon General of the United States of America*. Now retired from practice, she is a professor emeritus at the University of Arkansas, School of Medicine and remains active in public health education.

George R. Brown is an associate chairman and professor of psychiatry at East Tennessee State University in Johnson City, TN. He is currently serving his third term on the Board of Directors for the World Professional Association for Transgender Health, where he also serves as a member of the Incarceration/Institutionalization Committee and the Standards of Care Committee. He is a coauthor on the last three versions of the Standards of Care. He served as chief of psychiatry at Mountain Home VAMC for eighteen years and served twelve years in the US Air Force as a psychiatrist. He has served as an expert witness in several national precedent-setting cases that have benefitted transgender persons. He has published over 135 articles and scientific abstracts, as well as twenty-two book chapters, many of which have been on transgender health care issues. He has presented his work on transgender issues at one-third of the medical schools in the United States as well as in seven nations. He is a University of Rochester School of Medicine graduate who subsequently did residency at Wright State University as an officer in the USAF. He is board certified in General Psychiatry and a Distinguished Fellow in the American Psychiatric Association. His areas of expertise include gender identity disorders/gender dysphoria and psychopharmacology.

Eli Coleman is the director of the program in human sexuality, Department of Family Medicine and Community Health, University of Minnesota Medical School in Minneapolis, where he holds the first and only endowed academic chair in sexual health. He has authored articles and books on a variety of sexual health topics, including compulsive sexual behavior, sexual orientation, and gender dysphoria. He is the founding editor of the *International Journal of Transgenderism* and founding and current editor of the *International Journal of Sexual Health*. He is past president of the Society for the Scientific Study of Sexuality, the World Professional

Association for Transgender Health, the World Association for Sexual Health, and the International Academy for Sex Research. In 2013, he was elected President of the Society for Sex Therapy and Research for a two-year term. He has been the recipient of numerous awards including the US Surgeon General's Exemplary Service Award for his role as senior scientist on *Surgeon General's Call to Action to Promote Sexual Health and Responsible Sexual Behavior*, released in 2001. In 2007, he was awarded the gold medal for his lifetime contributions to the field of sexual health by the World Association for Sexual Health. In 2007, he was appointed the first endowed Chair in Sexual Health at the University of Minnesota Medical School.

Thomas Kolditz is a professor in the Practice of Leadership and Management and director of the Leadership Development Program at the Yale School of Management. A professor emeritus at the US Military Academy, he led the Department of Behavioral Sciences and Leadership at West Point for twelve years. He served for two years as a leadership and human resources policy analyst in the Pentagon, and a year as a concept developer in the Center for Army Leadership, and was the founding director of the West Point Leadership Center. He is also the managing member of Saxon Castle LLC, a leader development consultancy. He has published extensively across a diverse array of academic and leadership trade journals, and serves on the editorial and advisory boards of several academic journals. He is a fellow in the American Psychological Association and is a member of the Academy of Management. His most recent book is *In Extremis Leadership: Leading as if Your Life Depended on It.* In 2009, he was named to the Council of Senior Advisors, Future of Executive Development Forum.

Alan M. Steinman was first commissioned in the United States Public Health Service as a lieutenant in July 1972 and served in a number of senior medical officer capacities at the USCG. In 1993, he was selected for promotion to flag officer for the position of Director of Health and Safety at USCG HQ. Steinman retired from the Coast Guard and the Public Health Service in 1997. His educational degrees include a Bachelor of Science from the Massachusetts Institute of Technology, a Doctor of Medicine from the Stanford University School of Medicine, and a Master of Public Health from the University of Washington. He also graduated from the US Navy School of Aerospace Medicine. He is board certified in Occupational Medicine and is a Fellow of the American College of Preventive Medicine. He also served as the director of the Coast Guard's Safety and Environmental Health programs, overseeing the safety of all USCG personnel. He has an international reputation in cold-weather medicine, hypothermia, and sea survival, and he is widely published in these areas, including numerous articles in medical journals and chapters in textbooks of emergency medicine and cold-weather medicine. He currently serves as a consultant in cold-weather medicine and holds the position of professional affiliate with the Health, Leisure and Human Performance Research Institute at the University of Manitoba. For the past five years, he has lectured to college classes on Joint Base Lewis-McChord on the issue of gays and lesbians in the military.

INTERNATIONAL REVIEW OF PSYCHIATRY, 2016
VOL. 28, NO. 1, 44–57
http://dx.doi.org/10.3109/09540261.2015.1115753

Taylor & Francis
Taylor & Francis Group

REVIEW ARTICLE

Mental health and gender dysphoria: A review of the literature

Cecilia Dhejne[a], Roy Van Vlerken[b], Gunter Heylens[c] and Jon Arcelus[d,e]

[a]Gender Team, Centre for Andrology and Sexual Medicine and Centre for Psychiatry Research, Department of Clinical Neuroscience, Karolinska Institute and University Hospital, Stockholm, Sweden; [b]Centre of Expertise on Gender Dysphoria, VU University Medical Centre, Amsterdam, Netherlands; [c]Centre for Sexology and Gender, University Hospital, Ghent, Belgium; [d]Nottingham Centre for Gender Dysphoria, Nottingham, UK; [e]Division of Psychiatry and Applied Psychology, Faculty of Medicine & Health Sciences, University of Nottingham, Nottingham, UK

ABSTRACT

Studies investigating the prevalence of psychiatric disorders among trans individuals have identified elevated rates of psychopathology. Research has also provided conflicting psychiatric outcomes following gender-confirming medical interventions. This review identifies 38 cross-sectional and longitudinal studies describing prevalence rates of psychiatric disorders and psychiatric outcomes, pre- and post-gender-confirming medical interventions, for people with gender dysphoria. It indicates that, although the levels of psychopathology and psychiatric disorders in trans people attending services at the time of assessment are higher than in the cis population, they do improve following gender-confirming medical intervention, in many cases reaching normative values. The main Axis I psychiatric disorders were found to be depression and anxiety disorder. Other major psychiatric disorders, such as schizophrenia and bipolar disorder, were rare and were no more prevalent than in the general population. There was conflicting evidence regarding gender differences: some studies found higher psychopathology in trans women, while others found no differences between gender groups. Although many studies were methodologically weak, and included people at different stages of transition within the same cohort of patients, overall this review indicates that trans people attending transgender health-care services appear to have a higher risk of psychiatric morbidity (that improves following treatment), and thus confirms the vulnerability of this population.

ARTICLE HISTORY
Received 2 July 2015
Revised 30 October 2015
Accepted 30 October 2015
Published online 28 January 2016

KEYWORDS
Gender dysphoria; transsexualism; mental health; psychiatric disorders; depression; anxiety

Introduction

The Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People, version 7 (SOC-7) by the World Professional Association for Transgender Health (WPATH), provides clinical guidance in 'how to assist transsexual, transgender, and gender nonconforming people with safe and effective pathways to achieving lasting personal comfort with their gendered selves, in order to maximize their overall health, psychological well-being, and self-fulfilment. This assistance may include primary care, gynaecological and urological care, reproductive options, voice and communication therapy, mental health services (e.g. assessment, counselling, psychotherapy), and hormonal and surgical treatments' (Coleman et al., 2012). SOC-7 argues that the mental health professional should work within a multi-disciplinary team or in close contact with other gender specialists. The main roles of mental health professionals within gender care have been described as:

1. To facilitate the diagnosis of gender dysphoria
2. To assess for psychiatric co-morbidity
3. To explore the readiness for gender-confirming medical intervention (Coleman et al., 2012).
4. To support the trans person through the health pathway (Lev, 2009).

Although some professionals in the field have described the involvement of a mental health professional in the care of trans people as a responsible form of care (Selvaggi & Giordano, 2014), it could be argued that this is the direct result of transsexualism or gender dysphoria being considered a psychiatric diagnosis. The placement of the diagnoses (either gender dysphoria or transsexualism) within the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) (American Psychiatric Association, 2013), and within the Mental and Behavioural Disorders chapter of the *International Classification of Diseases and Health Related Problems* (World Health Organization, 1992), has been subject to continuing debate. The first appearance of these diagnoses in the aforementioned publications (using different

CONTACT Cecilia Dhejne, MD cecilia.dhejne@karolinska.se Gender Team, Centre for Andrology and Sexual Medicine and Centre for Psychiatry Research, Department of Clinical Neuroscience, Karolinska Institute and University Hospital, Stockholm, Sweden

terms) may be related to the social and medical attitudes at the time when Harry Benjamin started to describe and treat trans people (Drescher et al., 2012). Whether incongruence with one's gender is a natural variation or a pathology, and how this view may influence discrimination, stigma and access to medical treatment, is well discussed in a paper by Meyer-Bahlburg (2010).

The WHO's proposal for the next edition of the ICD (ICD-11) is to replace the current diagnostic term 'transsexualism' with 'gender incongruence', and to move this diagnosis from chapter 5 to a new chapter entitled 'Conditions related to sexual health' (Drescher et al., 2012). This will support the view of many that a diagnosis describing trans people should not be part of a psychiatric category (Richards et al., 2015). This could help to remove some of the stigma which trans people currently encounter. However, by doing so, it also raises questions concerning the future role, if any, of mental health professionals in transgender care.

One of the roles may be connected to the high prevalence of psychiatric morbidity among trans people described in the literature (Gomez-Gil et al., 2009; Hepp et al., 2005; Heylens et al., 2014a; Mazaheri Meybodi et al., 2014a), which may require assessment and management by a mental health professional. The literature in this area is confusing, as different prevalence rates of psychiatric co-morbidity have been described.

With this in mind, this paper has two aims:

1. To review the available literature that looks at the prevalence of psychiatric disorders and psychopathology among trans people
2. To review the available literature describing the psychiatric outcome following gender-confirming medical interventions (GCMI), either cross-sex hormone treatment (CHT) and/or gender-confirming genital surgery (GCGS)

As the terminology in this field has changed over the years, the term 'trans people' will be used in this review to refer to individuals with gender dysphoria attending transgender health-care services and, in most cases, seeking gender-confirming medical interventions.

Methodology

Eligibility criteria

Studies were selected only if participants were diagnosed by health professionals, and/or had been accepted for gender-confirming interventions, and had empirical data relating to the prevalence of psychiatric morbidity or psychopathology pre- or post-treatment. Articles dealing exclusively with self-harm (non-suicidal self-injury), suicidality, autism, eating disorders or individuals under 18 years old were not included, as they are part of other reviews within this special edition. Only studies in English and with more than 10 participants were selected.

Information sources and search

An electronic literature search was conducted between January 2000 and April 2015 using PubMed. Articles in the *International Journal of Transgenderism* (not in PubMed) were also included, in order to identify more studies. Additionally, reference sections of identified articles were also examined for further relevant publications. The search used the following words in the title and/or abstract.

1. For terms referring to trans people: *transsexualism, transsexual, transgender, gender dysphoria, gender identity disorder, trans**
2. For psychiatric disorders and psychopathology: *mental health, psychopathology, psychiatric, depression, anxiety*

Every term used for trans people was combined using the 'or' and the 'and' operator with every term used for psychiatric disorders and psychopathology.

Study selection

A total of 647 studies were identified. By the screening of titles and abstracts, 47 studies fulfilled the eligibility criteria and were selected for more in-depth analysis. Out of these 47 studies, nine were excluded because they did not provide data regarding psychiatric disorders or psychopathology, but focused primarily on quality of life or sexual health, thus a total of 38 studies were selected for this review. Data extraction was performed using a standardized table with the following categories: title, authors, date of publication, participants, age at assessment, study design, diagnostic criteria used, control group, measurements related to psychiatric disorder and/or psychopathology, prevalence rates of psychiatric disorders, and conclusions of the study. For those papers investigating outcome, information regarding follow-up was also included, as well as the outcome on psychopathology and/or psychiatric disorders. The data is summarized in two tables: Table 1 shows cross-sectional studies describing prevalence rates of psychiatric disorders and/or psychopathology in trans people (27 studies). This table includes trans people at different stages of treatment. Table 2 shows longitudinal studies describing psychiatric outcome of post gender-confirming medical interventions (11 studies).

Table 1. Cross-sectional studies investigating psychiatric disorders and psychopathology in trans people.

Authors (year) Country	Number of trans participants/ diagnosis/ mean age at assessment	Treatment status: (on CHT or post-GCGS)	Study design	Comparative groups	Outcome measure	Prevalence in trans	Conclusion
Haraldsen & Dahl (2000) Norway	35 FtM 51 MtF DSM-III-R DSM-IV 34.0 years FtM 33.3 years MtF	CHT NR GCGS Mixed pre- and post-surgery	Single centre (Gender clinic) Cross-sectional	CC 1068 Personality disorder (PD) 101	SCID-I SCID-II GAF SCL-90R	Axis 1 disorders (mostly depression and anxiety) 32.5% Axis 2 disorders 19.8% SCL-90R as per CC	Groups: Trans lower scores in SCL-90R than PD Gender: MtF lower SCL-90R compared to FtM
Miach et al. (2000) Australia	82 MtF: 48 GID 34 GIDAANT DSM-III-R 33.5 years	CHT NR GCGS 0%	Single centre (Gender clinic) Cross-sectional	GID vs GIDAANT	MMPI-2	Psycho-pathology: Low in 85% of GID High in 47% of GIDAANT	GID differs significantly in degree of psycho-pathology from GIDAANT
Kersting et al. (2003) Germany	12 FtM 29 MtF DSM-IV 34.7 years	CHT NR GCGS 17%	Single centre (Gender clinic) Cross-sectional	Psychiatric inpatients 115 Normative data	DES SCID-D	Dissociative symptoms: Trans similar to psychiatric inpatients	DES and SCID-D limited validity in trans people
Hepp et al. (2005) Switzerland	11 FtM 20 MtF DSM-IV 33.2 years	CHT 32% GCGS 23%	Single centre (Gender clinic) Cross-sectional	No	SCID-I, -II HADS	Axis I disorder current (mostly anxiety) 38.7% Axis I disorder, lifetime (mostly mood disorder and substance abuse) 71% Axis II disorder 41.9%	Gender, age, treatment status: No differences
Kim et al. (2006) Korea	43 MtF DSM-IV 20.4 years	CHT 88% GCGS 26%	Single centre (Identified as part of the military service examination with gender dysphoria) Cross-sectional	Cis men 47 Matched for age and education	BDI SADS SES	BDI (mean) 21.4 SADS (mean) 13.6 SES (mean) 16.5	Trans significantly higher scores on depression and social anxiety, and lower scores on self-esteem than controls
Gomez-Gil et al. (2008)[a] Spain	56 FtM 107 MtF DSM-IV 27.3 years FtM 29.9 years MtF	CHT NR GCGS 0%	Single centre (Gender clinic) Cross-sectional	Normative data	MMPI-2	MMPI: Within normal range	Gender: MtF not on CHT scored higher than on CHT FtM no difference regarding CHT status Limitation: Pre-/post groups not the same
Gomez-Gil et al. (2009)[a] Spain	159 MtF 71 FtM DSM-IV-TR ICD-10 27.3 years FtM 29.7 years MtF	CHT 49% GCGS 0%	Single centre (Gender clinic) Cross-sectional	No	MINI	Psychiatric disorders Life time: Mood and adjustment disorders 56% (MtF) and 70.4% (FtM) Non-alcohol substance abuse/ dependence 30.2% (MtF) Generalized anxiety disorder 8.8% (MtF) and 5.6% (FtM) Current: Social phobia 8.2% (MtF) and 11.3% (FtM)	Adjustment disorders and substance abuse more frequent in MtF vs FtM

(continued)

Table 1. Continued

Authors (year) Country	Number of trans participants/ diagnosis/ mean age at assessment	Treatment status: (on CHT or post-GCGS)	Study design	Comparative groups	Outcome measure	Prevalence in trans	Conclusion
Madeddu et al. (2009) Italy	34 MtF 16 FtM DSM-IV-TR 31.7 years	CHT 36% GCGS 0%	Single centre (Gender clinic) Cross-sectional	No	SCID-II	Axis II disorders 52% Most frequent PD Narcissistic	No Axis II differences between genders
Weyers et al. (2009) Belgium	50 MtF ICD-10 43.06 years	CHT 100% GCGS 100%	Single centre (Gender clinic) Cross-sectional	Normative data	SF-36	Mental health problems: No difference to normative data	Less Psychopathology if in a relationship
Hoshiai et al. (2010) Japan	349 FtM 230 MtF DSM-IV 26.5 years FtM 32.0 years MtF	CHT 32% GCGS 12%	Single centre (Gender clinic) Cross-sectional	No	Clinical interview and clinical records	Axis I disorder 13.6% Adjustment disorder 6.7% Anxiety disorder 3.6% Mood disorder 1.4%	MtF more Axis I disorders compared to FtM
Bandini et al. (2011)[b] Italy	109 MtF DSM-IV-TR 36.0 years	CHT 70.6% GCGS 25.7%	Single centre (Gender clinics) Cross-sectional	Trans with and without childhood maltreatment (CM)	Psychiatric interview SCL-90R	Psychiatric disorder (life time): 66.7% (CM) 37.2% (non-CM) SCL-90R: no difference between groups	CM group higher body dissatisfaction and worse life time mental health
Dhejne et al. (2011) Sweden	191 MtF 133 FtM ICD-8,-9,-10 33.3 years FtM 36.3 years MtF	CHT NR GCGS 100%	Multi centre (National register) Cross-sectional	CC 3240 matched for age, natal and new assigned gender	Death (including suicide) Psychiatric morbidity and abuse	When compared to 1973-2003 controls: Mortality 2.8 HRadj Any psychiatry diagnoses: 2.8 HRadj Suicide attempts: 4.9 HRadj When compared 1989-2003 to controls: Mortality the same. Any psychiatry diagnoses: 2.8 HRadj Suicide attempts: the same	Gender: no difference, natal or assigned gender Female or male control group: No difference
Simon et al. (2011) Hungary	30 MtF 17 FtM DSM-IV 28.0 years FtM 26.0 years MtF	CHT NR GCGS 0%	Single centre (Gender clinic) Cross-sectional	CC= 157	SCL-90R	Psychopathology: SCL-90R: No differences compared to controls	MtF elevated levels of interpersonal sensitivity
Gomez-Gil et al. (2012)[a] Spain	74 FtM 113 MtF ICD-10 DSM-IV-TR 29.7 years	CHT 35.8% GCGS 42.2%	Single centre (Gender clinic) Cross-sectional	Trans with and without treatment Normative data	SADS HAD-A HAD-D	Social anxiety, depression and anxiety: SADS, HADS scores normal range except for HAD-A Differences CHT or not: CHT group lower scores	Gender: No difference CHT: CHT group better when compared to not treated Limitation: Pre-/post groups were not the same
Gorin-Lazard et al. (2012)[c] France	30 FtM 31 MtF DSM-IV-TR 29.9 years FtM 39.4 years MtF	CHT 72.1% GCGS NR	Multi centre (Gender clinic) Cross-sectional	No	BDI	Depression: 25% significant scores in the BDI	Gender: no difference
Auer et al. (2013) Germany	32 FtM 57 MtF ICD-10	CHT 100% GCGS 65%	Single centre (Endocrinology clinic) Cross-sectional	CC 336 age and sex (natal and phenotype) matched	SCL-90R	Psychopathology: SCL-90R worse scores on all scales compared controls	Gender: Depressive symptoms higher in MtF FtM have profile as cis men MtF more similar to cis women

(continued)

Table 1. Continued

Authors (year) Country	Number of trans participants/ diagnosis/ mean age at assessment	Treatment status: (on CHT or post-GCGS)	Study design	Comparative groups	Outcome measure	Prevalence in trans	Conclusion
	32.3 years FtM 47.9 years MtF						
Fisher et al. (2013)[b] Italy	92 MtF 48 FtM DSM-IV-TR 32.6 years	CHT 69.8% GCGS 22.1%	Single centre (Gender clinic) Cross-sectional	No	SCID-I-II SCL-90R	Axis I disorders 18.7% Mood and adjustment disorder 10.8% Anxiety disorder 5% Axis II disorders 4.3%	Gender: no difference
Gorin-Lazard et al. (2013)[c] France	31FtM 36 MtF DSM-IV-TR 35.1 years	CHT 73.1% GCGS NR	Multi-centre (Gender clinics) Cross-sectional	Trans with and without CHT	BDI SSEI	Depression and self-esteem: Trans on CHT less depressive symptoms, better self esteem	NA Limitation: Pre-/post groups were not the same
Davey et al. (2014) UK	63 MtF 40 FtM ICD-10 45.7 years	CHT 78.6% GCGS 16.5%	Single centre (Gender clinic) Cross-sectional	CC 103 Controlled by age	SCL-90R	Psychopathology: SCL-90R scores higher in trans	Social support did not significantly predict psychopathology
Duisin et al. (2014) Serbia	21 MtF 9 FtM DSM-IV-TR 30.4 years	CHT NR GCGS 0%	Single centre (Gender clinic) Cross-sectional	CC 30	SCID-II	Axis-II diagnosis 66.6% (most frequent paranoid and avoidant)	Difference: GID group more Axis-II disorders compared to CC group Gender: MtF more psychopathology compared to FtM
Fisher et al. (2014)[b] Italy	59 FtM 66 MtF DSM-IV-TR 28.7 years FtM 33.1 years MtF	CHT 0% GCGS NR	Multi-centre (Gender clinics) Cross-sectional	Trans with and without CHT	SCL-90R BUT GSI	Psychopathology: No difference between both on SCL-90R BUT GSI: MtF with CHT group had less body uneasiness than not treated group	Body uneasiness effectively diminished with CHT Limitation: Pre-/post groups were not the same
Judge et al. (2014) Ireland	159 MtF 59 FtM DSM-IV-TR 32.6 years	CHT 20.2% GCGS 1.6%	Single centre (Gender clinic) Cross-sectional	No	Psychiatric assessment by mental health professional	Depression (lifetime) 34.4% Schizophrenia 3.67% Bipolar disorder 2.29%	High prevalence of psychiatric conditions Limitation: No controls
Heylens et al. (2014a) Belgium Germany Netherlands Norway	182 MtF 123 FtM DSM-IV-TR 22.8-31.2 years FtM 21.6-36.5 years MtF (Depends on country)	CHT 0% GCGS 0%	Multicentre 4 countries Cross-sectional	No	MINI SCID-II	Axis I diagnosis (current) 38% Affective problems 27% Anxiety problems 17% Axis I (current and lifetime) 70% Affective problems 60% Anxiety problems 28% Axis II diagnosis 15%	Gender, age of onset: No differences
Mazaheri Meybodi et al. (2014a) Iran	47 MtF 36 FtM DSM-IV-TR Age: NR	CHT 92.9% GCGS 0%	Single centre (Gender clinic) Cross-sectional	No	SCID-I	Axis-I diagnosis 62.7% Major depressive disorder (33.7%) Specific phobia (20.5%) Adjustment disorder (15.7%)	High prevalence of Axis I diagnosis Limitation: No controls
Mazaheri Meybodi et al. (2014b) Iran	39 MtF 31 FtM DSM-IV-TR Age: NR	CHT 92.9% GCGS 0%	Single centre (Gender clinic) Cross-sectional	No	MCMI-II	Axis II diagnosis 81.4% (57.1% narcissistic)	High prevalence of Axis II diagnosis Limitation: No controls
Claes et al. (2015) UK	103 MtF 52 FtM	CHT 0% GCGS 0%		No	SCL-90R RSE	Psychopathology: MtF reported significantly higher scores	

(continued)

Table 1. Continued

Authors (year) Country	Number of trans participants/ diagnosis/ mean age at assessment	Treatment status: (on CHT or post-GCGS)	Study design	Comparative groups	Outcome measure	Prevalence in trans	Conclusion
	ICD-10 34.5 years		Single centre (Gender clinic) Cross-sectional			on paranoid ideation, interpersonal distrust, anxiety, depression and obsessive-compulsive complaints compared with FtM	Gender: MtF significantly lower level of self-esteem compared to FtM
Colizzi et al. (2015) Italy	85 MtF 33 FtM DSM-IV-TR 30.2 years	CHT 0% GCGS 0%	Single centre (Gender clinic) Cross-sectional	No	DDIS DES	Dissociative disorders 29.6%	Gender: No differences

BDI, Beck depression inventory; BUT-GSI, Body Uneasiness Test Global Severity Index (the total score of BUT); CC, Cis controls; CHT, = cross-sex hormonal treatment; DES, Dissociative Experience Scale; DDIS, Dissociative Disorders Interview Schedule; FtM, female-to-male subjects, trans men; GAF, Global Assessment of Functioning Scale; GCGS, gender confirmation genital surgery; GD, Gender dysphoria; GID, gender identity disorder; GIDAANT, gender identity disorder of adolescence and adulthood, non-transsexual type; GSI, Global Severity Index; HADS, Hospital Anxiety and Depression Scale; HAD-A, HAD-Anxiety subscale to HADS; HAD-D, HAD-Depression sub scale to HADS; HRadj, adjusted hazard ratio; MINI, Mini International Neuropsychiatric Interview; MMPI-2, Minnesota Multiphasic Personality Inventory, second version; MCMI-II, Millon Clinical Multiaxial Inventory, second version; MtF, male to female subjects, trans women; NR, not reported; RSE, Rosenberg Self-Esteem scale; SADS, Social Avoidance and Distress Scale; SCID-I and II, Structured Clinical Interview for DSM-IV, Axis I and II disorders; SCID-D, Structured Clinical Interview for DSM-IV-Dissociative Disorders; SCL-90R, Symptom Checklist-90 (revised); SES, Self-Esteem Scale; SF-36, Short Form 36-item Questionnaire; SSEI, Social Self -Esteem Inventory.

[a,b,c]Studies using the same data.

Description of studies

Cross-sectional studies

The 27 studies were all conducted in different transgender health-care services or gender identity clinic services, using data collected as part of the assessment (whether prospectively or retrospectively). The diagnosis was made according to DSM criteria (ranging from DSM-III-R to DSM-5) (American Psychiatric Association, 1987, 1994, 2000, 2013) and, in six studies, according to the ICD-10 (World Health Organization, 1992). Only three studies described psychiatric co-morbidity and/or psychopathology in patients exclusively without any form of treatment for gender dysphoria (Claes et al., 2015; Colizzi et al., 2015; Heylens et al., 2014a). The remainder of the studies included people at different stages of treatment, or the treatment status was unknown or not reported. Only five studies were multi-centred and, with the exception of one (Kim et al., 2006), participants were all recruited through transgender health-care services.

The studies concluded that the prevalence of psychiatric co-morbidity and psychopathology was high. However, only seven studies used a control group, and only four of them matched the cis controls with the trans population studied for factors known to affect psychopathology (such as age). Most studies used normative data to reach a conclusion as to whether the prevalence found was high or not. The most commonly used measurement to assess for psychiatric disorders was the Structured Clinical Interview for DSM (SCID) (First et al., 2002), and for psychopathology, the Symptom Checklist -90 (SCL-90) (Derogatis et al., 2010). For more details, please see Table 1.

Longitudinal studies

The 11 longitudinal studies evaluate changes in psychiatric disorders and/or psychopathology following gender-confirming medical interventions. Three studies assess the patients following cross-sex hormones, six following gender-confirming genital surgery, and two studies following both treatments. Six of the studies also provide cross-sectional data pretreatment compared with normative values. The information regarding follow-up time was recorded in all of the studies and ranged from six months (Udeze et al., 2008) to 13.3 years (Ruppin & Pfäfflin, 2015). Lost to follow-up ranged from 0% (Colizzi et al., 2013, 2014) to 49.3% (Ruppin & Pfäfflin, 2015). For more information about these studies, see Table 2.

Table 2. Follow up studies investigating outcome of psychiatric disorders and psychopathology post gender treatment in trans people.

Authors (year) Country	Number of trans participants/ diagnosis/ mean age at assessment	Treatment status: (on CHT or post GCGS)	Study design	Comparative groups	Length of follow-up post-treatment	Lost to follow-up	Outcome measure	Results
Slabbekoorn et al. (2001) Netherlands	47 FtM 54 MtF DSM-III-R 25.7 years FtM 32.9 years MtF	CHT 100% GCGS 0%	Single centre (Gender Clinic) Prospective	Pre- vs post-CHT	14 weeks post-CHT	0	AIM SAQ	Differences pre-/post-treatment: MtF: positive emotions increased after CHT FtM less intensity for both negative and positive emotions after CHT
Smith et al. (2001) Netherlands	13 FtM 7 MtF DSM-III-R 16.6 years	CHT 100% GCGS 100%	Single centre (Gender clinic) Prospective	Pre- vs post-GCGS Control: 21 patients who have been denied/ declined GCGS	1–4 years post-GCGS 1–7 years controls	17%	Dutch Short MMPI SCL-90	Differences pre-/post-treatment: Treated group no longer gender dysphoric, psychologically and socially functioning well. Neither group showed significant differences between pre- and post-GCGS on SCL-90
Smith et al. (2005) Netherlands	71 FtM 117MtF DSM-IV 29.6y FtM 38.6y MtF	CHT 100% GCGS 100%	Single centre (Gender clinic) Prospective	Pre- vs post-GCGS Normative	1–4 years post-GCGS	16%	UGDS Dutch Short MMPI SCL-90	Cross-sectional pretreatment: As normative data Differences pre-/post-treatment: Fewer psychological problems post-treatment. Gender dysphoria absence post-treatment Predictors: FtM psychological better outcome than MtF Heterosexual as per natal sex worse outcome
De Cuypere et al. (2006) Belgium	27 FtM 35 MtF Diagnosis: NR 26.9 years FtM 37.8 years MtF (pre-GCGS)	CHT 100% GCGS 100%	Single centre (Gender clinic) Retrospective	Pre- vs post-GCGS Normative	4.1 years MtF 7.6 years FtM	42%	UGDS SCL-90	Cross-sectional pretreatment: SCL-90 as normative data Differences pre-/post-treatment: Fewer psychological problems post-treatment. Gender dysphoria absence post-treatment. Suicide attempt drop from 29.3% to 5.1% Predictors: Younger when applying for GCGS and attractive better outcome.
Udeze et al. (2008) UK	40 MtF DSM-IV 47.3 years	CHT NR GCGS 100%	Single centre (Gender clinic) Prospective	Pre- vs post-GCGS	0.5 years post-GCGS	NR	SCL-90R Psychiatric clinical interview for ICD-10	Cross-sectional pre-treatment: no psychiatric diagnosis Differences pre-/post-treatment: No differences in SCL-90R scores Limitation: scores of SCL-90 low already at pretreatment
	14 FtM 18 MtF	CHT 88% GCGS 100%	Multicentre (2 gender clinics)	Pre- vs post-GCGS	9 years post-GCGS	30%	Psychiatric symptoms	Cross-sectional pretreatment: 30–50% insomnia, depression or

(continued)

Table 2. Continued

Authors (year) Country	Number of trans participants/ diagnosis/ mean age at assessment	Treatment status: (on CHT or post GCGS)	Study design	Comparative groups	Length of follow-up post-treatment	Lost to follow-up	Outcome measure	Results
Johansson et al. (2010) Sweden	ICD-10 27.8 years FtM 37.3 years MtF		Prospective				Global outcome patient and clinician	anxiety. 7.1% received ongoing psychiatric treatment. Differences pre-/post-treatment: Global clinician outcome: Improved 62% Unchanged 24%. Global patient outcome: Improved 95% Worse 5%. Gender: no differences Age of onset: no differences
Pimenoff & Pfäfflin (2011) Finland	17 FtM 15 MtF Diagnosis NR 37.5 years FtM 44.4 years MtF	CHT 100% GCGS 100%	Single centre (Gender clinic) Retrospective	Pre- vs post-GCGS	5 years post-GCGS	16.2%	University of Minnesota Questionnaire	Differences pre-/post-treatment: Psychological and social functioning improved significantly Gender: No differences except for vocational functioning which was better for FtM
Colizzi et al. (2013)* Italy	25 FtM 45 MtF DSM-IV-TR 26.7 years FtM 29.2 years MtF	CHT 100% GCGS 0%	Single centre (Gender clinic) Prospective	Pre- vs post-CHT	1 year post-CHT	0	PSS	Differences pre-/post-treatment: Perceived stress lower post-treatment and as per normative data
Colizzi et al. (2014)* Italy	29 FtM 78 MtF DSM-IV-TR 26.7 years FtM 29.2 years MtF	CHT 100% GCGS NR	Single centre (Gender clinic) Prospective	Pre- vs post-CHT Normative	1 year post-CHT	0	SCID-1 SAS SDS SCL-90R	Cross-sectional pre-treatment: SAS above normal range SDS and SCL-90R in normal range except anxiety subscale Differences pre-post treatment: SAS, SDS, SCL-90R scores lower post CHT
Heylens et al. (2014b) Belgium	11FtM 46 MtF DSM-IV-TR NR	CHT 100% GCGS 81%	Single centre (Gender clinic) Prospective	Pre- vs post-CHT (47) vs post-GCGS (42) Normative	3–6 months post-CHT 1–12 months post-GCGS	7.5–26.3%	SCL-90 Psychosocial questionnaire	Cross-sectional pretreatment: SCL-90 worse than normative data Differences pre-/post-treatment: Post treatment SCL-90 as normative data 95% better mood 93% happier 81% less anxious 79% more self confidence 98% better body relation Less drugs and alcohol abuse
Ruppin & Pfäfflin (2015) Germany	36 MtF 35 MtF ICD-10 14.1 years FtM 13.7 years MtF	CHT 100% GCGS 97.1%	Single centre (Gender clinic) Retrospective	Pre- vs post-treatment	13.3 years	49.3%	SCL-90R IIP FPI-R	Differences pre-/post-treatment: SCL-90R significantly better on all subscales post treatment particularly interpersonal sensitivity IIP significant lower values at follow-up

AIM, affect intensity measure; CHT, cross-sex hormonal treatment; FPI-R, Freiburg Personality Inventory; FtM, female to male subjects, trans men; GCGS, gender confirmation genital surgery; IIP, Inventory of Interpersonal Problems; MMPI-2, Minnesota Multiphasic Personality Inventory, second version; MtF, male to female subjects, trans women; NA, not applicable; NR, not reported; PSS, Perceived stress scale; SCID-I, Structured Clinical Interview for DSM-IV, Axis I disorders; SAS, Zung Self-Rating Anxiety Scale; SAQ, Short Anger Situation Questionnaire; SCL-90, Symptom Checklist-90; SCL-90R, Symptom Checklist-90 revised; SDS, Zung Self-Rating Depression Scale; UGDS, Utrecht Gender Dysphoria Scale.
*Studies using the same data.

Results

Cross-sectional studies

Psychopathology

Studies investigating prevalence rates of psychopathology range from rates that are comparable to the general population (Colizzi et al., 2014; Simon et al., 2011; Smith et al., 2005) to the trans group having worse scores than the cis controls (Auer et al., 2013; Davey et al., 2014; Heylens et al., 2014b). The prevalence and nature of psychopathology in trans women was found to be more comparable to cis women than to cis men, the former showing a two- to threefold higher occurrence of affective problems when compared with cis men (Auer et al., 2013).

Psychiatric disorders, Axis I

The Axis I diagnoses found in all the studies reviewed were mainly affective and anxiety disorders. The occurrence of severe psychiatric conditions, such as schizophrenia or bipolar disorder, was rare. Only one study looking at Axis I disorders compares a trans group with a cis control group matched for age, natal sex and new assigned sex (Dhejne et al., 2011). This study, which uses data from the national register in Sweden, focuses on trans people following gender-confirming medical interventions and found higher rates of psychiatric disorders and suicide in this group. It found, however, that there was an improvement over time, i.e. rates of psychiatric disorders and suicide became more similar to controls over time; for the period 1989–2003, there was no difference in the number of suicide attempts compared to controls.

Psychiatric disorders, Axis II

Only one study (Duisin et al., 2014) used a (non-matched) control group when assessing Axis II psychiatric disorders. This found higher rates of personality disorders in the trans group, primarily paranoid and avoidant personality disorders. The study is limited by the small number of patients studied. The rest of the studies that assessed Axis II disorders did not use control groups. The prevalence rates of Axis II disorders ranged from 4.3% (Fisher et al., 2013) to 81.4% (Mazaheri Meybodi et al., 2014b). The type of personality disorder varied from predominantly cluster B (Hepp et al., 2005; Madeddu et al., 2009; Mazaheri Meybodi et al., 2014b) to predominantly cluster C (Heylens et al., 2014a).

Risk factors for psychopathology and psychiatric disorders

The majority of the studies comparing trans women and trans men found no differences in psychiatric disorders and psychopathology between the two groups. Four studies did find psychiatric disorders and psychopathology to be more prevalent among trans women than trans men (Claes et al., 2015; Duisin et al., 2014; Gomez-Gil et al., 2009; Hoshiai et al., 2010). Conversely, Haraldsen & Dahl (2000) found that trans women scored lower on the SCL-90R test than trans men.

One study (Heylens et al., 2014a) found no differences between the age of onset and psychiatric disorders.

As found in the general psychiatric literature, two studies investigating psychopathology among trans people also found that being in a relationship was a positive factor, associated with a reduction of psychopathology (Gorin-Lazard et al., 2012; Weyers et al., 2009).

Longitudinal studies

An improvement of psychiatric morbidity and psychopathology following GCMI was seen in all of the studies except one (Udeze et al., 2008). This study found no differences between pre- and post-SCL-90R scores, which is probably due to the low levels of psychopathology as measured by the SCL-90R pretreatment. The majority of the studies found post-treatment scores on questionnaires measuring psychopathology and gender dysphoria to be similar to normative data.

Predictors for positive outcome following GCMI

Four longitudinal studies explored post-treatment outcome predictors and found better outcomes for trans men (Smith et al., 2005) and those who were young on assessment (De Cuypere et al., 2006). Two studies did not find gender or age of onset to be predictors of outcome following GCGS (Johansson et al., 2010; Pimenoff & Pfäfflin, 2011). Interestingly, one study compared patients who had been compliant with their treatment plan with those who had not, and found no differences in outcome (Pimenoff & Pfäfflin, 2011).

Discussion

The aim of this review was to explore the literature in the field of mental health/psychiatry and gender dysphoria. Overall, it was found that trans people attending transgender health-care services present with a high prevalence of psychiatric disorders and psychopathology.

The review indicates that the level of psychopathology appears to be higher in this population than in cis controls, although it cannot reach firm conclusions as to whether the rate of psychiatric disorders is higher in trans people than in controls, due to the lack of well-matched controlled studies exploring psychiatric disorders.

The only study using a robust methodology concludes that trans people present with higher levels of psychiatric disorders post-GCMI than cis controls. However, this study looks at trans people who were treated in some cases more than 20 years ago, when society and interventions may have been very different. Studies investigating the outcome of trans people who transitioned a long time ago will be very different from those looking at individuals who transitioned in the 21st century, and although this study offers longer follow-up data, these will be affected by changes in the levels of transphobia and discrimination over time. Furthermore, surgical results were less good at that time, which is also known to affect transgender health negatively (Bauer et al., 2015; Lawrence & Zucker, 2012).

The studies reviewed in this paper include trans people at different stages of transition within the same cohort, which is confusing, and does not allow for clear conclusions to be drawn as to the levels of psychopathology and psychiatric disorders in non-treated trans people. Only one study (Heylens et al., 2014a) provides clear information regarding the rates of psychiatric disorders pretreatment. It found that, at the time of assessment and before treatment was commenced, 38% of those attending transgender health-care services presented with an Axis I diagnosis, and 15% with an Axis II diagnosis.

As all of the studies use data collected at the time of assessment at a transgender health-care service, the results regarding levels of psychopathology and psychiatric disorders cannot be generalized to trans people not in contact with clinical services. In order to clarify whether there is a difference between these groups it may be interesting to look at studies exploring lifetime psychiatric disorders. Four studies provide this information (Bandini et al., 2011; Gomez-Gil et al., 2009; Hepp et al., 2005; Heylens et al., 2014a). Of particular importance is the study by Heylens et al. (2014a), which showed clear differences between current (38%) and lifetime (70%) levels of psychiatric disorders. This shows that the rate and severity of psychiatric disorders and psychopathology may be underrepresented if data is taken only from trans people at the time they are being assessed at transgender health services; the rate may be considerably higher in those who are not on a pathway towards treatment.

The majority of the psychiatric problems detailed in the studies relate to affective disorders such as depression and anxiety. Major psychiatric problems (e.g. schizophrenia and bipolar disorder) were not found any more frequently in trans people than in the general population. Dissociative disorders were only evaluated in one study (Colizzi et al., 2015).

The results with respect to gender differences in both pre- and post-treatment cross-sectional studies were contradictory. The majority of the studies showed no differences between the genders, but, except for one study (Haraldsen & Dahl, 2000) those studies that did identify differences found that trans women were more prone to develop psychological/psychiatric problems than trans men (Colton-Meier et al., 2013; De Cuypere et al., 1995; Landén et al., 1998; Lothstein, 1984). This finding could indicate that trans women show a psychological and vulnerability profile for the development of affective disorders that resembles that of natal women (Auer et al., 2013). Biologically, this could be explained by recent findings using neuro-imaging that reveal that non-treated trans women have cerebral cortical thickness similar to cis women (Zubiaurre-Elorza et al., 2012). However, the increased levels of psychiatric disorders in trans women could also be explained by the higher risk of stigma and discrimination within this group; this may contribute to the interpersonal problems that one study found made trans women more hypersensitive to rejection (Davey et al., 2015; Simon et al., 2011).

The fact that some studies that included trans people who had been treated with GCMI found higher levels of psychopathology and psychiatric disorders (Dhejne et al., 2011) than cis controls cannot be used as evidence for the efficacy (or otherwise) of GCMI. Studies that compared different cohorts of patients (pre CHT/GCGS versus post CHT/GCGS) are only helpful in this regard when they are well controlled for psychopathology and for known factors affecting psychopathology, between both groups (Gomez-Gil et al., 2012; Gorin-Lazard et al., 2013; Fisher et al., 2014).

The effect that gender-confirming medical interventions have in improving mental health can only be concluded from longitudinal studies. This review found that longitudinal studies investigating the same cohort of trans people pre- and post-interventions showed an overall improvement in psychopathology and psychiatric disorders post-treatment. In fact, the findings from most studies showed that the scores of trans people following GCMI were similar to those of the general population. Although this is likely to be a response to the gender-confirming treatment itself, i.e. the sense of

the body being more aligned to the person's experienced gender, it cannot be ruled out that it relates instead or as well to the benefits that accrue from being validated and accepted for treatment (Nuttbrock et al., 2011). In order to help clarify this it is important to look at follow-up studies that assess trans people a relatively long time after treatment. Five studies (De Cuypere et al., 2006; Johansson et al., 2010; Pimenoff & Pfäfflin, 2011; Ruppin & Pfäfflin, 2015; Smith et al., 2001) that followed trans people for more than 2 years (maximum 13.3 years) post-treatment showed encouraging results that point towards the benefits of treating trans people with GCMI.

Although it was not the main aim of this review, we also explored risk factors for psychiatric disorders among the trans population. Victimization (social stigma, discrimination, transphobia, sexual abuse, gender abuse), difficulties accessing health care and social services, gender (as explained above) and interpersonal problems were all found to put trans people at risk of developing psychiatric disorders, particularly depression. Trans individuals were also found to receive, or perceived themselves to receive, less social support from their family and friends than non-trans siblings and matched general population (Davey et al., 2014; Factor & Rothblum, 2007; Gooren et al., 2015; Kim et al., 2006; Simon et al., 2011). Social and parental support, completed medical transition, and disclosure of transgender identity were all protective factors (Bandini et al., 2011; Bauer et al., 2015; Bazargan & Galvan, 2012; Bockting et al., 2013; Clements-Nolle et al., 2006; Davey et al., 2015; Gehring & Knudson, 2005; Gooren et al., 2015; Lombardi et al., 2001; Nuttbrock et al., 2011, 2014; Rotondi, 2011).

Quality of the studies

Almost all of the studies reviewed showed selection bias. Since most included only individuals attending transgender health-care services, the results are not generalizable to the overall trans population. Many studies are also limited by the inclusion of trans people at different stages of treatment. Longitudinal studies are also limited by lost-to-follow-up data and short follow-up time; only registry-based studies do not have lost-to-follow-up data, but their cross-sectional design fails to measure improvement of psychopathology within the same individual following GCMI. Furthermore, they are limited by the lack of matching according to known risk factors for psychiatric disorders and psychopathology within the general population (Dhejne et al., 2011).

Implications for future research

Although the studies measuring the prevalence of psychiatric disorders in trans people attending clinical services are robust and reach firm conclusions, future studies could explore the rates among those trans people not attending clinical services. Future studies could also benefit from more detailed and better controlled longitudinal studies. Due to the low prevalence of trans individuals attending clinical services (Arcelus et al., 2015), larger cohort multicentre studies such as the European Network Initiative of Gender Incongruence (ENIGI) project (Kreukels et al., 2012) may strengthen recruitment rates. Studies such as this may be limited by several factors including the variability of the interventions provided and the levels of discrimination and transphobia in different countries.

Although psychiatric morbidity should be studied as a secondary outcome of gender-confirming medical interventions, studies should primarily explore the role of those interventions in reducing gender dysphoria. A robust measure is needed to relate the primary outcome for GCMI to gender dysphoria. The variability of tools to measure gender and body dysphoria does not allow firm conclusions to be drawn, and this suggests the need for a stronger measurement tool.

In summary, this review indicates that, although the levels of psychopathology and psychiatric disorders of trans people attending transgender health-care services are higher than the cis population at the time of assessment, they do improve following gender-confirming medical intervention, in many cases reaching normative values. Information on trans people not in contact with services is lacking. While gender-confirming medical intervention improves mental health, trans people are still a vulnerable group.

Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

References

American Psychiatric Association. (1987). *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed. rev.). Washington, DC: APA.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). Washington, DC: APA.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.). Washington, DC: APA.

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: APA.

Arcelus, J., Bouman, W.P., Van De Noortgate, W., Claes, L., Witcomb, G.L., & Fernandez-Aranda, F. (2015). Systematic review and meta-analysis of prevalence studies in transsexualism. *European Psychiatry 30*(6), 807–815.

Auer, M.K., Höhne, N., Bazzara-Castro, M.A., Pfister, H., Fuss, J., Stalla, G.K, ... Ising, M. (2013). Psychopathological profiles in transsexuals and the challenge of their special status among the sexes. *PLoS One, 8*(10), e78469.

Bandini, E., Fisher, AD., Ricca, J., Meriggiola, M.C., Jannini, E.A., Manieri, C.,... Maggi, M. (2011). Childhood maltreatment in subjects with male-to-female gender identity disorder. *International Journal of Impotence research, 23*, 276–285.

Bauer, G.R., Scheim, A.I., Pyne, J., Travers, R., & Hammond, R. (2015). Intervenable factors associated with suicide risk in transgender persons: A respondent driven sampling study in Ontario, Canada. *BMC Public Health, 15*, 525.

Bazargan, M., & Galvan, F. (2012). Perceived discrimination and depression among low-income Latina male-to-female transgender women. *BMC Public Health, 12*, 663–671.

Bockting, W.O., Miner, M.H., Swinburne Romine, R.E., Hamiltion, A., & Coleman E. (2013). Stigma, mental health, and resilience in an online sample of the US transgender population. *American Journal of Public Health, 5*, 943–995.

Clements-Nolle, K., Marx, R., & Katz, M. (2006). Attempted suicide among transgender persons: The influence of gender –based discrimination and victimization. *Journal of Homosexuality, 3*, 53–69.

Coleman, E., Bockting, W., Botzer, M., Cohen-Kettenis, P., DeCuypere, G., Feldman, J., ... Zucker, K. (2012). Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *International Journal of Transgenderism, 13*, 165–232.

Colizzi, M., Costa, R., Pace, V., & Todarello, O. (2013). Hormonal treatment reduces psychobiological distress in gender identity disorder, independently of the attachment style. *Journal of Sexual Medicine, 10*(12), 3049–3058.

Colizzi, M., Costa, R., & Todarello, O. (2014). Transsexual patients' psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental health: Results from a longitudinal study. *Psychoneuroendocrinology, 39*, 65–73.

Colizzi, M., Costa, R., & Todarello, O. (2015). Dissociative symptoms in individuals with gender dysphoria: Is the elevated prevalence real? *Psychiatry Research, 226*, 173–180.

Colton Meier, S., Pardo, S.T., & Labuski, C. (2013). Measures of clinical health among female-to-male transgender persons as a function of sexual orientation. *Archives of Sexual Behavior, 42*, 463–474.

Claes, L., Bouman, W.P., Witcomb, G., Thurston, M., & Arcelus, J. (2015). Non-suicidal self-injury in transsexualism: Associations with psychological symptoms, victimization, interpersonal functioning and perceived social support. *Journal of Sexual Medicine, 12*(1), 168–179.

Davey, A., Bouman, W.P., Meyer, C., & Arcelus, J. (2015). Interpersonal functioning among individuals with gender dysphoria. *Journal of Clinical Psychology*, 71(12), 1173–1185.

Davey, A., Bouman, W.P., Arcelus, J., & Meyer, C. (2014). Social support and psychological well-being in gender dysphoria: A comparison of patients with matched controls. *Journal of Sexual Medicine, 11*, 2976–2985.

De Cuypere, G., Jannes, C., & Rubens, R. (1995). Psychosocial functioning of transsexuals in Belgium. *Acta Psychiatrica Scandinavica, 91*, 180–184.

De Cuypere, G., Elaut, E., Heylens, G., Van Maele, G., Selvaggi, G., T'Sjoen, G., ... Monstrey, S. (2006). Long-term follow up: Psychosocial outcome of Belgian transsexuals after sex reassignment surgery. *Sexologies, 15*, 126–133.

Derogatis, L.R., & Unger, R. (2010). Symptom Checklist-90-Revised. In Weiner, I.B. & Craighead, W.E. (Eds). *Corsini Encyclopedia of Psychology*,. 4th edition. Hoboken, NJ: John Wiley & Sons.

Dhejne, C., Lichtenstein, P., Boman, M., Johansson, A.L., Langstrom, N., & Landen, M. (2011). Long-term follow-up of transsexual persons undergoing sex reassignment surgery: Cohort study in Sweden. *PLoS One, 6*, e16885.

Drescher, J., Cohen-Kettenis, P., & Winter, S. (2012). Minding the body: Situating gender identity diagnoses in the ICD-11. *International Review of Psychiatry, 24*(6), 568–577.

Duisin, D., Batinic, B., Barisic, J., Djordjevic, M.L., Vujovic, S., & Bizic, M. (2014). Personality disorders in persons with gender identity disorder. *The Scientific World Journal*, 809058.

Factor, R.J., & Rothblum, E.D. (2007). A study of transgender adults and their non-transgender siblings on demographic characteristics, social support, and experience of violence. *Journal of LGBT Health Research, 3*, 11–30.

First, M.B., Spitzer, R.L., Gibbon M., and Williams, J.B.W. (2002). *Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition. (SCID-I/P)*,. New York: Biometrics Research, New York State Psychiatric Institute.

Fisher, A.D., Bandini, E., Casale, H., Ferrucio, N., Meriggiola, M.C., Gualerzi, A., ... Maggi, M. (2013). Sociodemographic and clinical features of gender identity disorder: An Italian multicentric evaluation. *Journal of Sexual Medicine, 10*, 408–419.

Fisher, A.D., Castellini, G., Bandini, E., Casale, H., Fanni, E., Benni, L., ... Rellini, A.H. (2014). Cross-sex hormonal treatment and body uneasiness in individuals with gender dysphoria. *Journal of Sexual Medicine, 11*, 709–719.

Gehring, D., & Knudson, G. (2005). Prevalence of childhood trauma in a clinical population of transsexual people. *International Journal of Transgenderism, 8*, 23–30.

Gomez-Gil, E., Trilla, A., Salamero, M., Godas, T., & Valdes, M. (2009). Sociodemographic, clinical, and psychiatric characteristics of transsexuals from Spain. *Archives of Sexual Behavior, 38*, 378–392.

Gomez-Gil, E., Vidal-Hagemeijer, A., & Salamero, M. (2008). MMPI-2 characteristics of transsexuals requesting sex reassignment: Comparison of patients in prehormonal and presurgical phases. *Journal of Personality Assessment, 90*, 368–374.

Gómez-Gil, E., Zubiaurre-Elorza, L., Esteva, I., Guillamon, A., Godás, T., Cruz Almaraz, M., ... Salamero M. (2012). Hormone-treated transsexuals report less social distress, anxiety and depression. *Psychoneuroendocrinology, 37*, 662–670.

Gooren, L.j., Sunkaew, T., Giltay, E.J., & Guadamuz, T.E. (2015). Cross-sex hormone use functional health and

mental-being among transgender men (Toms) and Transgender women (Kathoeys) in Thailand. *Culture, Health & Sexuality, 1*, 92–103.

Gorin-Lazard, A., Baumstarck, K., Boyer, L., Maquigneau, A., Gebleux, S., Penochet, J.C., ... Bonierbale, M. (2012). Is hormonal therapy associated with better quality of life in transsexuals? A cross sectional study. *Journal of Sexual Medicine, 9*, 531–541.

Gorin-Lazard, A., Baumstarck, K., Boyer, L., Maquigneau, A., Penochet, J.C. Pringuey, D., ... Auquier, P. (2013). Hormonal therapy is associated with better self-esteem, mood and quality of life in transsexuals. *Journal of Nervous and Mental Disease, 201*, 996–1000.

Haraldsen, I.R., & Dahl, A.A. (2000). Symptom profiles of gender dysphoric patients of transsexual type compared to patients with personality disorders and healthy adults. *Acta Psychiatrica Scandinavica, 102*, 276–281.

Hepp, U., Kraemer, B., Schnyder, U., Miller, N., & Delsignore, A. (2005). Psychiatric comorbidity in gender identity disorder. *Journal of Psychosomatic Research, 58*, 259–261.

Heylens, G., Elaut, E., Kreukels, B.P., Paap, M.C., Cerwenka, S., Richter-Appelt, H., ... De Cuypere, G. (2014a). Psychiatric characteristics in transsexual individuals: Multicenter study in four European countries. *British Journal of Psychiatry, 204*, 151–156.

Heylens G., Verroken C., De Cock S., T'sjoen G., & De Cuypere G. (2014b). Effects of different steps in gender reassignment therapy on psychopathology: A prospective study of persons with a gender identity disorder. *Journal of Sexual Medicine, 11*, 119–126.

Hoshiai, M., Matsumoto, Y., Sato, T., Ohnishi, M., Okabe, N., Kishimoto, Y., ... Kuroda, S. (2010). Psychosomatic comorbidity among patients with gender identity disorder. *Psychiatry Clinical Neurosciences, 64*, 514–519.

Johansson, A., Sundbom, E., Hojerback, T., & Bodlund, O. (2010). A five-year follow-up study of Swedish adults with gender identity disorder. *Archives of Sexual Behavior, 39*, 1429–1437.

Judge, C., O'Donovan, C., Callaghan, G., Gaoatswe, G., O'Shea, D. (2014). Gender dysphoria – prevalence and co-morbidities in an irish adult population. *Frontiers in Endocrinology, 5*, 87.

Kersting A., Reutemann, M., Gast, U., Ohrmann, P., Suslow, T., Michael, N., & Arolot, V. (2003). Dissociative disorders and traumatic childhood experiences in transsexuals. *Journal of Nervous and Mental Disease, 191*, 182–189.

Kim, T.S., Cheon, Y.H., Pae C.U., Kim, J.J., Lee, C.U., Lee, S.J., ... Lee, C. (2006). Psychological burdens are associated with young male transsexuals in Korea. *Psychiatry and Clinical Neurosciences, 60*, 417–421.

Kreukels, B.P., Haraldsen, I.R., De Cuypere, G., Richter-Appelt, H., Gijs, L., & Cohen-Kettenis, P.T. (2012). A European network for the investigation of gender incongruence: The ENIGI initiative. *European Psychiatry, 27*, 445–450.

Landén, M., Wålinder, J. & Lundstrom, B. (1998). Clinical characteristics of a total cohort of female and male applicants for sex reassignment: A descriptive study. *Acta Psychiatrica Scandinavica, 97*, 189–194.

Lawrence, A. & Zucker, K. (2012) Gender identity disorders. In M. Hersen & D. Beidel (Eds.), *Adult psychopathology and diagnosis*, (6th ed., pp. 601–635). London: Wiley.

Lev, A.I. (2009). The ten tasks of the mental health provider: Recommendations for revision of the world professional association for transgender health's standards of care. *International Journal of Transgenderism, 11*, 74–99.

Lothstein, L.M. (1984). Psychological testing with transsexuals: A 30-year review. *Journal Personality Assessment, 48*, 500–507.

Madeddu, F., Prunas, A., & Hartmann, D. (2009). Prevalence of Axis II Disorders in a sample of clients undertaking psychiatric evaluation for sex reassignment surgery. *Psychiatric Quarterly, 80*, 261–267.

Mazaheri Meybodi, A., Hajebi, A., & Ghanbari Jolfaie, A. (2014a). Psychiatric Axis I Comorbidities among patients with gender dysphoria. *Psychiatry Journal*, 971814.

Mazaheri Meybodi, A., Hajebi, A., & Ghanbari Jolfaie, A. (2014b). The frequency of personality disorders in patients with gender identity disorder. *Medical Journal of the Islamic Republic of Iran, 28*, 90.

Meyer-Bahlburg, H.F. (2010). From mental disorder to iatrogenic hypogonadism: Dilemmas in conceptualizing gender identity variants as psychiatric conditions. *Archive of Sexual Behavior, 39*, 461–476.

Miach, P.P., Berah, E.F., Butcher, J.N., & Rouse, S. (2000). Utility of the MMPI-2 in assessing gender dysphoric patients. *Journal of Personality Assessment, 75*, 268–279.

Nuttbrock, L., Bockting, W., Rosenblum, A., Hwahng, S., Manson, M., Macri, M., & Becker, J. (2014). Gender abuse, depressive symptoms and substance use among transgender women: A 3-year prospective study. *American Journal of Public Health, 11*, 2199–2266.

Nuttbrock, L., Bockting, W., Rosenblum, A., Manson, M., Macri, M., & Becker, J. (2011). Gender identity conflict/ affirmation and major depression across the life course of transgender women. *International Journal of Transgenderism, 13*, 91–1034.

Pimenoff, V., & Pfäfflin, F. (2011). Transsexualism: Treatment outcome of compliant and noncompliant patients. *International Journal of Transgenderism, 13*, 37–44.

Richards, C., Arcelus, J., Barrett, J., Bouman, WP., Lenihan, P,, Lorimer, S., Murjan, S., & Seal, L. (2015). Trans is not a disorder – but should still receive funding. *Sexual and Relationship Therapy, 30*, 309–313.

Rotondi, N.K. (2011). Depression in trans people: A review of the risk factors. *International Journal of Transgenderism, 13*, 104–116.

Ruppin, U., & Pfafflin, F. (2015). Long-Term Follow-Up of Adults with Gender Identity Disorder. *Archive of Sexual Behavior*. 1321–1329.

Selvaggi, G., & Giordiano, S. (2014). The role of mental health professionals in gender reassignment surgeries: Unjust discrimination or responsible care? *Aesthtetic Plastic Surgery, 38*, 1177–1183.

Simon, L., Zsolt, U., Fogd, D., & Czobor P. (2011). Dysfunctional core beliefs, perceived parenting and psychopathology in gender identity disorder: A comparison of male-to-female, female-to-male transsexual and nontranssexual control subject. *Journal of Behavior Therapy and Experimental Psychiatry, 5*, 38–45.

Slabbekoorn, D., Goozen, S.H.V., Gooren, L.J., & Cohen-Kettenis, P.T. (2001). Effects of cross-sex hormone treatment on emotionality in transsexuals. *International Journal of Transgenderism, 5*(3), 2–18.

Smith, Y.L., van Goosen, S.H., & Cohen-Kettenis, P.T. (2001). Adolescents with gender identity disorder who were accepted or rejected for sex reassignment surgery: A prospective follow-up study. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*, 472–481.

Smith, Y.L., van Goosen, S.H., Kuiper, A.J., & Cohen-Kettenis, P.T. (2005). Transsexual subtypes: Clinical and theoretical significance. *Psychiatry Research, 137*, 151–160.

Udeze, B., Abdelmawla, N., Khoosal, D., & Terry, T. (2008). Psychological functions in male-to-female transsexual people before and after surgery. *Sexual and Relationship Therapy, 23*, 141–145.

Weyers, S., Elaut, E., De Sutter, P., Gerris, J., T'Sjoen, G., Heylens, G., ... Verstraelen, H. (2009). Long-term assessment of the physical, mental, and sexual health among transsexual women. *Journal of Sexual Medicine, 6*(3), 752–760

World Health Organization. (1992). *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death, Tenth Revision*, Geneva: Author.

Zubiaurre-Elorza, L., Junque, C., Gomez-Gil, E., Segovia, S., Carrillo, B., Rametti, G., & Guillamon, A. (2013). Cortical thickness in untreated transsexuals. *Cerebral Cortex, 23*, 2855–2862.

LGBT Health
Volume 3, Number 2, 2016

DOI: 10.1089/lgbt.2015.0058

Mental Health and Medical Health Disparities in 5135 Transgender Veterans Receiving Healthcare in the Veterans Health Administration: A Case–Control Study

George R. Brown, MD,[1,2] and Kenneth T. Jones, PhD[3]

Abstract

Purpose: There are no large controlled studies of health disparities in transgender (TG) or gender dysphoric patients. The Veterans Health Administration (VHA) is the largest healthcare system in the United States and was an early adopter of electronic health records. We sought to determine whether medical and/or mental health disparities exist in VHA for clinically diagnosed TG veterans compared to matched veterans without a clinical diagnosis consistent with TG status.
Methods: Using four ICD-9-CM codes consistent with TG identification, a cohort of 5135 TG veterans treated in VHA between 1996 and 2013 was identified. Veterans without one of these diagnoses were matched 1:3 in a case–control design to determine if medical and/or mental health disparities exist in the TG veteran population.
Results: In 2013, the prevalence of TG veterans with a qualifying clinical diagnosis was 58/100,000 patients. Statistically significant disparities were present in the TG cohort for all 10 mental health conditions examined, including depression, suicidality, serious mental illnesses, and post-traumatic stress disorder. TG Veterans were more likely to have been homeless, to have reported sexual trauma while on active duty, and to have been incarcerated. Significant disparities in the prevalence of medical diagnoses for TG veterans were also detected for 16/17 diagnoses examined, with HIV disease representing the largest disparity between groups.
Conclusion: This is the first study to examine a large cohort of clinically diagnosed TG patients for psychiatric and medical health outcome disparities using longitudinal, retrospective medical chart data with a matched control group. TG veterans were found to have global disparities in psychiatric and medical diagnoses compared to matched non-TG veterans. These findings have significant implications for policy, healthcare screening, and service delivery in VHA and potentially other healthcare systems.

Key words: disparity, gender dysphoria, military, transgender, veteran.

Introduction

TRANSGENDER (TG) PERSONS HAVE a long history of serving their country in the Armed Forces of the United States.[1] Reports of birth sex female enlistees serving as male combatants or as medics in the American Civil War are well substantiated.[2] However, little has been published on TG persons who have served in the modern armed forces[3,4] and who enroll for care in the Veterans Health Administration (VHA). Brown[1] first reported on a small series of veterans and active duty service members who were treated for gender identity disorder (GID). Since 1988, the largest descriptive study of demographics and psychiatric comorbidities in TG veterans was limited to 70 veterans.[5]

Research about TG persons and their healthcare concerns or outcomes in the United States has been limited to sources outside of healthcare systems, including Internet-based surveys,[6] convenience samples,[7] or small studies utilizing focus group methodologies.[8] Larger scale studies of TG persons' health have been limited to European countries with centralized gender clinics and a single-payer model of health insurance, enabling capture of national data.[9–11] These uncontrolled descriptive studies suggest high rates of mental illnesses, including substance use disorders. The largest retrospective study

[1]Psychiatry Service, Mountain Home Veterans Affairs Medical Center, Johnson City, Tennessee.
[2]Department of Psychiatry and Behavioral Sciences, Quillen College of Medicine, East Tennessee State University, Johnson City, Tennessee.
[3]Office of Health Equity, Veterans Health Administration, Washington, District of Columbia.

completed on disparities in veterans with GID or GID not otherwise specified (NOS) was that of Blosnich et al.[12] Although no matched control group was utilized, the findings suggested that the rate of suicide-related events among GID/GID NOS-diagnosed veterans was 20 times higher than for the general VHA population.

It should be noted that the diagnoses of GID and GID NOS have been replaced in DSM-5 with gender dysphoria and other specified/unspecified gender dysphoria. Medical illnesses, such as HIV disease and tobacco-related illnesses, have also been shown to disproportionately affect TG persons in the general population.[13] In addition to suicide and an earlier age at death in TG veterans compared to controls, there are also disparities in the ranking of other causes of death for TG veterans compared to the general population, with deaths due to infection and the digestive system ranking higher.[14]

The Obama administration has made improving healthcare access for the LGBT community a top national priority in the United States.[15] VHA has undertaken several initiatives to address the healthcare needs of TG veterans. The substantial clinical and educational efforts undertaken by VHA to address the healthcare needs of TG veterans are detailed elsewhere.[16] VHA Directives published in 2011[17] and 2013[18] reversed prior prohibitions against providing many TG health services and instructed all VHA facilities to provide nearly a full range of TG healthcare services to intersex and TG veterans. In the absence of systematic gender identity data collection for veterans or for those serving in the armed forces, it remains unknown how many veterans would self-identify as TG and take advantage of this access to care.

As part of a comprehensive research program undertaken by the Office of Health Equity in VHA to assess health disparities among TG veterans, we examined existing VHA data to estimate the size of the population enrolled in VHA who are entitled to these new services and the prevalence of psychiatric and medical conditions to determine if health and health outcome disparities exist in this population. Furthermore, we addressed the prevalence of these conditions in this TG group compared to matched veterans without a clinical diagnosis associated with TG status as defined below.

Methods

Participants

VHA provides services to millions of veterans each year at over 1700 facilities divided into 21 geographic regions (Veterans Integrated Service Networks [VISNs]) across the United States and its territories. We identified all veterans meeting the study's definition of TG between 1996 and 2013 from the National Patient Care Database (NPCD) by VHA. The NPCD is the central database by VHA for health data. Facilities also track invoices for non-VHA care provided to veterans for services unavailable at local facilities and these extracts are available in the electronic health record (EHR). A TG veteran was defined as any patient with at least one instance of any of the following: International Classification of Diseases, Ninth Revision, Clinical Modification codes (ICD-9-CM)[19] listed in the EHR: 302.3 (transvestic fetishism [TF]), 302.5x (transsexualism), 302.6 (GID NOS), or 302.85 (GID in adolescents or adults).

The current diagnoses of gender dysphoria and other specified/unspecified gender dysphoria were not in use for the entire study period in VHA. We are limited to the four diagnoses listed above, and these determine the group "transgender veterans" even though we are aware of the categorical limitations imposed. Three non-TG controls having encounters during the study period were randomly matched to a single TG case based on gender, race, birth year, and the VISN, where most of the patient's encounters occurred.

Procedure

We merged patient encounter data with sociodemographic data from various sources using patient identifiers for cases and controls. Demographics, service characteristics, and enrollment data were supplemented with data from the Corporate Data Warehouse, the Health Eligibility Center Enrollment Files, and the Vital Status Files by VHA, which contain information regarding veteran status, date of birth, date of death, and gender from multiple sources, including Medicare records and the Social Security Administration. Data from the VHA Planning System Support Group were used to classify patient's residential area as urban or rural. Details on these data sources are described elsewhere.[20–25] The study protocol was approved by the East Tennessee State University/Mountain Home VA Institutional Review Board, and all applicable regulations regarding the protection of health information were followed.

Measures

VHA does not currently collect gender identity data on veterans. VHA does record patient "gender," which is currently used interchangeably with "sex," and policies exist that allow patients to update their gender (e.g., in the case of sexual reassignment surgeries). As such, accurately determining birth sex in patient records was not possible. Determining the number of patients who have had sex reassignment surgery, for example, is not possible, as these procedures are not part of the benefits provided, or paid for, by VHA. Therefore, designation of patients as "male" or "female" is based on the recording of "sex" during the enrollment process to enter the VHA system of healthcare or based on changes to this "sex" marker by patients who present appropriate documentation (which does not require sex reassignment surgery) to have this marker changed.

Recording of race and ethnicity data is optional during enrollment. As such, race was assigned as found in the EHR. Patients who had Hispanic listed as either their race or ethnicity, regardless of any other listed race, were classified as Hispanic. Patients who only had American Indian, Asian, Black, Native Hawaiian, or White listed were classified as that race. Patients with more than one race were classified as having "multiple races." Patients who did not have ethnicity or race designated were classified as unknown/missing. American Indian, Asian, Native Hawaiian, or multiple races were grouped together for the purposes of matching. Current marital status was dichotomized and based on information in the EHR. Patients who had more than one status or whose last entry was divorced, separated, or single were listed as not currently married.

A patient was determined to have religious or spiritual involvement if the EHR contained a nonmissing entry other than atheist. The last recorded enrollment priority group was assessed. The following military service eras were examined: World War II, Korean Conflict, Vietnam

era, and Gulf War (all who served between August 2, 1990 and present). Finally, a flag for deceased was created for patients who had a date of death listed.

Several structural issues known to be associated with health disparities were assessed.[26–30] Rural patients had a zip code corresponding to a rural area. An indicator variable was created for additional insurance besides VHA. Veterans with a history of homelessness were those who had an ICD-9-CM diagnosis of V60.0 (lack of housing) or received services designated for homeless patients. Veterans with a history of incarceration were those who had received services for incarcerated, or justice-involved, veterans. While income and education level are not collected universally for enrollees, some veteran's priority groups are indicative of low income.

Indicator variables were created to determine whether a patient had a service-connected disability (SCD), was a combat veteran, or had reported military sexual trauma (MST). A listing of all ICD-9-CM codes used to define illnesses included in these analyses is available in Supplementary Appendix A (Supplementary Data is available online at www.liebertpub.com/lgbt). Patients were classified as having the condition if the relevant diagnostic code was present in the EHR at least once.

Data analysis

Annual incidence and prevalence estimates of TG veterans were calculated similar to the approach of Blosnich et al.[12] However, the "risk-pool" of veterans only included living veterans. In other words, TG veterans were analyzed for years up until their death. Mantel–Haenszel chi-square tests were used to compare differences in cases and controls. Conditional odds ratios (OR) were used to assess whether TG status is associated with social determinants, service-related characteristics, and various psychiatric and medical diagnoses (see Supplementary Appendix A for a list of diagnostic

TABLE 1. GENDER IDENTITY-RELATED DIAGNOSES FOR TRANSGENDER VETERANS ($N=5135$) SEEKING VETERANS HEALTH ADMINISTRATION CARE, FY13 AND EARLIER

ICD-9 diagnostic code	n	%
1 DX		
Transvestic fetishism (302.3)	247	4.81
Transsexualism (302.5x)	722	14.06
Gender identity disorder NOS (302.6)	505	9.83
Gender identity disorder (302.85)	1501	29.23
2 DX		
302.3 and 302.5x	17	0.33
302.3 and 302.6	17	0.33
302.3 and 302.85	68	1.32
302.5x and 302.6	104	2.03
302.5x and 302.85	559	10.89
302.6 and 302.85	643	12.52
3 DX		
302.3, 302.5x and 302.6	5	0.10
302.3, 302.5x and 302.85	30	0.58
302.3, 302.6 and 302.85	44	0.86
302.5x, 302.6 and 302.85	637	12.41
All 4	36	0.70

DX, diagnosis; FY, fiscal year (October 1–September 30); NOS, not otherwise specified.

TABLE 2. CASE–CONTROL CHARACTERISTICS OF TRANSGENDER AND NONTRANSGENDER VETERANS SEEKING VETERANS HEALTH ADMINISTRATION CARE, 1996–2013

	Transgender ($N=5135$)	*Nontransgender* ($N=15,405$)	
Characteristic	n	n	%
Gender			
Female	1578	4734	30.73
Male	3557	10,671	69.27
Race			
Hispanic/Latino	184	552	3.58
Non-Hispanic American Indian only[a]	42	167	1.02
Non-Hispanic Asian only[a]	25	169	0.94
Non-Hispanic Black only	387	1161	7.54
Non-Hispanic Native Hawaiian only[a]	23	116	0.68
Non-Hispanic White only	4120	12,360	80.23
Multiple races[a]	131	211	1.67
Missing	223	669	4.34
Birth year			
1913–1922	55	165	1.07
1923–1932	126	378	2.45
1933–1942	391	1173	7.61
1943–1952	1733	5199	33.75
1953–1962	1419	4257	27.63
1963–1972	672	2016	13.09
1973–1982	442	1326	8.61
1983 or later	297	891	5.78
VISN			
1	351	1053	6.84
2	142	426	2.77
3	82	246	1.60
4	150	450	2.92
5	80	240	1.56
6	174	522	3.39
7	130	390	2.53
8	348	1044	6.78
9	207	621	4.03
10	202	606	3.93
11	222	666	4.32
12	244	732	4.75
15	167	501	3.25
16	311	933	6.06
17	184	552	3.58
18	355	1065	6.91
19	240	720	4.67
20	495	1485	9.64
21	383	1149	7.46
22	384	1152	7.48
23	284	852	5.53

Female/Male: accurate determination of birth sex is not possible, as gender identity data are not collected and "sex" can be changed in VHA records by submitting an application and supporting documentation from a physician.

[a]Non-Hispanic veterans identifying with the following racial/ethnic groups were classified together for the purposes of matching: American Indian, Asian, Native Hawaiian, or multiple races. These veterans together represented 4% of the entire sample.

VHA, Veterans Health Administration; VISN, Veterans Integrated Service Network.

codes). A 95% confidence interval (CI) is reported for each OR. Models were adjusted to control for significant demographic differences at $P < 0.05$. For these models, marital status and religious affiliation were entered as dichotomous variables.

Priority group was entered as a four-level variable corresponding to the following levels: 50% or more SCD, catastrophically disabled, very low income, and all other levels combined (<50% SCD, copay required for services, other military-related disability, not prioritized, or unknown) as the reference group. Variance inflation factors and tolerance diagnostics were conducted to assess multicollinearity. Only the main effect of TG identity status is reported and discussed in the models. All data were analyzed using SAS Enterprise Guide 5.1 (Cary, NC). We conducted all disparity analyses with and without the inclusion of the TF diagnosed patients, as it is possible that some patients diagnosed only with TF and not with an additional diagnosis consistent with gender dysphoria/GID may not identify as TG.

Results

Between 1996 and 2013, 5135 veterans had ≥1 of the four diagnostic codes and were matched 1:3 to veterans without these codes ($N = 15,405$). Ninety-five percent of TG veterans received a diagnosis of transsexualism or GID (Table 1). The prevalence of TG veterans as of September 30, 2013 was 58/100,000 patients.

The average age of the sample was 55.8 years (SD = 13.5). The majority was classified as male (70%) and non-Hispanic white only (80%). Eight percent identified as black only and 4% as Hispanic or Latino. Five percent had missing race and ethnicity data (Table 2).

Demographics

TG and non-TG veterans differed significantly ($P < 0.0001$) on the basis of marital status, religious affiliation, and enrollment priority group (Table 3). A total of 22.5% of TG veterans were married compared to 46% of non-TG veterans.TG veterans were more likely than controls to have a priority group indicating a ≥50% SCD (level 1: 29% vs. 22%) and a catastrophic disability (level 4: 8% vs. 2.91%).

Social determinants of health

Very low income is identified by a means test and was more likely the case in the TG group compared to controls

TABLE 3. DEMOGRAPHIC DIFFERENCES FOR VETERANS SEEKING VETERANS HEALTH ADMINISTRATION CARE, 1996–2013

	Transgender (N = *5135*)		*Nontransgender* (N = *15,405*)		
Characteristic	n	%	n	%	χ^2
Marital status					176.83*
Married	1156	22.51	7099	46.08	
Widowed	230	4.48	695	4.51	
Previously married	2314	45.06	4340	28.17	
Single, never married	1413	27.52	2595	16.85	
Unknown/missing	22	0.43	676	4.39	
Religious or spiritual affiliation	3742	72.87	11,458	74.38	4.54**
Enrollment priority group					350.22*
1	1512	29.44	3384	21.97	
2	327	6.37	1225	7.95	
3	544	10.59	1794	11.65	
4	411	8.00	448	2.91	
5	1692	32.95	3865	25.09	
6	110	2.14	781	5.07	
7	88	1.71	299	1.94	
8	414	8.06	2280	14.80	
Not prioritized	36	0.70	1311	8.51	
Missing	1	0.02	18	0.12	
Wartime period served					3.54***
World War II	96	1.87	282	1.83	
Korean conflict	238	4.63	704	4.57	
Vietnam era	3247	63.23	8271	53.69	
Gulf War	1098	21.38	4049	26.28	
Multiple	407	7.93	725	4.71	
Missing	49	0.95	1374	8.92	
Deceased	659	12.83	1821	11.82	3.72†

Enrollment priority groups refer to the following levels: (1) 50% or more service-connected disability; (2) Less than 50% service-connected disability; (3) Combat status; (4) Catastrophically disabled; (5) Very low income; (6) Other military-related disability, not prioritized, or unknown; (7) Copay required for services—gross household income below the geographically adjusted income threshold; and (8) Copay required for services—gross household income above the geographically adjusted income threshold.

*$P < 0.0001$.
**$P < 0.05$.
***$P = 0.06$.
†$P = 0.05$.

TABLE 4. ASSOCIATIONS OF SOCIAL DETERMINANTS OF HEALTH AND SERVICE-RELATED CHARACTERISTICS AMONG TRANSGENDER VETERANS SEEKING VETERANS HEALTH ADMINISTRATION CARE, FY13 AND EARLIER

	Transgender (N=5135)		*Nontransgender (N=15,405)*		*Unadjusted OR*		*Adjusted OR*	
Characteristic	n	%	N	%	*OR*	*95% CI*	*OR*	*95% CI*
Rural geography	2065	40.21	7657	49.70	0.66*	0.62–0.71	0.73*	0.68–0.78
Other insurance	2647	51.55	7725	50.15	1.07**	1.00–1.32	1.24*	1.15–1.33
Ever homeless	1564	30.46	1587	10.30	4.33*	3.97–4.71	3.23*	2.95–3.54
Ever incarcerated	138	2.69	188	1.22	2.26*	1.80–2.82	1.66*	1.31–2.11
Military sexual trauma	782	15.23	888	5.76	3.31*	2.97–3.69	2.73*	2.42–3.07
Combat veteran	670	13.05	1718	11.15	1.21*	1.10–1.34	1.15 ***	1.04–1.28
Service-connected disability	2435	47.42	6462	41.96	1.27*	1.19–1.36	2.08*	1.84–2.36

Adjusted models control for marital status, religious affiliation, and priority group.
*$P<0.0001$.
**$P=0.07$.
***$P<0.001$.
CI, confidence interval; OR, odds ratios.

(level 5: 33% vs. 25%; Table 3). Table 4 lists social determinants of health that could be assessed using the EHR. TG veterans (40%) were significantly less likely than controls (50%) to live in a rural area (OR=0.66, 95% CI=0.62–0.71, $P<0.0001$). Significantly more TG veterans had been homeless (30% vs. 10%; OR=4.34, 95% CI=3.97–4.71, $P<0.0001$) or ever incarcerated (3% vs. 1%; OR=2.26, 95% CI=1.80–2.82, $P<0.0001$). These associations were retained after adjusting for marital status, religious affiliation, and priority group: rural geography (adjusted odds ratio [AOR]=0.73; 95% CI=0.68–0.78, $P<0.0001$), lifetime homelessness (AOR=3.23; 95% CI=2.95–3.54, $P<0.0001$), and ever incarcerated (AOR=1.66; 95% CI=1.31–2.11, $P<0.0001$). The association of TG identity and additional insurance coverage was significant in adjusted models (OR=1.24; 95% CI=1.15–1.33, $P<0.0001$). Additional insurance coverage refers to those veterans who have healthcare coverage from sources outside VHA, for example, private health insurance, Medicare, Medicaid. Those veterans who have more than one source of healthcare coverage would, in theory, have greater access to healthcare (particularly specialty care), which would, in turn, have a potential impact on health disparities.

Service-related characteristics

Unique to military and veteran healthcare experiences are considerations involving disabilities incurred while serving in uniform, combat experience, and the Department of Defense and VHA initiatives to identify and treat those service members and veterans who report having been sexually assaulted or traumatized while serving in the military. In unadjusted analyses, TG veterans were significantly more likely to have an SCD (Table 4; 47% vs. 42%; OR=1.27, 95% CI=1.19–1.36, $P<0.0001$), to be a combat veteran (13% vs. 11%; OR=1.21, 95% CI=1.10–1.34, $P<0.0001$), and to have reported MST (15% vs. 6%; OR=3.31, 95% CI=2.97–3.69, $P<0.0001$). These associations remained in adjusted models, which took into account marital status, religious affiliation, and priority group.

Mental health and medical illnesses

Significant differences between groups were observed for a majority of illnesses analyzed after adjusting for marital status, religious affiliation, and priority group (Table 5). TG veterans were significantly more likely to be diagnosed with all of the included psychiatric and medical conditions, except breast cancer and cirrhosis (cirrhosis was found to be less likely in TG veterans after adjusting for marital status, religious affiliation, and enrollment priority group). Odds of HIV seropositivity were nearly five times greater in TG veterans compared to controls. A 10% or more difference in the prevalence of the following conditions was observed between groups: depression, serious mental illnesses (see Supplementary Appendix A for a list of diagnostic codes), suicidal ideation/attempt, post-traumatic stress disorder, alcohol abuse, obesity, and tobacco use. Prevalence of end-stage renal disease was no longer significant after adjusting for marital status, religious affiliation, and the enrollment priority group. Removal of the TF group from each of the analyses did not significantly alter the findings.

Discussion

This study is the first in the United States to identify a large cohort of TG, predominantly gender dysphoric, patients for whom extensive medical and administrative records are available. Both The Joint Commission and the Institute of Medicine have issued reports about the importance of addressing the healthcare needs of LGBT patients,[13,31] and our results underscore numerous health disparities among TG veterans. Although some healthcare systems have recently begun to collect gender identity data (e.g., University of California at Davis, Fenway Health, Mayo Clinic), inclusion of such information in the EHR on a large scale remains in its infancy; such data are unavailable on a retrospective basis in any of these systems.[32] Such information is not currently available in VHA; therefore, we can only estimate the population of TG veterans enrolled for care and who receive a qualifying diagnosis. We know little about the majority of veterans

TABLE 5. ADJUSTED ODDS OF MENTAL HEALTH AND MEDICAL ILLNESSES FOR TRANSGENDER VETERANS SEEKING VETERANS HEALTH ADMINISTRATION CARE, 1996–2013

	Transgender (N=5135)		*Nontransgender (N=15,405)*		*Unadjusted OR*		*Adjusted OR*	
	n	%	n	%	*OR*	*95% CI*	*OR*	*95% CI*
Acute myocardial infarction	150	2.92	272	1.77	1.68†	1.37–2.06	1.36**	1.10–1.69
Alcohol abuse	1653	32.19	2813	18.26	2.24†	2.08–2.42	1.68†	1.55–1.82
Benign prostatic hyperplasia	807	15.72	1393	9.04	2.06†	1.86–2.28	1.95†	1.75–2.16
Breast cancer	33	0.64	243	1.58	0.39†	0.27–0.57	0.34***	0.24–0.50
Cardiac arrest	56	1.08	80	0.52	2.11†	1.50–2.97	1.72**	1.20–2.47
Cerebral vascular disease	433	8.43	822	5.34	1.66†	1.46–1.87	1.41†	1.24–1.60
Chronic obstruction pulmonary disease	1247	24.28	2338	15.18	1.88†	1.73–2.04	1.53†	1.41–1.67
Cirrhosis	115	2.24	320	2.08	1.08	0.87–1.35	0.77*	0.61–0.96
Congestive heart failure	444	8.65	838	5.44	1.69†	1.49–1.91	1.35†	1.19–1.54
Depression, major	2451	47.73	2651	17.21	4.69†	4.37–5.05	4.03†	3.73–4.35
Depression, other	3817	74.33	58.07	37.70	5.19†	4.82–5.59	4.55†	4.21–4.92
Diabetes	1366	26.60	3160	20.51	1.45†	1.34–1.57	1.34†	1.23–1.45
Eating disorders	143	2.78	174	1.13	2.52†	2.01–3.15	2.01†	1.58–2.54
HIV	149	2.90	79	0.51	5.96†	4.51–7.87	4.98†	3.70–6.69
Hypercholesterolemia	3025	58.91	7676	49.83	1.54†	1.43–1.65	1.58†	1.47–1.70
Hypertension	2964	57.72	7489	48.61	1.58†	1.47–1.70	1.51†	1.40–1.61
Ischemic heart disease	1168	22.75	2455	15.94	1.65†	1.52–1.79	1.49†	1.36–1.63
Obesity	2094	40.78	4679	30.37	1.62†	1.51–1.73	1.58†	1.48–1.70
Panic disorder	475	9.25	619	4.02	2.47†	2.18–2.80	2.06†	1.80–2.36
Post-traumatic stress disorder	1989	38.73	2770	17.98	3.05†	2.84–3.28	2.82†	2.60–3.06
Prostate cancer	190	3.70	410	2.66	1.44†	1.20–1.72	1.42***	1.17–1.72
Renal disease, chronic	752	14.64	1441	9.35	1.70†	1.55–1.88	1.42†	1.29–1.58
Renal disease, end stage	50	0.97	96	0.62	1.58***	1.12–2.22	1.21	0.83–1.77
Serious mental illness	1676	32.64	1687	10.95	4.15†	3.83–4.50	3.31†	3.03–3.60
Suicidal ideation/attempt	994	19.36	701	4.55	5.22†	4.70–5.80	4.10†	3.67–4.59
Tobacco use	2423	47.19	5241	34.02	1.79†	1.68–1.91	1.46†	1.37–1.57
Traumatic brain injury	413	8.04	728	4.73	1.79†	1.58–2.03	1.41†	1.18–1.75

Adjusted models control for marital status, religious affiliation, and enrollment priority group.
*$P<0.05$.
**$P<0.01$.
***$P<0.001$.
†$P<0.0001$.

who do not utilize VHA healthcare services or those who self-identify as TG but who do not have a clinical diagnosis. It is critical to the health of TG patients for systems to understand who they are treating so that administrative and clinical services can be properly tailored to the needs of these patients. For example, reminder letters for health screenings like mammograms and prostate exams are inaccurately targeted to patients in a system that does not account for potential differences in birth sex and self-identified gender identity.[13,32]

Consistent with the theory of "flight into hypermasculinity" proposed by Brown,[1] Blosnich et al.[12] noted that the prevalence of veterans with GID or GID NOS was substantially higher than that estimated for western nations' general populations at 22.9/100,000 veteran population of natal males compared to 4.3/100,000 in the general population (2000–2011). However, single-state estimates of the prevalence of TG identity (i.e., self-identification not based on a clinical diagnosis) in the United States range from 100/1000 population (California)[33] to 500/1000 (Massachusetts).[34] Our findings cannot address the prevalence of veterans who self-identify as TG, but who do not receive a clinical diagnosis. There is no study of the veteran population using methods similar to those described by Conron et al.[34] or as summarized in the Williams Institute report.[33] The hypermasculinity theory relates only to birth sex males who report enlisting in the armed forces and not to birth sex females and does not account for all motivations for enlistment. This theory further hypothesizes that transwomen who enter military service would also be more likely to gravitate to higher risk jobs within the military, for example, combat duties. The finding of a higher rate of combat experience in the TG veteran population compared to controls supports this hypothesis as well.

Those TG veterans who reached the clinical significance criteria for GID or GID-NOS are likely a fraction of those who self-identify as TG,[33] an umbrella term that encompasses many gender-nonconforming individuals, many of whom do not meet criteria for any gender-related diagnosis. The expansion of the definition of "transgender veteran" in this study to include TF is consistent with conceptualizations of TG identity on a continuum that changes over the life course,[35,36] such that those who engage in cross-dressing activities but who do not meet GID or GID NOS criteria often view themselves as TG and may, or may not, utilize TG health services at some point in their lives.

Person and Ovesey[37] described the phenomenon known as "secondary transsexualism," in which those persons who initially meet TF criteria earlier in life would later present with persistent gender dysphoria consistent with transsexualism. Others have described the TG "coming out" process to include early fetishistic interest in clothing that evolves over time to a diagnostic picture consistent with GID.[35,38] Some researchers have theorized that TG persons live outside the "binary" model of gender identity and that transvestism, transgenderism, and transsexualism are parts of the TG spectrum, which includes people who are gender nonconforming but without gender "pathology," as described in prevailing medical models.[39] The inclusion of those with TF expanded the TG veteran population by 4.8%. We completed all analyses with, and without, the TF group and found no differences in the results.

Table 5 and Figure 1 include data for a "serious mental illness" (SMI) category. Supplementary Appendix A lists the diagnoses subsumed under this heading, which are nonoverlapping with other diagnostic categories listed in Table 5. Collapsing multiple diagnoses associated with psychotic symptoms into a SMI grouping have been utilized by VHA in the National Psychosis Registry, which in turn is used for research on healthcare outcomes' research.[40,41] There is evidence of diagnostic consistency over time for patients with a SMI, although the distinctions between and among some of the individual diagnoses within the SMI category may be suspected.[42] Indeed, DSM-5[43] has substantially modified diagnostic categories for SMI, particularly the "schizophrenia spectrum" disorders, compared to prior nosologies.[44]

Suris and Lind[45] noted the frequent co-occurrence of MST and treatment in VHA for PTSD, substance use disorders, and chronic medical illnesses. The elevated rates of MST in TG veterans compared with controls may be associated with the observed substantial elevations in both mental and medical health conditions. Further research is warranted on this finding.

Homelessness is a social determinant that can contribute to the significant disparities seen for TG veterans.[46] Homeless and marginally housed individuals are known to suffer from multimorbidities (mental and medical illnesses) and premature mortality.[47] High rates of mental illness and substance use disorders are also associated with homelessness in veterans and nonveterans alike.[48–50] Incarceration for TG veterans was also found to be two to three times more likely than in the control group. This finding is consistent with estimates of the prevalence of incarceration in TG people in the United States being at least twice higher than expected.[51]

It is well known that HIV risk behaviors and infection are elevated in TG persons, especially for male-to-female TG persons of color.[52–54] A complex interaction among numerous social determinants culminating in HIV infection has been described to include homelessness, social stigma, job discrimination, drug and alcohol abuse, and involvement with sex work.[55,56] Structural risks, such as social exclusion, economic marginalization, and reduced access to TG healthcare, either because such healthcare is in short supply or because of negative experiences with the healthcare system in which it is delivered also contribute to disparities.[57]

Studies of TG persons indicate a higher rate of other health risk behaviors to include tobacco use, compared to the general population, with initial use at an earlier age.[58] This finding was replicated in our VHA cohort as a group. Racial disparities in health risk behaviors to include tobacco use, alcohol abuse, and contraction of HIV in this cohort have been previously reported.[59]

A number of factors can account for the nearly global health disparities reported in this article. In non-VHA settings, it has been reported that TG persons in the community often fear seeking medical care across the continuum of care ranging from preventive care to routine medical care to emergency care.[60] Up to 80% of TG persons surveyed about their concerns regarding accessing healthcare included fear about

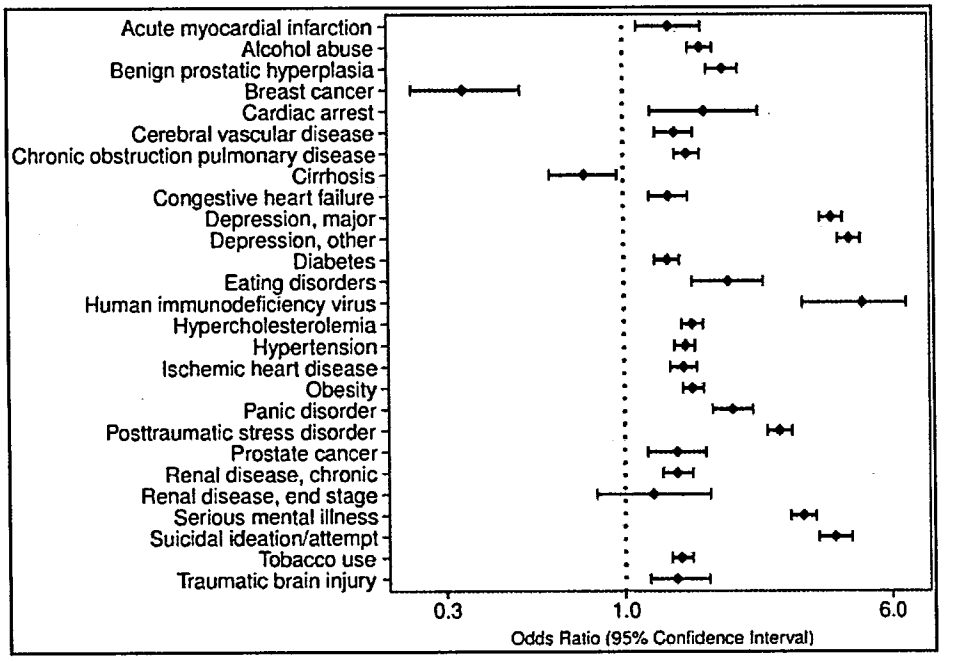


FIG. 1. Forest plot of differences in lifetime mental health and medical illnesses for veterans seeking VHA care, 1996–2013. AOR, adjusted odds ratio.

negative repercussions if their "secret" (i.e., TG identity) was revealed.[61] Distrust of the confidentiality of medical care was frequently expressed by respondents. Results from the largest survey of TG persons ever conducted, 20% of whom were veterans, revealed high levels of discrimination against TG persons in healthcare settings, including 19%–22% reporting being refused treatment altogether and 28% reporting being verbally harassed in a medical setting.[6,61]

Of the nearly 7000 respondents to this survey, 25% reported delaying needed medical care because of discrimination from healthcare providers. Finally, 21% of TG persons entitled to free emergency department services in Canada reported that they avoided emergency care and 52% reported negative emergency department experiences that they believed were based on their TG status.[62] Social determinants of health are poorly documented in this population and require further research.[13] These factors may be combined with the structural stigma,[63] or institutional stigma, which was present in VHA before the changes instituted in 2011, to allow for access to TG healthcare nationally.

Limitations

Several limitations should be noted. First, due to reliance on a diagnosis-based definition of TG status, this study likely underestimates the TG veteran population. Therefore, generalizability of the findings may be largely limited to those with clinically significant levels of gender dysphoria, likely a minority of TG veterans who receive their healthcare in VHA facilities.[33,61] Likewise, generalizing to other healthcare systems may not be appropriate due to the fact that those in this study were all veterans. Diagnoses were made by VHA clinicians from the entire VHA healthcare system over a 17-year period and may be prone to misclassification. Therefore, a random sample of 100 charts identified by ICD-9 codes for one of the four diagnoses was reviewed by Brown for diagnostic and coding accuracy.

This review included charts from 70 facilities and 21 of the 22 regionalized catchment areas in the United States and its territories. Nearly all (98%) of the charts reviewed had clinical documentation consistent with one or more of the four qualifying diagnoses. An additional chart review of 30 patients who received only a TF diagnosis ($n=247$) was conducted to determine if there was evidence of GID/gender dysphoria in addition to TF. Thirty percent of the charts included evidence for a GID diagnosis in addition to, or instead of, TF; 70% of the reviews were consistent with a TF-only diagnosis. Given that we collapsed the four codes in our analyses, the reliability of a specific GID diagnosis (for example GID vs. GID NOS) was not relevant, but it is possible that a small percentage of coding errors could have misidentified some veterans as belonging to the TG cohort.

Finally, the lack of collection of both birth sex and self-identified gender identity data for enrolled patients in VHA makes it difficult to determine the exact proportion of TG veterans who identify as transmen, transwomen, or another identity outside of the traditional binary. Disparities and social determinants of health and well-being may well differ between transmen and transwomen, for example, and it is not known how many of the TG veterans in this cohort have changed their "sex" markers in their VA medical records. This is not unique to VHA as a healthcare system, and this problem will likely be ameliorated by adding these new demographic fields to the enrollment process in VHA beginning in 2016. This study also includes a largely non-Hispanic white, birth sex male population that may not reflect the health disparities experienced by TG people of color. We previously published data from this cohort that demonstrated greater health disparities for black TG veterans compared to whites, for example,[59] but the sample size for other racial and ethnic groups was insufficient for a meaningful subanalysis.

Future directions

We plan additional analyses of the TG veteran cohort, including studies comparing overall service utilization, pharmacy benefits' utilization, incarceration issues, and cancer disparities. Prospective studies are planned to determine whether the national initiatives put into place since 2011 have closed the disparity gaps for TG veterans' health. The associations among homelessness, MST, and long-term health outcomes for this population should also be further researched.

Conclusion

The identification of health and healthcare disparities is the first step in a multistep model of conducting disparities research that is followed by an understanding of the determinants underlying the disparities to ultimately intervene and reduce or eliminate those disparities.[27] This study takes an important step in identifying the nearly global nature of medical and mental health disparities in a TG population in the largest integrated healthcare system in the United States, but it cannot provide the deeper understanding of the sources of these disparities, which are likely to include a variety of factors. Such factors are likely to include, at a minimum, a history of an unwelcoming environment for TG veterans at many VHA facilities, lack of knowledgeable clinical staff to provide TG healthcare, and conscious and unconscious bias from healthcare providers[6,64] and administrative staff.

It is critical to meaningfully and sensitively collect self-identified gender identity information to develop facility-level, regional, and national treatment programs targeted to the needs of TG patients and to build appropriate clinical capacity within the organization to meet those identified needs. VHA has made some significant inroads over the past 4 years in developing training programs for VHA clinicians and providing improved access to care for TG veterans.[16,65]

Acknowledgments

The authors wish to acknowledge the valuable assistance of John McCarthy PhD; Betsy Lancaster; Chad Cross, PhD; Elizabeth Tarlov, PhD, RN, and the VHA VINCI staff in reviewing our methods; and John Blosnich, PhD and Noreen Arnold for reviewing and commenting on earlier versions of the article.

Disclaimer

The opinions in this article are those of the authors and do not necessarily reflect those of the United States Government or any of its agencies or the views or positions of East Tennessee State University.

This work was presented, in part, at the 2014 Annual Meeting of the Gay and Lesbian Medical Association, in Baltimore, MD, on September 11, 2014.

Author Disclosure Statement

Neither of the authors have a relevant conflict of interest to disclose with respect to this work. The first author has received honorarium from Janssen and Sunovion for presentations related to the pharmacological management of schizophrenia and bipolar disorder, topics unrelated to the work described in this study.

References

1. Brown GR: Transsexuals in the military: Flight into hypermasculinity. Arch Sex Behav 1988;17:527–537.
2. Frank L: Women in the American Civil War, Volume 1. Santa Barbara, CA: ABC-CLIO, 2008, p 27.
3. Beck K, Speckhard A: Warrior Princess. McLean, VA: Advance Press, 2013.
4. Witten TM: Gender identity and the military—Transgender, transsexual, and intersex identified individuals in the U.S. armed forces: A report commissioned by the Michael D. Palm Center, University of California, Santa Barbara, 2007. Available at: http://www.palmcenter.org/files/active/0/TransMilitary2007.pdf, accessed February 4, 2014.
5. McDuffie E, Brown GR: 70 US veterans with gender identity disturbances: A descriptive study. Int J Transgenderism 2010;12:21–30.
6. Grant JM, Mottet LA, Tanis J, et al.: National Transgender Discrimination Survey Report on Health and Health Care. National Center for Transgender Equality and the National Gay and Lesbian Task Force: Washington, DC, 2010.
7. Cole CM, O'Boyle M, Emory LE, Meyer WJ 3rd: Comorbidity of gender dysphoria and other major psychiatric diagnoses. Arch Sex Behav 1997;26:13–26.
8. Kenagy GP: Transgender health: Findings from two needs assessment studies in Philadelphia. Health Soc Work 2005;30: 19–26.
9. à Campo J, Nujman H, Merckelbach, Evers C: Psychiatric comorbidity of gender identity disorders: A survey among Dutch psychiatrists. Am J Psychiatry 2003;160:1332–1336.
10. Hepp U, Kraemer B, Schnyder U, et al.: Psychiatric comorbidity in gender identity disorder. J Psychosom Res 2005; 58:259–261.
11. van Kesteren PJ, Asscheman H, Megens JA, Gooren LJ: Mortality and morbidity in transsexual subjects treated with cross-sex hormones. Clin Endocrinol (Oxf) 1997;47:337–342.
12. Blosnich JR, Brown GR, Shipherd JC, et al.: Prevalence of gender identity disorder and suicide risk among transgender Veterans utilizing Veterans Health Administration care. Am J Public Health 2013;103:e27–e32.
13. Institute of Medicine: The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding. Washington, DC: National Academy of Sciences, 2011.
14. Blosnich JR, Brown GR, Wojcio S, et al.: Mortality among veterans with transgender-related diagnoses in the Veterans Health Administration, FY2000-2009. LGBT Health 2014; 1:269–276.
15. Daulaire N: The importance of LGBT health on a global scale. LGBT Health 2013;1:1–2.
16. Mattocks KM, Kauth MR, Sandfort T, et al.: Understanding health-care needs of sexual and gender minority veterans: How targeted research and policy can improve health. LGBT Health 2013;1:30–37.
17. U.S. Veterans Affairs, Veterans Health Administration. VHA Directive 2011–024: Providing health care for transgender and intersex veterans, 2013. Available at: www.paloalto.va.gov/docs/VA Transgender_Directive.pdf, accessed September 2, 2015.
18. Department of Veterans Affairs, Veterans Health Administration. VHA Directive 2013–003: Providing health care for transgender and intersex veterans, 2013. Available at: www.va.gov/vhapublications/ViewPublication.asp?pub_ID=2863, accessed June 1, 2014.
19. Medicode (Firm). ICD-9-CM: International Classification of Diseases, 9th Revision, Clinical Modification. Salt Lake City, UT: Medicode, 1996.
20. Gibbons RD, Brown CH, Hur K, et al.: Relationship between antidepressants and suicide attempts: An analysis of the Veterans Health Administration data sets. Am J Psychiatry 2007;164:1044–1049.
21. Lamoreaux J: The organizational structure for medical information management in the Department of Veterans Affairs: An overview of major health care databases. Med Care 1996;34(3 suppl):MS31–MS44.
22. Nöel PH, Copeland LA, Perrin RA, et al.: VHA Corporate Data Warehouse height and weight data: Opportunities and challenges for health services research. J Rehabil Res Dev 2010;47:739–750.
23. Pugh MJ, Copeland LA, Zeber JE, et al.: The impact of epilepsy on health status among younger and older adults. Epilepsia 2005;46:1820–1827.
24. West AN, Lee RE, Shambaugh-Miller MD, et al.: Defining "rural" for veterans' health care planning. J Rural Health 2010;26:301–309.
25. VA Information Resource Center. Vital Status File Date of Birth (DOB) and Sex Quality Review. Hines, IL: U.S. Dept. of Veterans Affairs, Health Services Research and Development Service, VA Information Resource Center, 2011.
26. Greenberg GA, Rosenheck RA: Mental health and other risk factors for jail incarceration among male veterans. Psychiatr Q 2009;80:41–53.
27. Kilbourne AM, Switzer G, Hyman K, et al.: Advancing health disparities research within the health care system: A conceptual framework. Am J Public Health 2006;96: 2113–2121.
28. Metraux S, Clegg LX, Daigh JD, et al.: Risk factors for becoming homeless among a cohort of veterans who served in the era of the Iraq and Afghanistan conflicts. Am J Public Health 2013;103(suppl):S255–S261.
29. Tsai J, Desai MU, Cheng AW, Chang J: The effects of race and other socioeconomic factors on health service use among American military veterans. Psychiatr Q 2014;85:35–47.
30. Wallace AE, Weeks WB, Wang S, et al.: Rural and urban disparities in health-related quality of life among veterans with psychiatric disorders. Psychiatr Serv 2006;57:851–856.
31. The Joint Commission. Advancing Effective Communication, Cultural Competence, and Patient- and Family-Centered Care for the Lesbian, Gay, Bisexual, and Transgender (LGBT) Community: A Field Guide. Oak Brook, IL, 2011.
32. Deutsch MB, Green J, Keatley J, et al.: Electronic medical records and the transgender patient: Recommendations from the World Professional Association for Transgender Health EMR working group. J Am Med Inform Assoc 2013;20:700–703.
33. Gates GJ: How many people are lesbian, gay, bisexual and transgender? UCLA: The Williams Institute, 2011. Available

at: https://escholarship.org/uc/item/09h684x2, accessed June 2, 2015.
34. Conron K, Scott G, Stowell G, Landers S: Transgender health in Massachusetts: Results from a household probability sample of adults. Am J Public Health 2012;102:118–122.
35. Lev A: Transgender Emergence: Therapeutic Guidelines for Working with Gender-Variant People and Their Families. New York: Haworth Press, 2004.
36. Bockting W, Coleman E: Developmental stages of the transgender coming out process: Toward an integrated identity. In: Principles of Transgender Medicine and Surgery. Edited by Ettner R, Monstrey S, Eyler A. New York: Haworth Press, 2007, pp 185–208.
37. Person E, Ovesey L: The transsexual syndrome in males: II. Secondary transsexualism. Am J Psychother 1974;28:174–193.
38. Docter R: Transvestites and Transsexuals: Toward a Theory of Cross-Gender Behavior. New York: Springer, 1988.
39. Tauchert A: Beyond the binary. Fuzzy gender and the radical center. In: Unseen Genders: Beyond the Binaries. Edited by Haynes F, McKenna T. New York: Peter Lang, 2001, pp 181–191.
40. Kilbourne AM, Welsh D, McCarthy JF, et al.: Quality of care for cardiovascular disease-related conditions in patients with and without mental disorders. J Gen Intern Med 2008;23: 1628–1633.
41. McCarthy JF, Valenstein M, Dixon L, et al.: Initiation of assertive community treatment among veterans with serious mental illness: Client and program factors. Psychiatr Serv 2009;60:196–201.
42. Ivleva EI, Bidesi AS, Keshavan MS, et al.: Gray matter volume as an intermediate phenotype for psychosis: Bipolar-Schizophrenia Network on Intermediate Phenotypes (B-SNIP). Am J Psychiatry 2013;170:1285–1296.
43. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th ed. DSM-5. Washington, DC, 2013.
44. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 4th ed., text revision. DSM-IV-TR ed. Washington, DC, 2000.
45. Suris A, Lind L: Military sexual trauma: A review of prevalence and associated health consequences in veterans. Trauma Violence Abuse 2008;9:250–269.
46. Edens EL, Kasprow W, Tsai J, Rosenheck RA: Association of substance use and VA service-connected disability benefits with risk of homelessness among veterans. Am J Addict 2011;20:412–419.
47. Vila-Rodriguez F, Panenka WJ, Lang DJ, et al.: The hotel study: Multimorbidity in a community sample living in marginal housing. Am J Psychiatry 2013;170:1413–1422.
48. Gamache G, Rosenheck R, Tessler R: Overrepresentation of women veterans among homeless women. Am J Public Health 2003;93:1132–1136.
49. Rosenheck R. Leda CA, Frisman LK, et al.: Homeless veterans. In: Homelessness in America: A reference book. Edited by Baumohl J. Phoenix, AZ: Oryx Press, 1996, pp 97–108.
50. Tessler R, Rosenheck R, Gamache G: Comparison of homeless veterans with other homeless men in a large clinical outreach program. Psychiatr Q 2002;73:109–119.
51. Brown GR: Autocastration and autopenectomy as surgical self-treatment in incarcerated persons with gender identity disorder. Int J Transgenderism 2010;12:31–39.
52. Herbst JH, Jacobs ED, Finlayson TJ, et al.: Estimating HIV prevalence and risk behaviors of transgender persons in the United States: A systematic review. AIDS Behav 2008; 12:1–17.
53. Operario D, Soma T, Underhill K: Sex work and HIV status among transgender women: Systematic review and meta-analysis. J Acquir Immune Defic Syndr 2008;48:97–103.
54. Wilson EC, Garofalo R, Harris RD, et al.: Transgender female youth and sex work: HIV risk and a comparison of life factors related to engagement in sex work. AIDS Behav 2009;13:902–913.
55. Baral SD, Poteat T, Strömdahl T, et al.: Worldwide burden of HIV in transgender women: A systematic review and meta-analysis. Lancet Infect Dis 2013;13:214–222.
56. Sausa LA, Keatley J, Operario D: Perceived risks and benefits of sex work among transgender women of color in San Francisco. Arch Sex Behav 2007;36:768–777.
57. Pinto RM, Melendez RM, Spector AY: Male-to-female transgender individuals building social support and capital from within a gender-focused network. J Gay Lesbian Soc Serv 2008;20:203–220.
58. Ramafedi G: Lesbian, gay, bisexual, and transgender youths: Who smokes and why? Nicotine Tob Res 2007;9(Suppl 1): S65–S71.
59. Brown GR, Jones KT: Racial health disparities in a cohort of 5135 transgender veterans. J Racial Ethnic Health Disparities 2014;1:257–266.
60. Witten TM, Eyler AE: Transgender aging and the care of the elderly transgendered patient. In: Principles of Transgender Medicine and Surgery. Edited by Ettner R, Monstrey S. New York: Haworth Press, 2007, pp 285–309.
61. Harrison-Quintana J, Herman JL: Still serving in silence: Transgender service members and veterans in the National Transgender Discrimination Survey. LGBTQ Policy J 2012–2013;3:1–13.
62. Bauer GR, Scheim AI, Deutsch MB, Massarella C: Reported emergency department avoidance, use, and experiences of transgender persons in Ontario, Canada: Results from a respondent-driven sampling survey. Ann Emerg Med 2014; 63:713–720.
63. Corrigan PW, Watson AC, Heyrman ML, et al.: Structural stigma in state legislation. Psychiatr Serv 2005;56:557–563.
64. Burgess DJ, Fu SS, van Ryn M: Why do providers contribute to disparities and what can be done about it? J Gen Intern Med 2004;19:1154–1159.
65. Kauth MR, Shipherd JC, Lindsay J, et al.: Access to care for transgender veterans in the Veterans Health Administration: 2006–2013. Am J Public Health 2014;104 Supp 4:S532–S534.

Address correspondence to:
George R. Brown, MD
549 Miller Hollow Road
Bluff City, TN 37618

E-mail: browngr@mail.etsu.edu

This article has been cited by:

1. Raymond P. Tucker, Rylan J. Testa, Mark A. Reger, Tracy L. Simpson, Jillian C. Shipherd, Keren Lehavot. 2018. Current and Military-Specific Gender Minority Stress Factors and Their Relationship with Suicide Ideation in Transgender Veterans. *Suicide and Life-Threatening Behavior* **15**. . [Crossref]
2. Heliana Ramirez, Katharine Bloeser. Risk and Resilience: A Review of the Health Literature of Veterans Who Identify as LGBT 9-24. [Crossref]
3. O'Bryan Jane, Wolf-Gould Carolyn, Matsuo Yoshiro. 2018. Mammary Myofibroblastoma in a Transgender Patient on Feminizing Hormones: Literature Review and Case Report. *Transgender Health* 3:1, 1-9. [Abstract] [Full Text HTML] [Full Text PDF] [Full Text PDF with Links]
4. Shannon Ford, Carla Schnitzlein. 2017. Gender Dysphoria in the Military. *Current Psychiatry Reports* **19**:12. . [Crossref]
5. Dragon Christina N., Guerino Paul, Ewald Erin, Laffan Alison M.. 2017. Transgender Medicare Beneficiaries and Chronic Conditions: Exploring Fee-for-Service Claims Data. *LGBT Health* 4:6, 404-411. [Abstract] [Full Text HTML] [Full Text PDF] [Full Text PDF with Links]
6. Morten Ender, Diane Ryan, Danielle Nuszkowski, Emma Spell, Charles Atkins. 2017. Dinner and a Conversation: Transgender Integration at West Point and Beyond. *Social Sciences* **6**:4, 27. [Crossref]
7. Mollie A. Ruben, John R. Blosnich, Melissa E. Dichter, Lorry Luscri, Jillian C. Shipherd. 2017. Will Veterans Answer Sexual Orientation and Gender Identity Questions?. *Medical Care* **55**, S85-S89. [Crossref]
8. Keren Lehavot, Jodie G. Katon, Tracy L. Simpson, Jillian C. Shipherd. 2017. Transgender Veterans' Satisfaction With Care and Unmet Health Needs. *Medical Care* **55**, S90-S96. [Crossref]
9. Catherine Connell. 2017. "Now that we can ask and tell: The social movement legacy of the DADT repeal". *Sociology Compass* **11**:9, e12506. [Crossref]
10. Michael R. Kauth, John R. Blosnich, Janelle Marra, Zander Keig, Jillian C. Shipherd. 2017. Transgender Health Care in the U.S. Military and Veterans Health Administration Facilities. *Current Sexual Health Reports* **103**. . [Crossref]
11. Johnston Carrie D., Shearer Lee S.. 2017. Internal Medicine Resident Attitudes, Prior Education, Comfort, and Knowledge Regarding Delivering Comprehensive Primary Care to Transgender Patients. *Transgender Health* 2:1, 91-95. [Abstract] [Full Text HTML] [Full Text PDF] [Full Text PDF with Links]
12. Julie K. Schulman, Laura Erickson-Schroth. 2017. Mental Health in Sexual Minority and Transgender Women. *Psychiatric Clinics of North America* 40:2, 309-319. [Crossref]
13. Kauth Michael R., Barrera Terri L., Denton F. Nicholas, Latini David M.. 2017. Health Differences Among Lesbian, Gay, and Transgender Veterans by Rural/Small Town and Suburban/Urban Setting. *LGBT Health* 4:3, 194-201. [Abstract] [Full Text HTML] [Full Text PDF] [Full Text PDF with Links]
14. Ethan C. Cicero, Linda M. Wesp. 2017. Supporting the Health and Well-Being of Transgender Students. *The Journal of School Nursing* **33**:2, 95-108. [Crossref]
15. John R. Blosnich, Mary C. Marsiglio, Melissa E. Dichter, Shasha Gao, Adam J. Gordon, Jillian C. Shipherd, Michael R. Kauth, George R. Brown, Michael J. Fine. 2017. Impact of Social Determinants of Health on Medical Conditions Among Transgender Veterans. *American Journal of Preventive Medicine* **52**:4, 491-498. [Crossref]
16. Charles P. Hoy-Ellis, Chengshi Shiu, Kathleen M. Sullivan, Hyun-Jun Kim, Allison M. Sturges, Karen I. Fredriksen-Goldsen. 2017. Prior Military Service, Identity Stigma, and Mental Health Among Transgender Older Adults. *The Gerontologist* **57**:suppl 1, S63-S71. [Crossref]
17. Gaither Thomas W., Awad Mohannad A., Osterberg E. Charles, Romero Angelita, Bowers Marci L., Breyer Benjamin N.. 2017. Impact of Sexual Orientation Identity on Medical Morbidities in Male-to-Female Transgender Patients. *LGBT Health* 4:1, 11-16. [Abstract] [Full Text HTML] [Full Text PDF] [Full Text PDF with Links]
18. M. Heliana Ramirez, Paul R. Sterzing. 2017. Coming out in camouflage: A queer theory perspective on the strength, resilience, and resistance of lesbian, gay, bisexual, and transgender service members and veterans. *Journal of Gay & Lesbian Social Services* **29**:1, 68-86. [Crossref]
19. Hayley Braun, Rebecca Nash, Vin Tangpricha, Janice Brockman, Kevin Ward, Michael Goodman. 2017. Cancer in Transgender People: Evidence and Methodological Considerations. *Epidemiologic Reviews* **39**:1, 93-107. [Crossref]
20. Jan A. Lindsay, Colt Keo-Meier, Sonora Hudson, Annette Walder, Lindsey A. Martin, Michael R. Kauth. 2016. Mental Health of Transgender Veterans of the Iraq and Afghanistan Conflicts Who Experienced Military Sexual Trauma. *Journal of Traumatic Stress* **29**:6, 563-567. [Crossref]

21. Noah Riseman. 2016. Transgender policy in the Australian Defence Force: Medicalization and its discontents. *International Journal of Transgenderism* **17**:3-4, 141-154. [Crossref]

22. Kauth Michael R., Shipherd Jillian C.. 2016. Transforming a System: Improving Patient-Centered Care for Sexual and Gender Minority Veterans. *LGBT Health* **3**:3, 177-179. [Citation] [Full Text HTML] [Full Text PDF] [Full Text PDF with Links]

23. Jeremy T. Goldbach, Carl Andrew Castro. 2016. Lesbian, Gay, Bisexual, and Transgender (LGBT) Service Members: Life After Don't Ask, Don't Tell. *Current Psychiatry Reports* **18**:6. . [Crossref]

AMERICAN FOUNDATION FOR Suicide Prevention

the Williams INSTITUTE

Suicide Attempts among Transgender and Gender Non-Conforming Adults

FINDINGS OF THE NATIONAL TRANSGENDER DISCRIMINATION SURVEY

Ann P. Haas, Ph.D. and Philip L. Rodgers, Ph.D.,
American Foundation for Suicide Prevention

Jody L. Herman, Ph.D.
Williams Institute, UCLA School of Law

January 2014

EXECUTIVE SUMMARY

The prevalence of suicide attempts among respondents to the National Transgender Discrimination Survey (NTDS), conducted by the National Gay and Lesbian Task Force and National Center for Transgender Equality, is 41 percent, which vastly exceeds the 4.6 percent of the overall U.S. population who report a lifetime suicide attempt, and is also higher than the 10-20 percent of lesbian, gay and bisexual adults who report ever attempting suicide. Much remains to be learned about underlying factors and which groups within the diverse population of transgender and gender non-conforming people are most at risk.

In the present study, we sought to increase understanding of suicidal behavior among transgender and gender non-conforming people through an in-depth analysis of NTDS data. The specific aims of our analysis were to identify the key characteristics and experiences associated with lifetime suicide attempts in the NTDS sample as a whole, and to examine how lifetime suicide attempts vary among different groups of transgender and gender non-conforming people.

Key findings of this report include the following:

- Suicide attempts among trans men (46%) and trans women (42%) were slightly higher than the full sample (41%). Cross-dressers assigned male at birth have the lowest reported prevalence of suicide attempts among gender identity groups (21%).
- Analysis of other demographic variables found prevalence of suicide attempts was highest among those who are younger (18 to 24: 45%), multiracial (54%) and American Indian or Alaska Native (56%), have lower levels of educational attainment (high school or less: 48-49%), and have lower annual household income (less than $10,000: 54%).
- Prevalence of suicide attempts is elevated among those who disclose to everyone that they are transgender or gender-non-conforming (50%) and among those that report others can tell always (42%) or most of the time (45%) that they are transgender or gender non-conforming even if they don't tell them.
- Respondents who are HIV-positive (51%) and respondents with disabilities (55-65%) also have elevated prevalence of suicide attempts. In particular, 65 percent of those with a mental health condition that substantially affects a major life activity reported attempting suicide.
- Respondents who experienced rejection by family and friends, discrimination, victimization, or violence had elevated prevalence of suicide attempts, such as those who experienced the following:
  - Family chose not to speak/spend time with them: 57%
  - Discrimination, victimization, or violence at school, at work, and when accessing health care
    - Harassed or bullied at school (any level): 50-54%
    - Experienced discrimination or harassment at work: 50-59%
    - Doctor or health care provider refused to treat them: 60%
    - Suffered physical or sexual violence:
      - At work: 64-65%
      - At school (any level): 63-78%
  - Discrimination, victimization, or violence by law enforcement
    - Disrespected or harassed by law enforcement officers: 57-61%
    - Suffered physical or sexual violence: By law enforcement officers: 60-70
  - Experienced homelessness: 69%

"Overall, the most striking finding of our analysis was the exceptionally high prevalence of lifetime suicide attempts reported by NTDS respondents across all demographics and experiences."

Overall, the most striking finding of our analysis was the exceptionally high prevalence of lifetime suicide attempts reported by NTDS respondents across all demographics and experiences. Based on prior research and the findings of this report, we find that mental health factors and experiences of harassment, discrimination, violence and rejection may interact to produce a marked vulnerability to suicidal behavior in transgender and gender non-conforming individuals. More research on suicidal behavior among transgender and gender non-conforming people is needed.

INTRODUCTION

Since 2001, over a dozen separate surveys of transgender adults in the United States and other countries have found lifetime suicide attempts to be reported by 25-43 percent of respondents (Clements-Nolle et al., 2001; Clements-Nolle et al., 2006; Grant et al., 2011; Kenagy, 2005; Maguen & Shipherd, 2010; Transgender Equality Network Ireland, 2012; Trans PULSE, 2010; Whittle et al., 2007; Whittle et al., 2008; Xavier et al., 2005; Xavier et al., 2007). These figures vastly exceed the 4.6 percent of the overall U.S. population who report a lifetime suicide attempt (Kessler, Borges and Walters, 1999; Nock & Kessler, 2006), and are also higher than the 10-20 percent of lesbian, gay and bisexual adults who report ever attempting suicide (Paul et al., 2002).

While these surveys suggest an unparalleled level of suicidal behavior among transgender adults, much remains to be learned about underlying factors and which groups within this diverse population are most at risk. In the present study, we sought to increase understanding of suicidal behavior among transgender and gender non-conforming people through an in-depth analysis of data from the U.S. National Transgender Discrimination Survey (NTDS), conducted by the National Gay and Lesbian Task Force and the National Center for Transgender Equality. With over 6,000 respondents, the NTDS is the largest survey of transgender and gender non-conforming adults to date. In that sample, 41 percent of respondents reported ever attempting suicide (Grant et al., 2011).

The specific aims of our analysis were to identify the key characteristics and experiences associated with lifetime suicide attempts in the NTDS sample as a whole, and to examine how lifetime suicide attempts vary among different groups of transgender and gender non-conforming people. In this report, we present our findings, discuss their implications, and conclude by describing considerations and needs for future research.

METHODS AND LIMITATIONS

The NTDS was launched in fall 2008 and was distributed online and on paper through over 900 organizations that were known venues for contact with the transgender community throughout the United States. Details of the survey instrument, methods and procedures have previously been described (Grant et al., 2011). In brief, responses were obtained from 6,456 self-identified transgender and gender non-conforming adults aged 18 and over. History of lifetime suicide attempt was among the many outcomes covered in the 70-item survey. The analysis of the NTDS data presented in this paper is mainly descriptive. Where appropriate, Pearson's chi-square tests of independence were conducted to assess whether lifetime suicide attempts were related to a variety of characteristics and experiences of survey respondents.

While the NTDS provides a wealth of information about the experiences of transgender and gender non-conforming people, the survey instrument and methodology posed some limitations for this study. First, the NTDS questionnaire included only a single item about suicidal behavior that asked, "Have you ever attempted suicide?" with dichotomized responses of Yes/No. Researchers have found that using this question alone in surveys can inflate the percentage of affirmative responses, since some respondents may use it to communicate self-harm behavior that is not a "suicide attempt," such as seriously considering suicide, planning for suicide, or engaging in self-harm behavior without the intent to die (Bongiovi-Garcia et al., 2009). The National Comorbity Survey, a nationally representative survey, found that probing for intent to die through in-person interviews reduced the prevalence of lifetime suicide attempts from 4.6 percent to 2.7 percent of the adult sample (Kessler et al., 1999; Nock & Kessler, 2006). Without such probes, we were unable to determine the extent to which the 41 percent of NTDS participants who reported ever attempting suicide may overestimate the actual prevalence of attempts in the sample. In addition, the analysis was limited due to a lack of follow-up questions asked of respondents who reported having attempted suicide about such things as age and transgender/gender non-conforming status at the time of the attempt.

Second, the survey did not directly explore mental health status and history, which have been identified as important risk factors for both attempted and completed suicide in the general population (Lasage, Boyer, Grunberg, Vanier, Morissett et al., 1994; Suominen, Henrikssen, Suokas, Isometsa, Ostamo, et al., 1996; Harris & Barraclough, 1997; Bertolote & Fleischmann, 2002; Nock, Hwang, Sampson, & Kessler, 2010). Further, research has shown that the impact of adverse life events, such as being attacked or raped, is most severe among people with co-existing mood, anxiety and other mental disorders (Breslau, Davis, Andreski, & Peterson,

1991; Kendler, Kardowski, & Presco, 1999). The lack of systematic mental health information in the NTDS data significantly limited our ability to identify the pathways to suicidal behavior among the respondents.

Third, since the NTDS utilized convenience sampling, it is unclear how representative the respondents are of the overall U.S. transgender/gender non-conforming adult population. Further, the survey's focus on discrimination may have resulted in wider participation by persons who had suffered negative life experiences due to anti-transgender bias.[1] As the relationship between minority stress and mental health would suggest (Meyer, 2003), this may have contributed to a higher prevalence of negative outcomes, including lifetime suicide attempts, in the sample. These limitations should be kept in mind in interpreting the findings of our analyses.

Finally, it should be emphasized that the NTDS, like all similar surveys, captured information about suicide attempts, not completed suicide. Lacking any information about completed suicide among transgender people (due primarily to decedents not being identified by gender identity or transgender status), it may be tempting to consider suicide attempt data to be the best available proxy measure of suicide death. Data from the U.S. population at large, however, show clear demographic differences between suicide attempters and those who die by suicide. While almost 80 percent of all suicide deaths occur among males, about 75 percent of suicide attempts are made by females. Adolescents, who overall have a relatively low suicide rate of about 7 per 100,000 people, account for a substantial proportion of suicide attempts, making perhaps 100 or more attempts for every suicide death. By contrast, the elderly have a much higher suicide rate of about 15 per 100,000, but make only four attempts for every completed suicide. Although making a suicide attempt generally increases the risk of subsequent suicidal behavior, six separate studies that have followed suicide attempters for periods of five to 37 years found death by suicide to occur in 7 to 13 percent of the samples (Tidemalm et al., 2008). We do not know whether these general population patterns hold true for transgender people but in the absence of supporting data, we should be especially careful not to extrapolate findings about suicide attempts among transgender adults to imply conclusions about completed suicide in this population.

1. *For the purposes of this paper, "anti-transgender bias" means bias or prejudice that is directed toward people who are transgender or gender non-conforming.*

DEMOGRAPHICS

The age of NTDS respondents ranged from 18 to 98 years, with an average of 37 years. Frequency distributions for other demographic characteristics are provided in Table 1; gender-related characteristics are summarized in Table 2.

Table 1: Demographic characteristics of NTDS respondents

	Mean	sd	Range	n
Age	37.0	13.1	18-98	5885

Age Categories	Percent	n
18-24	19%	1099
25-44	52%	3051
45-54	17%	973
55-64	11%	648
65+	2%	114

Race/Ethnicity	Percent	n
American Indian or Alaska Native Alone	1%	75
Asian or Pacific Islander Alone	2%	137
Black or African American Alone	5%	290
Hispanic or Latino Alone	5%	294
White Alone	76%	4872
Multiracial or Mixed Race/Ethnicity[2]	11%	736

Education	Percent	n
Did not graduate from high school	4%	266
High school graduate	8%	540
Some college (incl. AA, AS, tech, other)	40%	2585
College degree (incl. BA, BS, other)	27%	1745
Graduate degree (incl. PhD, MD, other)	20%	1281

Household Income	Percent	n
< $10,000	15%	944
$10,000 - $19,999	12%	754
$20,000 - $49,999	32%	1982
$50,000 - $99,999	28%	1718
> $100,000	14%	860

Employment Status	Percent	n
Full-time	46%	2970
Part-time	16%	1012
More than one job	8%	490
Self-employed (own your business)	8%	541
Self-employed (contract worker)	4%	282
Unemployed but looking	11%	700
Unemployed and stopped looking	3%	210
On disability	8%	502
Student	20%	1292
Retired	7%	450
Homemaker/full-time parent	2%	111
Other	7%	434

Workforce Participation Recode[3]	Percent	n
In workforce	70%	4498
Out of the workforce, unemployed	11%	710
Out of the workforce, not looking	19%	1203

Relationship Status	Percent	n
Single	36%	2286
Partnered	27%	1706
Married	22%	1394
Divorced	11%	690
Separated	3%	185
Widowed	2%	94
Civil Union	1%	72

Sexual Orientation	Percent	n
Gay/Lesbian/Same-Gender Attraction	21%	1326
Bisexual	23%	1473
Queer	20%	1270
Heterosexual	21%	1341
Asexual	4%	260
Other	11%	698

2 *Multiracial or Mixed Race includes survey respondents who selected "Multiracial or Mixed Race" as their race/ethnicity on the survey plus those who selected two or more races/ethnicities.*

3 *NTDS researchers utilized the survey question on employment status to create this three-level current workforce participation recode for survey respondents. The original variable contained the following twelve categories: full-time, part-time, more than one job, self-employed (own your business), self-employed (contract worker), unemployed but looking, unemployed and stopped looking, on disability, student, retired, homemaker or full-time parent, and other. The recoded variable collapsed the twelve categories into three: in workforce, out of the workforce - unemployed, and out of the workforce - not looking. PLEASE NOTE: the rate of those who are out of the workforce and unemployed should not be used as the unemployment rate for the NTDS sample. Unemployment rates calculated by the U.S. Bureau of Labor statistics do not include those who are out of the workforce and not looking for employment. For more information on how the U.S. Bureau of Labor Statistics measures unemployment, please visit http://www.bls.gov/cps/cps_htgm.htm. The unemployment rate for the NTDS sample is 14%.*

Demographics - continued

Table 2: Gender-related characteristics of NTDS respondents

Sex Assigned at Birth	Percent	n
Male	60%	3870
Female	40%	2566

Primary Gender Identity Today[4]	Percent	n
Male/Man	26%	1687
Female/Woman	41%	2608
Part time one gender/ part time another	20%	1275
A gender not listed	13%	864

Gender Identity Recode[5]	Percent	n
Trans Women / MTF	47%	3005
Trans Men / FTM	28%	1776
Cross-dresser (male-assigned)	11%	702
Cross-dresser (female-assigned)	3%	192
GNC[6] / Genderqueer (male-assigned)	3%	169
GNC / Genderqueer (female-assigned)	9%	597

Strength of Identification with Listed Identities				
Listed Identity	Strongly	Somewhat	Not at all	n
Transgender	65%	26%	10%	6258
Transsexual	46%	27%	27%	6154
FTM (female to male)	26%	13%	62%	5835
MTF (male to female)	46%	10%	44%	6066
Intersex	6%	16%	79%	5801
GNC or gender variant	32%	34%	34%	5903
Genderqueer	22%	25%	53%	5865
Androgynous	14%	30%	56%	5856
Feminine Male	10%	25%	65%	5837
Masculine Female/Butch	8%	19%	73%	5823
A.G. or Aggressive	2%	8%	90%	5798
Third gender	10%	21%	69%	5814
Cross-dresser	15%	16%	69%	5882
Drag Performer	3%	8%	89%	5795
Two spirit	15%	23%	63%	5851
Other	17%	2%	81%	2552

SUICIDE ATTEMPTS AND DEMOGRAPHIC CHARACTERISTICS

As shown in Table 3, reported lifetime suicide attempts decreased with age, from a high of 45 percent for 18-44 year-olds to 33 percent for 55-64 year-olds and 16 percent for those over 65 years.[7] Respondents who indicated "white" race/ethnicity had the lowest prevalence of lifetime suicide attempts at 38 percent, while American Indians and Alaska Natives reported the highest at 56 percent. Generally, those with greater educational achievement were less likely to report having attempted suicide, with 31 percent of respondents with a graduate degree, compared to 49 percent of those with a high school diploma, reporting a lifetime suicide attempt. Like education, those with higher household income had a lower prevalence of lifetime suicide attempts, with 26 percent of those with income exceeding $100,000 saying they had ever attempted suicide, compared to 54 percent of those with income less than $10,000.

4 *Gender identities listed here are as they appeared on the NTDS survey. "Part time one gender/part time another" was listed to include those respondents who are not yet living full-time in their gender identity, such as those who only express their gender identity in certain circumstances (e.g. at home but not at work) and/or those who do not wish to live full-time in a gender different than the one assigned at birth (e.g. part time cross-dressers).*

5 *NTDS researchers utilized the three questions in the survey related to gender identity and sex assigned at birth (shown in Table 2) to create this six-level gender identity recode for survey respondents. Respondents were first categorized by cross-tabulating sex assigned at birth and primary gender today. Next, respondents' answers to strength of identification with listed terms were taken into consideration. For instance, those who were assigned male at birth and today identify as female would generally be categorized as trans women/ MTF. However, if they did not at all identify with terms indicating a trans identity (transgender, transsexual, MTF) and strongly identified with another identity, such as cross-dresser, they were categorized according to the identity with which they strongly identified. For more information on how the gender identity recode was constructed, see Injustice at Every Turn, available at http://www.thetaskforce.org/reports_and_research/ntds.*

6 *"GNC" stands for Gender Non-Conforming.*

7 *Lower percentages of older respondents reporting lifetime suicide attempts has also been observed in some general population surveys, including the National Comorbidity Survey (Nock & Kessler, 2006). Possible reasons include older respondents' selective recall, reinterpretation of past suicidal behavior in light of more recent life events, and cohort effects.*

Lifetime suicide attempts were less frequently reported by respondents who were in the workforce (37%) than those who were out of the workforce and not looking for work (46%) and those who were unemployed (50%). Among all categories of current participation in the workforce, respondents who were retired reported the lowest prevalence of lifetime suicide attempts (29%), which is consistent with findings related to age. The highest prevalence of lifetime suicide attempts (65%) was found among those on disability.[8]

In regard to relationship status, those who were married or widowed reported lower prevalence of lifetime suicide attempts at 33 percent and 31 percent, respectively, while those who were single reported the highest prevalence at 45 percent. The prevalence of lifetime suicide attempts varied across sexual orientation categories with 35 percent of those who described themselves as heterosexual saying they had ever attempted suicide, compared to 40 percent of those who were gay/lesbian, 40 percent of those who were bisexual, and 46 percent of those who said they were asexual or another orientation.

Table 3: Lifetime suicide attempts by demographic characteristics

	Have Attempted Suicide	
	Frequency	Row %
Age		
18-24	488	45%
25-44	1348	45%
45-54	373	39%
55-64	210	33%
65+	18	16%
		$\chi^2_4 = 70.6$*
Race/Ethnicity		
American Indian or Alaska Native Alone	39	56%
Asian or Pacific Islander Alone	52	39%
Black or African American Alone	118	45%
Hispanic or Latino Alone	125	44%
White Alone	1829	38%
Multiracial or Mixed Race/Ethnicity	395	54%
		$\chi^2_5 = 81.2$*
Education		
Did not graduate from high school	125	48%
High school graduate	258	49%
Some college (incl. AA, AS, tech, other)	1228	48%
College degree (incl. BA, BS, other)	566	33%
Graduate degree (incl. PhD, MD, other)	394	31%
		$\chi^2_4 = 171.7$*

	Have Attempted Suicide	
	Frequency	Row %
Household Income		
< $10,000	504	54%
$10,000 - $19,999	397	53%
$20,000 - $49,999	826	42%
$50,000 - $99,999	563	33%
> $100,000	222	26%
		$\chi^2_4 = 240.0$*
Workforce Participation Recode		
In workforce	1673	37%
Out of the workforce, unemployed	352	50%
Out of the workforce, not looking	547	46%
		$\chi^2_3 = 59.9$*
Relationship Status		
Single	1009	45%
Partnered	715	42%
Married	452	33%
Divorced	272	40%
Separated	67	37%
Widowed	29	31%
Civil Union	32	44%
		$\chi^2_6 = 60.7$*
Sexual Orientation		
Gay/Lesbian	528	40%
Bisexual	583	40%
Queer	544	43%
Heterosexual	466	35%
Asexual	119	46%
Other	318	46%
		$\chi^2_5 = 32.3$*

*$p < .001$

8 *The workforce participation question in the NTDS was a "check all" item with twelve workforce categories listed, meaning respondents could choose more than one response from the list of twelve. Therefore, a chi-square test was only performed with the workforce recode variable, as shown in Table 3. Findings for those on disability and those who are retired are provided here due to their notable rates of lifetime suicide attempts.*

SUICIDE ATTEMPTS AND GENDER IDENTITY

As shown in Table 4, among respondents who were assigned female at birth, 44 percent reported making a lifetime suicide attempt, compared to 38 percent of those who were assigned male at birth.

Table 4: Lifetime suicide attempts by gender-related characteristics

	Have Attempted Suicide	
	Frequency	Row %
Sex Assigned at Birth		
Male	1457	38%
Female	1120	44%
		$\chi^2_1 = 19.3$*
Primary Gender Identity Today		
Male/Man	699	42%
Female/Woman	1106	43%
Part time one gender/ part time another	406	32%
A gender not listed	367	43%
		$\chi^2_3 = 45.1$*
Gender Identity Recode		
Trans Women / MTF	1251	42%
Trans Men / FTM	822	46%
Cross-dresser (male-assigned)	147	21%
Cross-dresser (female-assigned)	84	44%
GNC / Genderqueer (male-assigned)	61	38%
GNC / Genderqueer (female-assigned)	212	36%
		$\chi^2_5 = 145.2$*

*$p < .001$

The percentage of respondents who reported a lifetime suicide attempt overall showed little variability by current gender identity, as defined by respondents' answers to the question "What is your primary gender identity today?" The one exception was seen among those who described themselves as "part time as one gender/part time as another." These respondents, who constituted 20 percent of the NTDS sample, were less likely than others to report having ever attempted suicide. Using the gender identity recode which categorized respondents into one of six gender identities, trans women (MTF), trans men (FTM), and female-assigned cross-dressers had the highest prevalence of lifetime suicide attempts (42%, 46% and 44% respectively).

Additional insight into the relationship between gender identity and lifetime suicide attempts was provided by respondents' answers to a survey question that inquired about mental health care services and medical treatments and procedures related to gender transition. As shown in Table 5, respondents who said they had received transition-related health care or wanted to have it someday were more likely to report having attempted suicide than those who said they did not want it. This pattern was observed across all transition-related services and procedures that were explored in the NTDS. The survey did not provide information about the timing of reported suicide attempts in relation to receiving transition-related health care, which precluded investigation of transition-related explanations for these patterns.

Table 5: Lifetime suicide attempts by responses about transition-related health care

Transition-related Health Care	Do Not Want It	Want It Someday	Have Had It	χ^2_2*
Counseling	190 (29%)	327 (39%)	1963 (44%)	53.2
Hormone Treatment	272 (31%)	540 (40%)	1608 (45%)	60.6
Top/chest/ breast surgery	500 (34%)	1222 (45%)	563 (44%)	46.3
Male-to-female removal of testes	327 (31%)	800 (43%)	286 (43%)	47.3
Male-to-female genital surgery	340 (31%)	834 (43%)	265 (43%)	49.7
Female-to-male hysterectomy	344 (36%)	564 (49%)	182 (48%)	40.4
Female-to-male genital surgery	570 (40%)	464 (49%)	38 (49%)	21.0
Female-to-male phalloplasty	757 (40%)	268 (56%)	21 (46%)	39.9

*$p < .001$

Perceived recognition by others as transgender/ gender non-conforming was also examined as possibly contributing to variation in lifetime suicide attempt rates among NTDS respondents. For this analysis, we looked at responses to the questionnaire item, "People can tell I'm transgender/gender non-conforming even if I don't tell them." This item measured respondents' perceptions of how often others recognize the respondent as transgender or gender non-conforming. As can be seen in Table 6, lifetime suicide attempts were found to be lowest (36%) among respondents who said people can "never" tell they are transgender or gender non-conforming. Suicide attempts were reported by higher percentages of those who said people can "always" (42%) or "most of the time" (45%) tell they are transgender or gender non-conforming.

To better understand the impact of perceived recognition as transgender or gender non-conforming on suicidality, we looked separately at respondents in each of the six major gender identity categories (see Table 7). In three of the gender identity categories:

Table 6: Lifetime suicide attempts by perceived recognition by others

	Have Attempted Suicide	
People can tell I'm transgender/GNC	Frequency	Row %
Always	**167**	**42%**
Most of the time	**457**	**45%**
Sometimes	**693**	**41%**
Occasionally	**765**	**41%**
Never	**487**	**36%**
	$\chi^2_4 = 20.6, p < .001$	

trans women (MTF), male-assigned cross-dressers, and gender non-conforming/genderqueer people assigned male at birth, lifetime suicide attempt rates were found to be lower among those who perceived others as only "occasionally" or "never" being able to tell they are transgender or gender non-conforming, compared to those who thought that others could "always," "most of the time," or "sometimes" tell. Trans men (FTM) were found to have the same prevalence of lifetime suicide attempts (46%) regardless of whether they thought others can tell they are transgender. However, for respondents in the last two gender identity categories – female-assigned cross-dressers and gender non-conforming/genderqueer people assigned female at birth – the prevalence of lifetime suicide attempts was found to be higher among those who said other people "occasionally" or "never" can tell they are transgender or gender non-conforming, compared to those who said that other people "always," "most of the time," or "sometimes" can tell. Cross-dressers assigned female at birth who perceived that they were generally not recognized as transgender or gender non-conforming were found in this analysis to have the highest prevalence of lifetime suicide attempts (47%). In summary, the patterns in Table 7 are most striking among those who said that people can occasionally or never tell they are transgender/gender non-conforming in that those on the trans-feminine spectrum had lower prevalence of lifetime suicide attempts than those on the trans-masculine spectrum.

Related to these analyses, we also examined respondents' disclosure of transgender/gender non-conforming status and whether or not they were "out" in various settings. As shown in Table 8, the prevalence of lifetime suicide attempts was found to be highest (50%) among those who said they "tell everyone" about their transgender/gender non-conforming status and lowest (33%) among those who said they "never" tell people their status.

Table 8: Lifetime suicide attempts by disclosure of transgender/gender non-conforming status

	Have Attempted Suicide	
I tell people that I'm transgender/GNC	Frequency	Row %
Never	**242**	**33%**
Tell people who are close friends	**1755**	**40%**
Tell people who are casual friends	**692**	**41%**
Tell work colleagues	**565**	**40%**
Tell family	**1091**	**41%**
Tell everyone	**468**	**50%**

Similarly, suicide attempts were more frequently reported by respondents who were "out" to others as transgender or gender non-conforming in various settings (see Table 9).[9]

Table 9: Lifetime suicide attempts by being "out" in various settings

	Have Attempted Suicide	
Setting	Not Out	Out
At home	**193 (34%)**	**2233 (41%)**
On the job	**526 (33%)**	**1590 (42%)**
At school	**385 (35%)**	**886 (45%)**
In private social settings	**226 (37%)**	**2274 (41%)**
In public social settings	**603 (38%)**	**1909 (41%)**
When seeking medical care	**395 (31%)**	**2092 (43%)**

Table 7: Lifetime suicide attempts by gender identity and perceived recognition by others

People can tell I'm transgender/GNC	Trans Women / MTF	Trans Men / FTM	Cross-dresser (male assigned)	Cross-dresser (female assigned)	GNC / Genderqueer (male assigned)	GNC / Genderqueer (female assigned)
Always, most of the time, sometimes	**652 (45%)**	**342 (46%)**	**67 (27%)**	**63 (43%)**	**40 (43%)**	**152 (34%)**
Occasionally, never	**590 (40%)**	**480 (46%)**	**76 (17%)**	**20 (47%)**	**21 (31%)**	**60 (42%)**

9 *Respondents were classified as being "Out" if they answered "a few," "some," "most" or "all" to the question, "How many people know or believe you are transgender/gender non-conforming in each of the following settings?" Respondents who answered "none" for each setting found in this question were classified as "Not out". Those who responded "Not Applicable" to any of the settings were excluded from the analysis. Respondents who are "Out" are more likely to report that people can tell they are transgender or gender non-conforming.*

SUICIDE ATTEMPTS AND HIV

The prevalence of lifetime suicide attempts was higher among respondents who indicated being HIV positive (see Table 10).

Table 10: Lifetime suicide attempts by HIV status

	Have Attempted Suicide	
HIV Status	Frequency	Row %
Positive	**84**	**51%**
Negative	**2260**	**40%**
Don't know	**217**	**41%**

$\chi^2_3 = 7.7, p < .021$

SUICIDE ATTEMPTS AND DISABILITIES

Respondents who indicated having a disability (physical, learning, mental health) that substantially affects a major life activity reported a higher prevalence of lifetime suicide attempts than those without a disability (57% v.33%, = 320.8, p < .001). As seen in Table 11, the highest prevalence of suicide attempts (65%) was reported by those who described their disability as related to a mental health condition. *It should be noted that this was the only item on the NTDS that specifically asked about mental health, and was answered only by respondents who indicated in the previous question that they had a disability that substantially affects a major life activity.*

Table 11: Lifetime suicide attempts by type of disability

	Have Attempted Suicide	
Disability	Frequency	Row %
Physical condition	**984**	**56%**
Learning disability	**493**	**55%**
Mental health condition	**1220**	**65%**

As shown in Table 12, among respondents who indicated having a mental health disability, at least 54 percent of respondents in each of the six main gender identity categories reported a lifetime suicide attempt. In all gender identity categories, respondents who did not indicate having a mental health disability were found to have significantly lower prevalence of lifetime suicide attempts than those in the same category who had such a disability.[10] Among those who did not indicate having a mental health disability, the prevalence of suicide attempts ranged from a high of 40 percent among trans men (FTM) and female-assigned cross-dressers, to a low of 17 percent among male-assigned cross-dressers.

Table 12: Lifetime suicide attempts by gender identity and mental health disability

	Have Attempted Suicide	
Gender Identity	MH Disability	No MH Disability
Trans Women / MTF	**360 (67%)**	**891 (37%)**
Trans Men / FTM	**263 (67%)**	**559 (40%)**
Cross-dresser (male-assigned)	**39 (54%)**	**108 (17%)**
Cross-dresser (female-assigned)	**27 (56%)**	**57 (40%)**
GNC / Genderqueer (male-assigned)	**18 (62%)**	**43 (33%)**
GNC / Genderqueer (female-assigned)	**82 (59%)**	**130 (29%)**

Among respondents who reported having a disability due to a mental health condition, the prevalence of lifetime suicide attempts was not substantially affected by whether they could be recognized by others as transgender/gender non-conforming (see Table 13).

Table 13: Lifetime suicide attempts by perceived recognition by others and mental health disability

	Have Attempted Suicide	
People can tell I'm transgender/GNC:	MH Disability	No MH Disability
Always, most of the time, sometimes	**431 (64%)**	**886 (36%)**
Occasionally, never	**356 (66%)**	**896 (33%)**

10 *Respondents who did not indicate having a mental health disability included those who reported no disability of any kind and those who reported a disability related to conditions other than mental health.*

SUICIDE ATTEMPTS AND STRESSORS RELATED TO ANTI-TRANSGENDER BIAS

In a series of analyses, we looked at the relationship between suicide attempts and a range of stressful life experiences that NTDS respondents described as occurring due to anti-transgender bias, which we refer to collectively as "stressors related to anti-transgender bias." These included experiences of rejection, discrimination, victimization, and violence that occurred within a number of specific contexts, as described below.

Table 14: Lifetime suicide attempts by experiences of housing discrimination and other housing-related problems

	Have Attempted Suicide	
Housing experience	Frequency	Row %
I moved into less expensive home/ apartment	849	54%
I became homeless	487	69%
I was evicted	254	63%
I was denied home/apartment	449	62%
I had to move back with family/friends	614	62%
I had to find a temporary place to sleep	652	64%
I had sex to stay with people/pay rent	281	64%

Housing

Relative to the prevalence of lifetime suicide attempts reported by NTDS respondents as a whole (41%), those who reported experiencing housing discrimination or other housing-related problems because of anti-transgender bias were found to have an elevated prevalence of lifetime suicide attempts (see Table 14). The highest suicide attempt prevalence (69%) was found among those who became homeless due to anti-transgender bias.

School

A higher than average prevalence of lifetime suicide attempts was consistently found among NTDS respondents who reported that they had been harassed, bullied, or assaulted in school by other students and/ or teachers due to anti-transgender bias (see Table 15). Among such respondents, suicide attempt prevalence varied little according to the level of school at which the victimization occurred. Consistently, suicide attempts were most frequently reported by those who had experienced school-based violence in the form of physical or sexual assault.

Work

As shown in Table 16, an elevated prevalence of lifetime suicide attempts was consistently found among respondents who reported negative work experiences related to anti-transgender bias. Prevalence was found

Table 15: Lifetime suicide attempts by experiences of school victimization

	Have Attempted Suicide	
	Frequency	Row %
Elementary School		
Harassed or Bullied	360	50%
Physically Assaulted	191	63%
Sexually Assaulted	46	73%
Jr. High/Middle School		
Harassed or Bullied	477	50%
Physically Assaulted	255	64%
Sexually Assaulted	80	73%
High School		
Harassed or Bullied	659	52%
Physically Assaulted	292	68%
Sexually Assaulted	104	69%
College		
Harassed or Bullied	424	54%
Physically Assaulted	71	68%
Sexually Assaulted	45	78%

Table 16: Lifetime suicide attempts by negative work experiences

	Have Attempted Suicide	
Work experience	Frequency	Row %
I did not get a job I applied for	987	53%
I am or have been under-employed	977	50%
I was removed from direct contact with clients, customers or patients	491	57%
I was denied a promotion	553	56%
I lost my job	660	55%
I was harassed by someone at work	1259	51%
I was the victim of physical violence by someone at work	209	65%
I was the victim of sexual assault by someone at work	176	64%
I was forced to present in the wrong gender to keep my job	806	54%
I was not able to work out a suitable bathroom situation with my employer	500	58%
I was denied access to appropriate bathrooms	546	59%
I was asked inappropriate questions about my transgender or surgical status	1019	55%
I was referred to by the wrong pronoun, repeatedly and on purpose	1155	56%
Supervisors or coworkers shared information about me that they should not have	1193	54%

to be especially high among those who said they had experienced work-based physical violence (65%) or sexual assault (64%).

In addition, respondents who indicated having engaged in sex work reported a high prevalence of lifetime suicide attempts. A separate question on the NTDS identified 694 respondents who had engaged in sex work for income. Among those in this group who answered the question on ever attempting suicide (n=674), 407 or 60 percent reported a lifetime suicide attempt.

Family and Friends

A lower than average prevalence of lifetime suicide attempts (33%) was found among respondents who said their family relationships had remained strong after coming out (see Table 17). In contrast, the prevalence of suicide attempts was elevated among respondents who reported experiencing rejection, disruption, or abuse by family members or close friends because of anti-transgender bias. Again, lifetime suicide attempts were reported most frequently by those who were victims of violence by a family member, with 65 percent of such respondents indicating having attempted suicide.

Table 17: Lifetime suicide attempts by experiences with family and friends

	Have Attempted Suicide	
Experience with family and friends	Frequency	Row %
Family is as strong today as when I came out	747	33%
Family relationships are improving after coming out	1171	42%
Relationship with my spouse or partner ended	894	49%
Ex limited or stopped relationship with children	257	55%
Court/judge limited/stopped relationship with children	108	58%
Children chose not to speak/spend time with me	272	50%
Parents/family chose not to speak/ spend time with me	994	57%
Victim of domestic violence by a family member	490	65%
Lost close friends	1552	52%

Medical Care

Respondents who reported having negative experiences related to obtaining medical care as a transgender or gender non-conforming person also reported an elevated prevalence of lifetime suicide attempts (see Table 18). Sixty percent of respondents who said they had been refused medical care because of anti-transgender bias reported a lifetime suicide attempt.

Table 18: Lifetime suicide attempts by experiences with medical care

	Have Attempted Suicide	
Experience with medical care	Frequency	Row %
I have postponed or not tried to get needed medical care when I was sick or injured because I could not afford it	1354	53%
I have postponed or not tried to get checkups or other preventive medical care because I could not afford it	1371	51%
I have postponed or not tried to get needed medical care when I was sick or injured because of disrespect or discrimination from doctors or other healthcare providers	827	56%
I have postponed or not tried to get checkups or other preventive medical care because of disrespect or discrimination from doctors or other healthcare providers	927	54%
A doctor or other provider refused to treat me because I am transgender/ gender nonconforming	582	60%
I had to teach my doctor or other provider about transgender/gender non-conforming people in order to get appropriate care	1275	51%

Law Enforcement

Respondents who reported having negative experiences with law enforcement officers commonly reported having attempted suicide (see Table 19). An especially high prevalence of lifetime suicide attempts was found among those who had experienced police violence in the form of physical or sexual assault.

Lifetime suicide attempts were less prevalent among respondents who said they had been generally treated with respect by law enforcement personnel. As seen in Table 20, decreasing level of comfort in seeking help from the police was found to be significantly related to higher prevalence of lifetime suicide attempts.

Table 19: Lifetime suicide attempts by experiences with law enforcement

	Have Attempted Suicide	
Experience with law enforcement	Frequency	Row %
Officers have generally treated me with respect	963	41%
Officers have generally treated me with disrespect	593	57%
Officers have harassed me	466	61%
Officers have physically assaulted me	122	60%
Officers have sexually assaulted me	60	70%

Table 20: Lifetime suicide attempts by comfort level seeking help from police

	Have Attempted Suicide	
Comfort level seeking help from police	Frequency	Row %
Very comfortable	356	33%
Somewhat comfortable	416	36%
Neutral	466	38%
Somewhat uncomfortable	670	41%
Very uncomfortable	666	52%

$\chi^2_4 = 108.4$, $p < .001$

Nature of the Relationship between Stressors and Suicide Attempts

The survey data did not allow us to determine a direct causal relationship between experiencing rejection, discrimination, victimization, or violence, and lifetime suicide attempts. Drawing on minority stress theory (Meyer, 2003) and recent research on the development of suicidal thinking and behavior following victimization (Espelage & Holt, 2013; Klomek et al., 2011), we hypothesized that mental health factors may be an important factor in helping to explain the strong and consistent relationship observed between stressors related to anti-transgender bias and lifetime suicide attempts among NTDS respondents. Although the limited NTDS data related to mental health precluded a full testing of this hypothesis, many specific experiences of rejection, discrimination, victimization, and violence were found to be significantly related to having a disabling mental health condition (see Table 21). Examples included a weakening of family relationships after coming out as transgender, being a victim of violence by a family member, becoming homeless after coming out, being harassed at work, and being refused medical care because of anti-transgender bias. The significant relationship between such stressors and mental health disability, coupled with our earlier findings of the relationship between mental health disability and lifetime suicide attempts (Tables 11-13), suggests that mental health factors and stressors interact to produce a marked vulnerability to suicidal behavior in transgender and gender non-conforming individuals.

Table 21: Relationship between specific stressors related to gender identity and mental health disability

Experience	MH Disability	No MH Disability	χ^2_1*
Family is not as strong as before I came out	614 (61%)	2218 (54%)	17.25
Victim of violence by a family member	235 (30%)	523 (17%)	72.98
Became homeless after coming out	236 (28%)	485 (16%)	67.88
Harassed at work	593 (62%)	1873 (47%)	70.89
Was refused medical treatment	252 (24%)	721 (18%)	23.86

*$p < .001$

QUALITY OF LIFE

The prevalence of lifetime suicide attempts was lowest (31%) among respondents who felt that being transgender or gender non-conforming had not markedly affected the quality of their lives (see Table 22). Those who felt that their life was "much worse" because they were transgender or gender non-conforming had a much higher prevalence of suicide attempts (56%).

Table 22: Lifetime suicide attempts by perceived impact of transgender/gender non-conforming status on quality of life

	Have Attempted Suicide	
Because I am Trans/GNC, life in general is...	Frequency	Row %
Much improved	570	39%
Somewhat improved	379	37%
The same	255	31%
Somewhat worse	316	42%
Much worse	135	56%
Some ways better, some ways worse	918	45%
		$\chi^2 = 75.6, p < .001$

DISCUSSION

The most striking finding of our analysis was the exceptionally high prevalence of lifetime suicide attempts reported by NTDS respondents. In looking at the percentages reporting a lifetime attempt within various subgroups of the overall sample, we repeatedly found "lows" in the range of 30 to 40 percent, while the "highs" exceeded 50 or even 60 percent. Even taking into consideration that some degree of over-reporting likely occurred in the survey, the results suggest these transgender and gender non-conforming respondents have experienced exceptionally high levels of suicidality. Notwithstanding the several significant limitations of the NTDS data that we noted at the outset of this report, our analysis suggests some tentative findings related to risk and protective factors for suicide attempts among transgender and gender non-conforming adults. Two interrelated risk factors appear to be most strongly related to suicidal behavior among transgender and gender non-conforming adults: rejection, discrimination, victimization, and violence related to anti-transgender bias and serious mental health conditions. In this study, we found a markedly high prevalence of lifetime suicide attempts among respondents who reported experiencing stressors related to anti-transgender bias, and among those who reported having a mental health condition that substantially affects a major life activity. In addition, our analyses suggest that these two sets of risk factors are closely related.

Significantly higher prevalence of lifetime suicide attempts was found among respondents who were classified as trans women (MTF) and trans men (FTM), based on their primary self-identifications. Since trans women and trans men are the groups within the overall transgender population most likely to need surgical care for transition, this may help to explain the high prevalence of lifetime suicide attempts we found among respondents who said they have had transition-related surgical procedures, compared to those who said they did not want transition-related surgery. Comparably high, or higher, prevalence of suicide attempts were found among respondents who said that they someday wanted FTM genital surgery, hysterectomy, or phalloplasty, suggesting that desiring transition-related health care services and procedures but not yet having them may exacerbate respondents' distress at the incongruence between their gender identity and physical appearance. It is also possible that elevated prevalence of lifetime suicide attempts may be due

"In looking at the percentages reporting a lifetime attempt within various subgroups of the overall sample, we repeatedly found "lows" in the range of 30 to 40 percent, while the "highs" exceeded 50 or even 60 percent."

to distress related to barriers to obtaining transition-related health care, such as a lack of insurance coverage, inability to afford the procedures, or lack of access to providers. These findings may also be related to the higher rates of reported lifetime suicide attempts among those who have undergone transition-related surgery. As has been noted, the NTDS instrument did not include questions about the timing of suicide attempts relative to transition, and thus we were unable to determine whether suicidal behavior is significantly reduced following transition-related surgeries, as some clinical studies have suggested (Dixen et al., 1984; De Cuypere et al., 2006).

Respondents' perceptions that people can always or sometimes tell they are transgender or gender non-conforming were likewise found to be associated with high prevalence of lifetime suicide attempts. Similarly, higher suicide attempt prevalence was found among respondents who said they tell "everyone" they are transgender or gender non-conforming. In this analysis, we were not able to precisely identify how perceived recognition by others or disclosure of one's transgender status contributes to suicide risk, although our overall results suggest that recognition by others as transgender or gender non-conforming, whether actual or perceived, significantly increases the likelihood of rejection and discrimination, which are clearly related to increased risk of suicidal behavior.

In contrast, prevalence of lifetime suicide attempts was found to be significantly lower among respondents, who described their gender identity as "part time as one gender and part time as another," which may suggest more selective disclosure and/or more limited perceived recognition by others of transgender or gender non-conforming status. This would be consistent with the findings of significantly lower prevalence of suicide attempts among respondents who said people can "never" tell they are transgender or gender non-conforming, and those who "never" tell anyone they are transgender or gender non-conforming. Collectively, these findings suggest that not being recognized by others as transgender or gender non-conforming may function as a protective factor for suicidal behavior. Conversely, one's *inability* to *not* be recognized as transgender or gender non-conforming may create added risk.

"Collectively, these findings suggest that not being recognized by others as transgender or gender non-conforming may function as a protective factor for suicidal behavior."

Importantly, our analyses suggest that the protective effect of non-recognition is especially significant for those on the trans feminine spectrum. For people on the trans masculine spectrum, however, our data suggest that this protective effect may not exist or, in some cases, may work in the opposite direction. Clearly, more research is needed to illuminate the mechanisms through which not being recognized by others as transgender or gender non-conforming, whether by not disclosing to others or not being perceived as such by others, reduces suicidal behavior among transgender and gender non-conforming people.

NEED FOR FUTURE STUDIES

Transgender people are estimated to constitute 0.3 percent of the U.S. population (Gates, 2011). Federally-sponsored population-based surveys are increasingly including measures of sexual orientation and gender identity, and the data from these surveys will certainly help to increase understanding of the characteristics and needs of the transgender population. It is unlikely, however, that population-based surveys will be able to explore the full range of issues that uniquely impact the well-being of transgender people, such as barriers to transition-related health care and the impact of discrimination due to anti-transgender bias. Thus, well-designed studies that specifically engage the transgender community will continue to be needed to identify and illuminate the health and mental health needs of transgender people, including access to appropriate health care services. In light of the clarity with which the NTDS data have identified suicidal behavior as a significant threat to the well-being of transgender and gender non-conforming people, it is recommended that future surveys that include these populations devote particular attention to careful measurement of suicidal behavior and suicide risk.

This study has identified several areas that are in particular need of further research. First, more research is needed into the timing of suicide attempts in relation to age and gender transition status. In regard to timing of suicide attempts and gender transition, some surveys and clinical studies have found that transgender people are at an elevated risk for suicide attempt during gender transition, while rates of suicide attempts decrease after gender transition (Whittle et al., 2007; DeCuypere et al., 2006; Transgender Equality Network Ireland, 2012). Further research is clearly needed on the occurrence of all aspects of self-harm behavior, including suicidal ideation, suicide attempts and non-suicidal self-injury, in relation to gender transition and barriers to transition. Such research would provide better insight into the factors that underlie suicidal thinking and behavior among transgender people, especially those who want to transition from one gender to another, and could serve as the basis for designing better interventions and suicide prevention services for this population.

Second, further research is needed to examine the interrelationship of rejection, discrimination, victimization, and violence related to anti-transgender bias and serious mental health conditions. In-depth studies using in-person interviews and clinical measures are also needed to determine the independent and combined effects of these two factors in creating a pathway to suicidal behavior in transgender and gender non-conforming populations. Such studies could not only provide the basis for better interventions, but could also underscore the need to address through public policy the high levels of rejection, discrimination, victimization, and violence experienced by transgender and gender non-conforming people.

Finally, prior studies have suggested that lack of disclosure and attempts to conceal sexual orientation contributes to lower levels of mental health for lesbian, gay and bisexual individuals (Meyer, 2003; Pachankis, 2007; Hatzenbuehler, 2009; Schrimshaw, Siegel, Downing & Parsons, 2013). Explanatory mechanisms that have been posited include the stress of constant vigilance and concern about being "outed," internalized homophobia, and loss of potential emotional support from others. Our findings suggest that non-disclosure may function differently for transgender and gender non-conforming people. As we have noted, one possible explanation is that limiting disclosure of transgender or gender non-conforming status reduces the likelihood of experiencing bias-related rejection, discrimination, victimization, and violence, which in turn, reduces the likelihood suicidal behavior. This appears to be an additional important area for future research.

References

Bertolote, J.M., & Fleischmann A. (2002). Suicide and psychiatric diagnosis: A worldwide perspective. *World Psychiatry, 1*(3): 181-5.

Bongiovi-Garcia, M.E., Merville, J., Almeida, M.G., Burke, A., Ellis, S., Stanley, B.H., et al. (2009). Comparison of clinical and research assessments of diagnosis, suicide attempt history and suicidal ideation in major depression. *Journal of Affective Disorders, 115*(1-2), 185-188.

Breslau, N., Davis, G.C., Andreski, P., & Peterson, E. (1991). Traumatic events and posttraumatic stress disorder in an urban population of young adults. *Archives of General Psychiatry, 48*(3), 216-222.

Clements-Nolle, K., Marx, R., Guzman, R., & Katz M. (2001). HIV prevalence, risk behaviors, health care use, and mental health status of transgender persons: Implications for public health intervention. *American Journal of Public Health, 91*(6), 915-921.

Clements-Nolle, K., Marx, R., & Katz, M. (2006). Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. *Journal of Homosexuality, 51*(3), 53-69.

DeCuypere, G., Elaut, E., Heylens, G., Van Maele, G., Selvaggi, G., T'Sjoen, G., Rubens, R., Hoebeke, P., Monstrey, S. (2006). Long-term follow-up: psychosocial outcome of Belgian transsexuals after sex reassignment surgery. *Sexologies, 15*, 126-133.

Dixen, J. M., Maddever, H., van Maasdam, J., & Edwards, P. W. (1984). Psychosocial characteristics of applicants evaluated for surgical gender reassignment. *Archives of Sexual Behavior, 13*(3), 269-276.

Espelage, D.L. & Holt M.K. (2013). Suicidal ideation and school bullying after controlling for depression and delinquency. *Journal of Adolescent Health, 53*, 527-531.

Gates, G. (2011). *How many people are lesbian, gay, bisexual, and transgender?* Williams Institute, UCLA School of Law, April 2011.

Grant, J.M., Mottet, L.A., Tanis, J., Harrison, J., Herman, J.L., & Keisling, M. (2011). *Injustice at Every Turn: A Report of the National Transgender Discrimination Survey*. Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force. Retrieved July 15, 2013, from http://www.thetaskforce.org/reports_and_research/ntds.

Grossman, A. H., & D'Augelli, A. R. (2007). Transgender youth and life threatening behaviors. *Suicide and Life Threatening Behavior, 37*(5), 527-537.

Harris, E.C., & Barraclough, B. (1997). Suicide as an outcome for mental disorders: A meta-analysis. *British Journal of Psychiatry, 170*, 205-228.

Hatzenbuehler, M.L. (2009). How does sexual minority stigma "get under the skin"? A psychological mediation framework. *Psychological Bulletin, 135*, 707-730.

Kenagy, G. P. (2005). Transgender health: Findings from two needs assessment studies in Philadelphia. *Health & Social Work, 30*(1), 19-26.

Kendler, K.S., Karkowski, L.M., & Prescott, C.A. (1999). Causal relationships between stressful life events and the onset of major depression. *American Journal of Psychiatry, 156*, 837-841.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry, 56*, 617-626.

Klomek, A.B., Kleinman, M., Altschuler, E., Marrocco, F., Amakawa, L., & Gould, M.S. (2011). High school bullying as a risk factor for later depression and suicidality. *Suicide and Life-Threatening Behavior, 41*, 501-516.

Lesage, A.D., Boyer, R., Grunberg, F., Vanier, C., Morrisette, R., Menardbuteau, C., et al. (1994). Suicide and mental disorders: A case control study of young men. *American Journal of Psychiatry, 151*, 1063-1068.

Maguen, S., & Shipherd, J. (2010) Suicide risk among transgender individuals. *Psychology & Sexuality 1*(1), 34-43.

Meyer, I.H. (2003). Prejudice, social stress, and mental health in lesbian, gay and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin, 129*, 674-697.

Nock, M.K., Hwang, I., Sampson, N.A., & Kessler, R.C. (2010). Mental disorders, comorbidity and suicidal behavior: Results from the National Comorbidity Survey Replication. *Molecular Psychiatry, 15*, 868-876.

Nock, M.K., & Kessler, R.C. (2006). Prevalence of and risk factors for suicide attempts versus suicide gestures: Analysis of the National Comorbidity Survey. *Journal of Abnormal Psychology, 115*(3), 616-623.

Pachankis, J.E. (2007). The psychological implications of concealing a stigma: A cognitive-affective-behavioral model. *Psychological Bulletin, 133*, 328-345.

Paul, J. P., Cantania, J., Pollack, L., Moskowitz, J., Canchola, J., Mills, T., et al. (2002). Suicide attempts among gay and bisexual men: Lifetime prevalence and antecedents. *American Journal of Public Health, 92*(8), 1338-1345.

Ploderl, M., Wagenmakers, E.J., Tremblay, P., Ramsay, R., Kralovec, K., Fartacek, C., et al. (2013). Suicide risk and sexual orientation: A critical review. *Archives of Sexual Behavior, 42*(5), 715-727.

Schrimshaw, E.W., Siegel, K., Downing, M.J., & Parsons, J.T. (2013). Disclosure and concealment of sexual orientation and the mental health of non-gay-identified behaviorally bisexual men. *Journal of Consulting and Clinical Psychology, 81*, 141-153.

Suominen, K., Henriksson, M., Suokas, J., Isometsa, E., Ostamo, A., & Lonnqvist, J. (1996). Mental disorders and comorbidity in attempted suicide. *Acta Psychiatrica Scandinavica, 94*, 234-240.

Tidemalm, D., Langstrom, M., Lichtenstein, P., & Runeson, B. (2008, November 18). Risk of suicide after suicide attempt according to coexisting psychiatric disorder: Swedish cohort study with long term follow-up. *British Medical Journal, 337*, a2205. DOI: http://dx.doi.org/10.1136/bmj.a2205

Transgender Equality Network Ireland. (2012). *Ireland's Trans Mental Health and Well-being Survey*. Dublin: Transgender Equality Network Ireland. Retrieved July 15, 2013, from http://www.teni.ie/suicide_in_trans_communities___new_data_from_the_mental_health__well_being_survey.

TransPULSE. (2010). Ontario's Trans Communities and Suicide: Transphobia is Bad for Our Health. *TransPULSE E-Bulletin, 1*(2): np. Retrieved July 15, 2013, from http://transpulseproject.ca/research/ontarios-trans-communities-and-suicide/

Whittle, S., Turner, L., & Al-Alami, M. (2007). *Endangered penalties: Transgender and transsexual people's experiences of inequality and discrimination*. The Equalities Review. Retrieved July 15, 2013, from http://www.pfc.org.uk/pdf/EngenderedPenalties.pdf.

Whittle, S., Turner, L., Combs, R., & Rhodes, S. (2008). *Transgender EuroStudy: Legal Survey and Focus on the Transgender Experience of Health Care*. Brussels, Belgium and Berlin, Germany: ILGA-Europe and TransGender Europe. Retrieved July 15, 2013, from http://tgeu.org/sites/default/files/eurostudy.pdf.

Xavier, J.M., Bobbin, M., Singer, B., & Budd, E. (2005). A Needs Assessment of Transgendered People of Color Living in Washington, DC. *International Journal of Transgenderism, 8*, (2-3), 31-47.

Xavier, J., Honnold, J. A., & Bradford, J. (2007). *The health, health-related needs, and lifecourse experiences of transgender Virginians*. Richmond: Virginia Department of Health.

About the authors

Ann P. Haas is Senior Director of Education and Prevention at the American Foundation for Suicide Prevention, where she studies suicide in high-risk populations and develops intervention and prevention initiatives. She received a Ph.D. in Sociology with an emphasis in health behavior from Fordham University.

Philip L. Rodgers is an Evaluation Scientist with the American Foundation for Suicide Prevention and manages the Best Practices Registry for Suicide Prevention in collaboration with the Suicide Prevention Resource Center. He holds a Ph.D. in Research and Evaluation Methodology from Utah State University.

Jody L. Herman is the Peter J. Cooper Public Policy Fellow and Manager of Transgender Research at the Williams Institute, UCLA School of Law. She holds a Ph.D. in Public Policy and Public Administration from The George Washington University.

Acknowledgements

The authors gratefully acknowledge Andrew Lane, Chair of the National Action Alliance for Suicide Prevention Task Force on LGBT Populations (2011-13), for initiating this project and providing ongoing leadership, support, and critical input. We thank Kellan Baker, Jack Harrison-Quintana, Mara Keisling, Ilan Meyer, Brad Sears, and Jill Harkavy-Friedman for their thoughtful reviews of the report. We also thank Erin Fitzgerald, Sheila Nezhad, and Becky Mengel Freund for their assistance with the final report. We also thank the National Gay and Lesbian Task Force and the National Center for Transgender Equality for the use of the NTDS dataset.

For more information, contact:

American Foundation for Suicide Prevention
120 Wall Street
29th Floor
New York, NY 10005-0056
T (212)363-3500
pr@afsp.org
www.afsp.org

The Williams Institute
UCLA School of Law
Box 951476
Los Angeles, CA 90095-1476
T (310)267-4382
F (310)825-7270
williamsinstitute@law.ucla.edu
http://williamsinstitute.law.ucla.edu

Review Article

Suicide and Suicidal Behavior among Transgender Persons

H. G. Virupaksha, Daliboyina Muralidhar, Jayashree Ramakrishna[1]

ABSTRACT

Background: Suicide rate and suicidal tendencies among transgender persons are considerably high compared to general population. Hence, this review is an attempt to understand the issues around the suicide and suicidal behavior among transgender persons. **Methodology:** The literature search conducted using three sources, i.e., electronic databases (PubMed, ProQuest, Google Scholar, PsycInfo), manual search (library catalog), and gray literature (consultation with experts). **Results:** The suicide attempt rate among transgender persons ranges from 32% to 50% across the countries. Gender-based victimization, discrimination, bullying, violence, being rejected by the family, friends, and community; harassment by intimate partner, family members, police and public; discrimination and ill treatment at health-care system are the major risk factors that influence the suicidal behavior among transgender persons. **Conclusion:** In spite of facing a number of hardships in their day-to-day life, the transgender community holds a number of resiliency factors. Further, this community needs to be supported to strengthen their resiliency factors and draw culturally sensitive and transgender-inclusive suicide prevention strategies and increase protective factors to tackle this high rate of suicidality.

Key words: *Suicidal behavior, suicide, transgender persons*

INTRODUCTION

Suicide is a complex behavior which results from the complicated interaction of biological, psychological, cognitive, and environmental factors.[1] Suicide rate and suicidal tendencies among transgender community have been reported to be high compared to general population.[2-5] The suicide rate among transgender individuals in India is about 31%, and 50% of them have attempted suicide at least once before their 20th birthday and 40–50 persons commit suicide every year in Karnataka state alone.[6] However, the exact prevalence of completed suicide among transgender persons remain undocumented; the gender-based discrimination has prevented them by obtaining education, livelihood, and housing because of which they are living in slums and have to resort to begging and sex work; this pitiful conditions lead them to

Access this article online	
Website: www.ijpm.info	Quick Response Code
DOI: 10.4103/0253-7176.194908	

How to cite this article: Virupaksha HG, Muralidhar D, Ramakrishna J. Suicide and suicidal behavior among transgender persons. Indian J Psychol Med 2016;38:505-9.

Departments of Psychiatric Social Work and [1]Mental Health Education, National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka, India

Address for correspondence: Mr. H. G. Virupaksha
Department of Psychiatric Social Work, National Institute of Mental Health and Neuro Sciences, Bengaluru - 560 029, Karnataka, India.
E-mail: virupaksha67@gmail.com

breakdown further and end their life in suicide.[6] The high prevalence of depression and suicidal tendencies among transgender persons seems to be highly influenced by societal stigma, lack of social support, HIV status and violence-related issues which require further thorough investigation and necessary mental health counseling, crisis management, addressing drug abuse, providing them livelihood opportunities, and so on as part of the intervention.[7]

METHODOLOGY

The literature search was carried out mainly using three sources, namely, search in electronic databases (PubMed, Google Scholar, PsycInfo, ProQuest), manual search (library catalog) at the library of the National Institute of Mental Health and Neuro Sciences (NIMHANS), and gray literature (consultation with experts). To extract the related studies, the search strategies (key words) used for both electronic database and manual search are "Transgender and Suicide," "Hijra and Suicide," "Sexual minorities and Suicide," transgender and Self-harm," "Transgender and Suicide Prevention," "Transgender and Suicide Prevention Intervention." The author selected 21 research studies including reports and documents as part of the search in electronic databases. These studies selected based on their relevance to the current title of the review and their availability with full text freely online.

As part of the manual search (library catalog), the author could get three dissertations relevant to the title of the review, submitted to NIMHANS. All these studies and dissertations are published or submitted between 2005 and 2015.

As part of gray literature, the author consulted the Director of Karnataka State Women Development Corporation, Bengaluru, the Key persons of nongovernment organizations (NGOs), i.e., Initiatives for Development Foundation (IDF), Sangama, Samara, Jeeva, and Aneka. The author consulted the key persons who gave oral consent and discussed the subject and note down the key points with their permission. The discussion mainly focused on the services available at these organizations for transgender persons which may influence the suicidal behavior of the transgender community directly or indirectly.

This review is part of an ongoing Ph.D research program which has obtained the approval by the NIMHANS Ethics Committee, No. NIMH/DO/ETHICS SUB-COMMITTEE 18th MEETING/2014, dated September 19, 2014.

RESULTS

Prevalence of suicide and suicidal behavior among transgender persons

The suicidal behavior and suicide attempt rates are reported to be significantly high among transgender persons compared to general population across the countries. Thirty-one percent of transgender persons in India end their life by committing suicide, and 50% of them have attempted for suicide at least once before their 20th birthday;[6] however, the exact prevalence of completed suicide among transgender persons in the country remain undocumented.[6] Forty-one percent of the transgender persons in the United States attempt for suicide at least once in their life.[8] In San Francisco, the prevalence of attempted suicide among transgender persons is 32%, among young age (<25 years) it is 50%.[9] Suicidality and self-harm behavior are serious problems among sexual minorities in Japan.[10] Transgender persons are at higher risk for suicidal ideation and suicide attempts at Virginia.[11] Fifty percent of transgender persons in Australia have attempted suicide at least once in their lives.[12] In England, 48% of the transgender young people had attempted suicide at least once in their lives.[13] The prevalence of suicide remains high among transgender persons irrespective of disclosing their transgender status to others and undergoing sex reassignment surgery.[8]

The self-harm behavior among sexual minority including transgender persons is equally serious and impactful as suicidality; the forms of self-harm committed by the respondents are cutting on the wrists and other areas of the arms, burning oneself, pouring gasoline on oneself but not igniting it, hanging oneself, breaking glasses, cups and other objects on one's head, fists and body, banging one's head against the wall, excessive drinking, eating and drug use, harmful sexual behavior, joining crime, street gang and violent activities to purposefully drop-out from the life and society, etc.[10]

Living conditions and salient features of the transgender persons

Rejection and lack of support from the families and society, gender dysphoria associated with extreme stressful experiences, child sexual abuse, early discontinuation of schooling, forced marriages, lack of livelihood opportunities, sexual and financial exploitation by the partner and police and rowdies, and lack of legal measures for protection are some of the characteristics of transgender persons.[14] About 62% of the transgender respondents are either have problems with their family members, or they do not

have any contact with their family members hence, they are living away from their families; they left their families because of ill-treatment, being not accepted as transgender persons and being felt embarrassed to live in the community; 56% of them have discontinued their education at either primary level or secondary level; majority of the transgender persons have opt sex industry and begging for their survival; 54% of them have the habit of consuming alcohol.[15] Fourteen percent of the transgender persons consulted mental health professionals for their gender dysphoria mostly because they were referred by the general physicians and rest of the respondents have sought help at traditional healers and transgender community leaders; 31% and 15% of the transgender persons are at high risk for tobacco and alcohol abuse, respectively, and 26% of them are have severe depression.[14] The transgender persons are forced to go out of their family and community; they are refused from education, employment and getting a house for rent; they stay at slums and many people under the same roof; they are ill-treated at health-care centers.[16] All the transgender persons are belong to lower socioeconomic status[17] have high level of perceived stigma,[18] have poor social support from family, friends and significant others, and their level of perceived stress is high.[19]

Risk factors of suicide and suicidal behavior among transgender persons

The studies have identified a number of risk factors for the high rates of suicide and suicidal behavior among transgender persons. The discrimination of the transgender persons in the society has prevented them from obtaining an education, job, and housing because of which they are living in slums or street and have to resort to begging and sex work;[10] this pitiful conditions have lead them to breakdown further and end their life in suicide.[6] Stigma, discrimination, and violence against transgender persons occur across multiple social and institutional contexts; they are verbally harassed, physical and sexually abused[11] and blackmailed by the police and rowdies; rejection, hateredness, verbal and physical abuse from friends and family members, stigmatization, refusal of services, and derogatory labeling at health-care system, etc., have lead them to lose interest in day-to-day activities; the risk of HIV and HIV status increase their psychological distress, and they express thoughts of committing suicide.[17] The suicidality among sexual minority community is associated with poor mental health condition in forms of mental illness,[20,21] psychological pain, emotion fatigue, and low self-esteem; life being hard, being confused about one's sexuality or difficulty in accepting it, not being able to disclose one's sexuality,[8] bullying, history of forced sex, gender-based discrimination, and victimization[9] and isolation are the other reasons for suicide among this population.[10] Lesbian, gay, bisexual, and transgender (LGBT) assault hate crimes at the neighborhood are an additional sociocontextual risk factors for suicidal ideation and attempts among sexual-minority adolescents.[22]

Transgender persons being in adolescents and being in their early 20 s and having history of suicide attempt,[21] those who work in the Bar, entertainment and sex industries, survivors of violence perpetrated by intimate partners or family members, are potentially in higher risk for suicidality.[10] Neither reporting the thoughts and behaviors of suicide and self-harm nor seeking help is common among sexual minorities.[10,11,14]

The final triggering factors

The psychological autopsy of the completed suicides among transgender persons has revealed that the factors such as break-up of love relationship initiated by the partner (64.3%), serious altercations with family members (14.3%), refusal of gender/sex reassignment by the family members (9.5%), financial problems (9.5%), being diagnosed with HIV positive in the past few days/ weeks (2.4%) have triggered the act of suicide among the victims.[14]

Resiliency factors and protective factors among transgender persons

The research studies have tried to explore the resiliency factors which are helping the transgender community to bounce back and continue living even with a number of hardships and adverse conditions in their day-to-day living. The transgender persons have overcome from the above-mentioned situations using at least one of the coping mechanisms or having certain personal qualities such as assertive communication, self-advocacy, spiritual coping, honesty, integrity, avoidance, physical or verbal aggression, help seeking, being future-oriented with having personal goals, being outspoken, strong, friendly, outgoing, independent, determination, etc.[23] The transgender persons who have income of >10,000 Dollars and being educated at higher level,[8] employed in the mainstream jobs other than sex work and begging,[19] optimistic, having perceived social support from family, emotional stability, and child-related concerns[24] have shown better self-esteem and resiliency level. Social support from family is found to be general protective factor which is associated with reduced risk for lifetime suicide attempts among transgender persons.[21]

Suicide prevention among transgender persons

The National Centre for Transgender Equality provides information on services available for suicide prevention in the United States that includes national suicide prevention helpline (24 × 7, toll free), LGBT

national hotline and the Trevor Project which provides telephonic, online, E-mail peer counseling, crisis intervention and online materials, and information about suicide and help.[8] The most of the programs related to LGBT youth under Trevor project deal with the issues such as school safety, health promotion, prevention of violence, harassment and discrimination, civil rights, peer education, emergency support, HIV and AIDS prevention and offer services in terms of training in life skills, enhancing peer relationships, connecting LGBT youth with supportive adults, helping parents and teachers to provide support to the LGBT youth, in-school workshops, educational materials, online educational resources for youth, and advocacy for public policy to reduce LGBT stigma.[25,26]

The NGOs such as Sangama, Samara, Jeeva, Aneka, IDF and the Karnataka Women Development Corporation of Bengaluru, Karnataka, the organization Sahodari in Tamil Nadu, The Humsafar Trust in Maharashtra, and so on organizations are providing services in terms of crisis intervention services, helpline services, clinical services, information and referral services, Legal and advocacy support, drop-in-centers, alternative employment services and financial assistance, soft-skills training, self-help group formation, assistance in availing ration card, election ID card etc., creating awareness through workshops, lobbying with media to create awareness among families to increase the acceptance of transgender children, telecasting programs through community radio, developing films and videos, screening the documentaries and films, self-esteem and resilience building services, organizing health camps to provide general health and mental health services, medical services, entertainment, competition and library services, organizing seminars, discussions, and so on services to the sexual minority community at locally.

Although these services explicitly do not focus on suicide prevention, they contribute enormously in enhancing the resiliency factors and protective factors among transgender persons.

Suicide prevention – the recommendations

The interventions and programs to enhance protective factors and resiliency factors are as important as programs for risk reduction; these interventions should be delivered through cultural competence approach[25,27] and should be more LGBT inclusive[26] which help an agency, system, or a professional to work effectively in cross-cultural situations.

The suicide prevention interventions and programs for all youth can also be implemented for LGBT individuals mainly in three settings, schools (suicide awareness curricula), communities (gate-keeper training) and health-care system (screening) and crisis centres, hotlines, and risk reduction which can include restricted access to lethal means, media training, and youth life-skills training also can be part of it.[7,25] Community awareness campaigns, discrimination and hate crime legislations, culturally and age appropriate suicide prevention interventions[28] including peer-based outreach, counseling and referrals,[9] targeting the institutions such as schools, family, community, health-care system,[25] police and judiciary,[11] effective treatment for symptoms of hopelessness, depression, conduct disorder, family-based interventions to enhance the support and reduce the victimization,[21] effective intervention in addressing high rates of HIV infection, multiple and complex high-risk behavior and comorbid conditions,[27] addressing sociocultural factors such as LGBT assault hate crimes at the neighborhood[22] providing educational and resource materials on LGBT suicide to the LGBT organizations and encourage these organizations to consider suicide prevention at their organizations' mission and activities,[26] all these would help in achieving increased societal acceptance of the transgender community and decreased gender-based prejudice and also in the promotion of mental health and reduction of suicidal risk among transgender community.

CONCLUSION

The current review covers research studies from electronic database and manual search and also supplements information with gray literature. The review has included important studies conducted across the countries and through more light on issues and situations surrounded suicidality and suicidal behavior among transgender persons, and the efforts are taken to address the same across the countries and in the Indian context. The transgender community is highly vulnerable for suicidality and suicidal behavior which is a challenging phenomena for the governments and organizations globally. However, the countries like the United States are trying to address the same at national level but in the Indian context, a lot of ground work should happen. The involvement of government, policy, institutions, organizations, public, along with the involvement of transgender community is required.

The transgender community is one of the difficulties to reach population having its own cultural background requires understanding and interventions with culture-specific, sensitive, and transgender-inclusive approach. The review recommends the interventions to be drawn simultaneously for suicide risk reduction and enhance the protective factors and resiliency factors at the same time.

Acknowledgments

The authors are very much thankful to the key informants of the NGOs and the Director of Karnataka State Women Development Corporation, Bengaluru, who cooperated to share the information and support this study.

Financial support and sponsorship

This article is part ongoing Ph.D research work and the study has been funded by University Grants Commission as part of Junior Research Fellowship.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Education-Bureau. An eBook on Student Suicide for Schools: Early Detection, Intervention & Postvention (EDIP): Educational Psychology Service Section, School Administration and Support Division, Education Bureau; 2011. Available from: http://www.edb.gov.hk/attachment/en/student-parents/crisis-management/about-crisis-management/EDIP-e.pdf. [Last accessed on 2015 Jan 01].
2. Cochran SD, Mays VM. Lifetime prevalence of suicide symptoms and affective disorders among men reporting same-sex sexual partners: Results from NHANES III. Am J Public Health 2000;90:573-8.
3. Proctor CD, Groze VK. Risk factors for suicide among gay, lesbian, and bisexual youths. Soc Work 1994;39:504-13.
4. Remafedi G, Farrow JA, Deisher RW. Risk factors for attempted suicide in gay and bisexual youth. Pediatrics 1991;87:869-75.
5. Russell ST, Joyner K. Adolescent sexual orientation and suicide risk: Evidence from a national study. Am J Public Health 2001;91:1276-81.
6. Transgender Suicide Rates Continue to Rise. The Soft Copy-An IIJNM Web Publication; 2012. Available from: http://www.thesoftcopy.in/archive/softcopy_2012_13/06_12_12_romana_suicide.html. [Last accessed on 2015 Jan 01].
7. United Nations Development Program. Hijras/Transgender in India: HIV, Human Rights And Social Exclusion TG Issue Brief. United Nations Development Programme (UNDP), India; 2010.
8. NCTE. Preventing Transgender Suicide Washington: National Center for Transgender Equality; 2010. Available from: http://www.transequality.org/PDFs/NCTE_Suicide_Prevention.pdf. [Last accessed on 2015 Jan 01].
9. Clements-Nolle K, Marx R, Katz M. Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. J Homosex 2006;51:53-69.
10. DiStefano AS. Suicidality and self-harm among sexual minorities in Japan. Qual Health Res 2008;18:1429-41.
11. Testa RJ, Sciacca LM, Wang F, Hendricks ML, Goldblum P, Bradford J, *et al.* Effects of violence on transgender people. Prof Psychol Res Pr 2012;43:452.
12. Rosenstreich G. LGBTI People Mental Health and Suicide. National LGBTI Health Alliance; 2011.
13. Nuno N, Elizabeth P, Allan T, Ian R. The RaRE Research Report: LGB & T Mental Health – Risc and Resilience Explored. London, England: PACE – Project for Advocacy Counselling and Education; 2015.
14. Budania SK. Rapid Assessment of Mental Health Needs and Planning of Mental Health Services for the Transgender (Hijras) Community. Bangalore: National Institute of Mental Health and Neuro Sciences (NIMHANS); 2012.
15. Sridevi Sivakami PL, Veena KV. Social Exclusion have a negative impact on the health of the Transgender. Indian Streams Res J 2011;1:1-4.
16. A Study on General Welbeing of Male to Female Transgenders Living in Chennai; 2010. Available from: http://www.counselingchennai.com/yahoo_site_admin/assets/docs/Full_Paper-A_STUDY_ON_GENERAL_WELLBEING_OF_MALE_TO_FEMALE_TRANSGENDERS_LIVING_IN_CHENNAI.22205823.pdf. [Last accessed on 2015 Jan 01].
17. Chakrapani V, Newman PA, Shunmugam M, McLuckie A, Melwin F. Structural violence against kothi-identified men who have sex with men in Chennai, India: A qualitative investigation. AIDS Educ Prev 2007;19:346-64.
18. Reni T. Perceived Stigma, Social Relationship and Quality Of Life Among Transgenders in Bangalore [Dissertation]. Bangalore: NIMHANS, Institute of National Importance; 2010.
19. Virupaksha HG. Psycho-Social Issues of Trnasgender People in Bangalore. Bangalore: National Institute of Mental Health and Neuro Sciences (NIMHANS); 2013.
20. Mustanski BS, Garofalo R, Emerson EM. Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. Am J Public Health 2010;100:2426-32.
21. Mustanski B, Liu RT. A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. Arch Sex Behav 2013;42:437-48.
22. Duncan DT, Hatzenbuehler ML. Lesbian, gay, bisexual, and transgender hate crimes and suicidality among a population-based sample of sexual-minority adolescents in Boston. Am J Public Health 2014;104:272-8.
23. White MG. Resiliency Factors Among Transgender People of Color. 2013.
24. Moody C, Smith NG. Suicide protective factors among trans adults. Arch Sex Behav 2013;42:739-52.
25. Suicide Prevention Resource Center. Suicide Risk and Prevention for Lesbian, Gay, Bisexual, and Transgender Youth. Newton, MA: Education Development Center, Inc.; 2008.
26. Haas AP, Eliason M, Mays VM, Mathy RM, Cochran SD, D'Augelli AR, *et al.* Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. J Homosex 2011;58:10-51.
27. Reback CJ, Shoptaw S, Downing MJ. Prevention case management improves socioeconomic standing and reduces symptoms of psychological and emotional distress among transgender women. AIDS Care 2012;24:1136-44.
28. Maguen S, Shipherd JC, Harris HN. Providing culturally sensitive care for transgender patients. Cogn Behav Pract 2005;12:479-90.

Suicide and Life-Threatening Behavior 47 (4) August 2017

DOI: 10.1111/sltb.12289

Suicidality, Self-Harm, and Body Dissatisfaction in Transgender Adolescents and Emerging Adults with Gender Dysphoria

Claire M. Peterson, PhD, Abigail Matthews, PhD, Emily Copps-Smith, MA, and Lee Ann Conard, RPh, DO, MPH

Prevalence of suicide attempts, self-injurious behaviors, and associated psychosocial factors were examined in a clinical sample of transgender (TG) adolescents and emerging adults (n = 96). Twenty-seven (30.3%) TG youth reported a history of at least one suicide attempt and 40 (41.8%) reported a history of self-injurious behaviors. There was a higher frequency of suicide attempts in TG youth with a desire for weight change, and more female-to-male youth reported a history of suicide attempts and self-harm behaviors than male-to-female youth. Findings indicate that this population is at a high risk for psychiatric comorbidities and life-threatening behaviors.

Efforts to reduce discrimination and facilitate the support of transgender youth have grown in recent years. Rising media coverage highlighting challenges faced by transgender youth, increased availability of medical and psychological treatment resources, improved insurance coverage of hormone treatments and transition procedures, and the release of guidelines for medical treatment specific to transgender individuals signify landmark steps in improving care for this population (American Psychological Association [APA], 2015; Coleman et al., 2011; Hembree et al., 2009; Vance, Ehrensaft, & Rosenthal, 2014). Despite these positive steps, transgender youth continue to be faced with extant challenges, including social discrimination, marginalization, and poor access to care (Grossman & D'Augelli, 2007; White Hughto, Reisner, & Pachankis, 2015).

In the face of identified barriers, transgender youth are at heightened risk for negative psychosocial outcomes, with a two- to threefold greater risk of depression, anxiety, suicide ideation, self-harm, and inpatient and outpatient mental health care utilization (Reisner et al., 2015). Alarmingly, one quarter of all transgender youth have attempted suicide and over one third have engaged in self-injurious behaviors (Dickey, Reisner, & Juntunen, 2015; Grossman & D'Augelli, 2007; Skagerberg, Parkinson, & Carmichael, 2013), emphasizing the grave need for improved understanding of the specific vulnerabilities in these at-risk adolescents.

Claire M. Peterson and Abigail Matthews, Division of Behavioral Medicine and Clinical Psychology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA; Emily Copps-Smith, Department of Psychology, Xavier University, Cincinnati, OH, USA; Lee Ann Conard, Division of Adolescent and Transition Medicine, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA.

Address correspondence to C. M. Peterson, Division of Behavioral Medicine and Clinical Psychology, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, Cincinnati, OH 45229; E-mail: claire.peterson@cchmc.org

Although few studies have pinpointed suicidal risk factors in transgender youth, existing data support gender dysphoria, parental verbal and physical abuse, weight concerns, and beliefs that others negatively perceive their appearance as positive predictors (Grossman & D'Augelli, 2007; Simons, Schrager, Clark, Belzer, & Olson, 2013). The latter two predictors emphasize the role of weight and body image concerns on risk for suicide in these adolescents.

It is clear that body dissatisfaction is a problem for transgender individuals, particularly those meeting diagnostic criteria for gender dysphoria. A core tenet of gender dysphoria is discontent with one's biological sex and the desire to appear different from one's assigned sex at birth. Consistently, previous research has established that transgender adults have higher levels of body dissatisfaction, greater weight and shape concerns, and more disordered eating than their cisgender counterparts (Ålgars, Alanko, Santtila, & Sandnabba, 2012; Khoosal, Langham, Palmer, Terry, & Minajagi, 2009; Witcomb et al., 2015). The data on weight status of transgender individuals are inconsistent. One large population-based study found transgender adults less likely to be overweight than their cisgender peers (Conron, Scott, Stowell, & Landers, 2012). However, Olson, Schrager, Belzer, Simons, and Clark (2015) observed that the majority of youth seeking care in an outpatient transgender clinic were overweight, with mean body mass indexes (BMIs) of 24.95 and 26.54 kg/m^2 in a sample of female-to-male (FTM) and male-to-female (MTF) adolescents, respectively. In a college-aged sample, transgender individuals were more likely to be underweight or obese than within a normal weight range (VanKim et al., 2014). Of note, although BMI is a commonly used metric to determine healthy weight, it has clinical limitations. BMI is a marker of body fat because it assesses excess weight, not excess body fat. Thus, BMI may be influenced by other factors such as age, sex, ethnicity, and muscle mass (Center for Disease Control and Prevention [CDC], n.d.). Further research is needed to clarify whether or not transgender adolescents have elevated BMIs and the potential relationships to weight concerns, suicide attempts, and self-harm behavior.

In summary, while knowledge regarding issues faced by transgender individuals is growing, there remains a paucity of research focusing on vulnerabilities specific to poor psychosocial outcomes in transgender youth. To our knowledge, there are no studies examining suicidality, body image, weight and shape concerns, eating disorder symptoms, and BMI in transgender youth. Preliminary findings from qualitative data and case reports suggest higher prevalence of body image concerns and eating disorder symptoms in transgender youth (Couturier, Bharadwaj, Findlay, & Johnson, 2015; VanKim et al., 2014); however, larger scale studies are needed to examine the prevalence of weight and shape concerns as well as suicidal behaviors in this population.

In the present study we sought to examine the relationship between body dissatisfaction and BMI and whether these were associated with suicidal and self-harm behaviors in transgender youth. Given previous findings, it was hypothesized that higher BMI and the presence of body dissatisfaction and drive for weight loss would be associated with a history of suicide attempts and self-harm behavior.

METHODS

Participants

Data were obtained from a retrospective chart review of 96 transgender adolescents and emerging adults (aged 12–22) presenting with gender dysphoria at Cincinnati Children's Hospital Medical Center Transgender Clinic. The transgender clinic opened in 2013 and has served more than 475 patients between the ages of 5 and 24 years since the clinic opened. The clinic offers a number of services including

puberty suppression, gender-affirming hormone treatment, menstrual suppression, psychotherapy, and referrals for voice and communication training, legal services, and surgical intervention. Chart review was conducted on new evaluation appointments for all adolescents and emerging adults in this age range meeting diagnostic criteria for gender dysphoria, assessed between July 2013 and June 2015. The institutional review board at Cincinnati Children's Hospital Medical Center approved this study.

Measures

A psychosocial assessment was completed at the outset of each adolescent and young adult's new evaluation appointment. Youth were questioned in the following domains and responded in a forced-choice format: drug/alcohol use (yes, no), history of legal problems/arrests (yes, no), gang involvement (yes, no), involved in fights (yes, no), history of being bullied (yes, no), feels safe at home (yes, no), history of suicide attempt (yes, no), history of cutting or other self-injurious behaviors (yes, no), body image concerns (too thin, just right, too big), interest in weight change (desires loss, desires gain, none), and history of involvement in counseling (yes, no). Height and weight were also measured to calculate the BMI for each participant. Chart review was conducted to determine comorbid diagnoses, all of which were diagnosed by a clinical psychologist or social worker.

Procedure

Psychosocial assessments were administered by the adolescent medicine physician at the initial evaluation. Each question was verbally presented and participants were provided with response choices (e.g., "Would you describe your body as too thin, just right, or too big?"). All responses were immediately recorded in the electronic medical record. Caregivers were not present during the assessment. Adolescents with mental health concerns met with the transgender clinic social worker and/or received a mental health referral for outpatient care. Individuals who endorsed acute suicidality were escorted to the emergency department for a safety evaluation.

RESULTS

Descriptives

Our sample included 96 adolescents and emerging adults with a mean age of 17.1 years ($SD = 2.3$) presenting to a transgender clinic with gender dysphoria (54 FTM, 31 MTF, 15 nonbinary/gender fluid). Study participants were all interviewed during their initial visit in the transgender clinic with the adolescent medicine physician, and thus they had not yet begun gender-affirming transition (e.g., puberty blockers). The youth in our sample indicated a history of bullying (62.5%), involvement in physical fights (19.3%), gang involvement (10.4%), grade repetition (17.1%), history of school suspension or expulsion (23.1%), feeling mostly sad all of the time (12.8%), and feeling unsafe at home (10.3%). There were no differences in terms of gender identify on any of these questions except for feeling unsafe at home with FTM youth endorsing feeling unsafe at home more frequently as compared to MTF youth ($\chi^2 = 13.90$, $p < .01$). A total of 27 youth (30.3%) in our sample reported having a history of suicide attempt, and 41.8% reported a history of self-injurious behaviors. There were no differences in terms of age and history of self-injurious behaviors. Participants who endorsed a history of suicide attempt were significantly older (mean age of 17.96 vs. 16.61) as compared to those who did not endorse a history of suicide attempt ($t = -2.62, p < .05$).

Over half of our sample (58%) had at least one additional co-occurring psychiatric diagnosis beyond gender dysphoria ($n = 56$), while 25% of our sample had two

TABLE 1
Comorbid Psychiatric Diagnoses

Diagnosis	Frequency of sample (n = 96)	Percent of sample (n = 96)
Any co-occurring psychiatric diagnosis	56	58
2 co-occurring psychiatric diagnoses[a]	24	25
3 or more psychiatric diagnoses[b]	15	16
Depressive disorder	36	38
Attention deficit hyperactivity disorder	12	13
Generalized anxiety disorder	15	16
Anxiety disorder not otherwise specified	11	11
Oppositional defiant disorder/disruptive behavior disorder	4	4
Social anxiety disorder	6	6
Bipolar I disorder	5	5
Eating disorder	5	5
Posttraumatic stress disorder	4	4
Autism spectrum disorder	3	3
Schizophrenia/psychotic disorder	3	3
Tic disorder	2	2
Borderline intellectual functioning	2	2
Substance use disorder	2	2
Conversion disorder	1	1
Trichotillomania	1	1
Obsessive-compulsive disorder	1	1
Tourette's syndrome	1	1

Note. All study participants met diagnostic criteria for gender dysphoria.
[a]2 psychiatric diagnoses in addition to gender dysphoria.
[b]3 or more psychiatric diagnoses in addition to gender dysphoria.

co-occurring diagnoses, and 16% had three or more co-occurring diagnoses. See Table 1 for details on specific co-occurring diagnostic categories. With respect to comorbidities, 37% had a depressive disorder, and nearly 28% met criteria for an anxiety disorder (i.e., generalized anxiety disorder, anxiety disorder not otherwise specified, or social phobia). The majority of our sample (92.2%) reported a history of counseling, suggesting that youth in our sample were receiving support to navigate these challenges.

The mean BMI of our sample was 25.72 (SD = 7.7; range = 15–53), which is in the overweight range. BMI did not differ significantly by gender or by age. Within the sample, 10.4% rated themselves, as being "too thin," 46.9% "just right," and 35.4% as "too big." MTF and FTM youth did not differ in terms of body dissatisfaction or desire to change weight.

Gender Identity, Drive for Weight Change, Self-Harm, and Suicide Attempts

In the overall sample (n = 96), there was a significant relationship between drive for weight change and history of suicide attempts ($\chi^2 = 7.79$, $p < .05$), with transgender youth who endorsed "interest in weight loss" and "interest in weight gain" as more likely to endorse a history of suicide attempts (41%) than transgender teens who rated themselves as "no desire for weight change (20%)." We also found that patients who endorsed a history of self-harm were more likely to endorse a history of suicide attempt (69%)

compared with those patients who did not self-harm (31%; $\chi^2 = 9.28$, $p < .01$). In our sample, significantly more FTM youth reported a history of suicide attempt (43%; $\chi^2 = 9.38$, $p < .05$) compared with MTF youth (14%). Finally, significantly more FTM youth endorsed a history of self-harm (56%; $\chi^2 = 8.73$, $p < .05$) as compared to MTF youth (34%).

DISCUSSION

Our study is one of few to examine high-risk, suicidal behaviors, and weight-related concerns in a community-based sample of transgender adolescents and emerging adults. Our findings corroborate previous research that highlights challenges faced by this demographic (Grossman & D'Augelli, 2007; Reisner et al., 2015), as indicated in the high frequencies of suicidality and psychiatric comorbidities evidenced in our sample.

We also found that body dissatisfaction was significant, with 35.4% of youth reporting perceptions of being "too big." Interestingly, this finding was not far off from that experienced in the general adolescent population; previous findings suggest that 34.5% of adolescent girls and 24.2% of boys experience body dissatisfaction (CDC, 2008). It is unclear whether body dissatisfaction experienced by transgender youth is qualitatively similar to that experienced by their cisgender counterparts (e.g., weight concerns versus body dissatisfaction secondary to gender dysphoria). These sources of body dissatisfaction could have very different implications with regard to psychosocial outcomes and subsequent intervention.

With respect to suicide attempts and self-injurious behaviors, consistent with Grossman and D'Augelli (2007), more than one quarter of transgender youth reported a history of at least one suicide attempt and 41.8% indicated a history of self-injurious behaviors. This alarming statistic provides further evidence that transgender youth are at greater risk for suicide attempts and self-injurious behaviors as compared to their cisgender peers (Dickey et al., 2015). The percentage of our sample endorsing a history of self-injurious behavior is significantly greater than the prevalence for cisgender peers, which has been reported at 15% to 18% (Laye-Gindhu & Schonert-Reichl, 2005; Muehlenkamp, Claes, Havertape, & Plener, 2012; Whitlock, Eckenrode, & Silverman, 2006). Given the relationship between self-injurious behavior and suicidal behaviors (Hamza, Stewart, & Willoughby, 2012), further understanding of risk factors for self-injurious behaviors in transgender youth is needed.

Gender Differences

It is noteworthy that FTM youth were more vulnerable to both suicide attempts and self-injurious behaviors than their MTF counterparts. This is inconsistent with previous findings indicating consistent rates of suicide attempts across MTF and FTM youth (e.g., Dickey et al., 2015), yet corroborates evidence that FTM youth are more vulnerable to self-injury (Skagerberg et al., 2013). It is unclear why FTM youth in our sample were more likely to report a history of suicide attempts. One potential explanation is that our FTM youth were more likely to endorse feeling unsafe in their home as compared to MTF youth. Further, in the cisgender literature, cisgender females are more likely to attempt suicide and engage in self-injurious behaviors as compared to cisgender males (Groholt & Ekeberg, 2009; Laye-Gindhu & Schonert-Reichl, 2005). It may be that there are biological risk factors associated with being female which promote risk for both suicide attempts and self-injurious behaviors. Supporting this notion, one study found that familial transmission of suicide attempts is more likely in female offspring (Brent et al., 2002). Additionally, transgender youth are at a higher risk for abuse, with 78% experiencing harassment related to their gender identify, 35% reporting incidents of physical violence, and 12% reporting sexual violence (Grant et al., 2011). Future investigations examining potential distal and proximal risk factors for self-injury and

suicide attempts in FTM and MTF youth are indicated.

To test hypotheses that weight and body dissatisfaction would be associated with suicide attempts and self-injurious behaviors, we examined the relationship of BMI, body dissatisfaction, and drive for weight change with history of suicide attempts and self-injurious behaviors. Our findings indicate that transgender youth with a desire for weight change were more likely to report a history of a suicide attempt than transgender youth without weight concerns. Inconsistent with our hypothesis, neither body dissatisfaction nor BMI was associated with suicide attempts. It is unclear why the youth in our sample were particularly vulnerable to interest in weight change. It is noteworthy that both interest in weight gain and in weight loss were associated with a higher likelihood of history of suicide attempts, suggesting that specific weight-related vulnerabilities were secondary to gender dysphoria (e.g., wanting to change weight to appear more like the identified gender), as opposed to weight concerns related to body weight and shape observed in individual's with eating disorders.

Limitations

Our study should be interpreted in the context of a number of limitations. First, our data are cross-sectional in nature. Our data were collected from standard clinical assessment questions that were dichotomous, as opposed to standardized assessment tools. Our sample is characterized by adolescents and emerging adults who sought out treatment for gender dysphoria and desired medical treatment for gender transition. Thus, the results may not generalize to those transgender individuals who do not desire to transition with medical intervention (e.g., hormones). Our sample may differ significantly from community-based samples which may include youth and emerging adults who are homeless and exhibit more high-risk behaviors. Finally, to our knowledge, specific assessment measures for transgender youth have not yet been created. In this regard, it is unclear whether constructs measured have the same applications to transgender youth as cisgender youth. For example, body dissatisfaction in transgender youth may represent a proxy for gender dysphoria (e.g., wanting larger hips to appear more feminine or slimmer hips to appear more masculine).

Clinical Implications and Future Directions

Our study had several strengths, including the use of a large, clinical sample (all diagnosed with gender dysphoria) of transgender youth. Further, our sample included individuals at their intake visit; thus, they were at the same phase of transition (e.g., had not begun hormone treatment). Our results provide further evidence for the at-risk nature of transgender youth, emphasizing that mental health clinicians and physicians working with this demographic need to be aware of these challenges. The concerning rate of suicidal and self-injurious behaviors warrants regular assessments and an appropriate referral basis to provide these youth with needed support services. Whereas 92% of our sample had received counseling, the nature of these interventions is unclear, given the absence of evidence-based psychological interventions for gender dysphoria. Our study also elucidates the pervasive nature of weight-related concerns in transgender adolescents, as well as the association between desire to change weight and history of suicide attempts. Dissatisfaction with one's appearance and the drive to look different from one's sex assigned at birth is central to gender dysphoria and is a critical domain to assess and provide support for in treating gender dysphoria. Providers should be especially aware of weight concerns in this population given the association with history of suicide attempt, although the directionality and specific nature of this relationship is unclear. Future, prospective studies are needed to examine the relations among weight concerns, eating disorder behaviors, self-injurious behaviors, and suicidal behaviors as these relationships have been shown in

the cisgender population (Peterson & Fischer, 2012; Pisetsky, Thornton, Lichtenstein, Pedersen, & Bulik, 2013). Finally, FTM youth in our sample were more vulnerable to self-injurious and suicidal behaviors than MTF counterparts, emphasizing a need for more research endeavors to better understand unique vulnerabilities faced by this group, which would facilitate evidence-based assessment and treatment modalities.

REFERENCES

ÅLGARS, M., ALANKO, K., SANTTILA, P., & SANDNABBA, N. K. (2012). Disordered eating and gender identity disorder: A qualitative study. *Eating Disorders, 20*, 300–311.

American Psychological Association. (2015). *Guidelines for psychological practice with transgender and gender nonconforming people.* Retrieved April 2016 from http://www.apa.org/practice/guidelines/transgender.pdf.

BRENT, D. A., OQUENDO, M., BIRMAHER, B., GREENHILL, L., KOLKO, D., STANLEY, B., ET AL. (2002). Familial pathways to early-onset suicide attempt: Risk for suicidal behavior in offspring of mood-disordered suicide attempters. *Archives of General Psychiatry, 59*, 801–807.

Centers for Disease Control and Prevention. (2008). Youth risk behavior surveillance-United States, 2007. *Morbidity and Mortality Weekly Report, 57*(SS-4), 1–36.

Centers for Disease Control and Prevention. (n.d.). *Body mass index: Considerations for practitioners.* Retrieved April 2016 from http://www.cdc.gov/obesity/downloads/BMIforPactitioners.pdf.

COLEMAN, E., BOCKTING, W., BOTZER, M., COHEN-KETTENIS, P., DECUYPERE, G., FELDMAN, J., ET AL. (2011). Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *International Journal of Transgenderism, 13*, 165–2011.

CONRON, K. J., SCOTT, G., STOWELL, G. S., & LANDERS, S. J. (2012). Transgender health in Massachusetts: Results from a household probability sample of adults. *American Journal of Public Health, 102*, 118–122.

COUTURIER, J., BHARADWAJ, P., FINDLAY, S., & JOHNSON, N. (2015). Anorexia nervosa and gender dysphoria in two adolescents. *International Journal of Eating Disorders, 48*, 151–155.

DICKEY, L. M., REISNER, S. L., & JUNTUNEN, C. L. (2015). Non-suicidal self-injury in a large online sample of transgender adults. *Professional Psychology: Research and Practice, 46*, 3–11.

GRANT, J. M., MOTTET, L. A., TANIS, J., HARRISON, J., HERMAN, J. L., & KEISLING, M. (2011). *Injustice at every turn: A report of the National Transgender Discrimination Survey.* Washington, DC: National Center for Transgender Equality and National Gay and Lesbian Task Force.

GROHOLT, B., & EKEBERG, Ø. (2009). Prognosis after adolescent suicide attempt: Mental health, psychiatric treatment, and suicide attempts in a nine-year follow-up study. *Suicide and Life-Threatening Behavior, 39*, 125–136.

GROSSMAN, A. H., & D'AUGELLI, A. R. (2007). Transgender youth and life-threatening behaviors. *Suicide and Life-Threatening Behavior, 37*, 527–537.

HAMZA, C. A., STEWART, S. L., & WILLOUGHBY, T. (2012). Examining the link between nonsuicidal self-injury and suicidal behavior: A review of the literature and an integrated model. *Clinical Psychology Review, 32*, 482–495.

HEMBREE, W. C., COHEN-KETTENIS, P., DELEMARRE-VAN DE WAAL, H. A., GOOREN, L. J., MEYER, W. J., 3RD., SPACK, N. P., ET AL. (2009). Endocrine treatment of transsexual persons: An endocrine society clinical practice guideline. *The Journal of Clinical Endocrinology & Metabolism, 94*, 3132–3154.

KHOOSAL, D., LANGHAM, C., PALMER, B., TERRY, T., & MINAJAGI, M. (2009). Features of eating disorder among male-to-female transsexuals. *Sexual and Relationship Therapy, 24*, 217–229.

LAYE-GINDHU, A., & SCHONERT-REICHL, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the "whats" and "whys" of self-harm. *Journal of Youth and Adolescence, 34*, 447–457.

MUEHLENKAMP, J. J., CLAES, L., HAVERTAPE, L., & PLENER, P. L. (2012). International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. *Child and Adolescent Psychiatry and Mental Health, 6*, 1–9.

OLSON, J., SCHRAGER, S. M., BELZER, M., SIMONS, L. K., & CLARK, L. F. (2015). Baseline physiologic and psychosocial characteristics of transgender youth seeking care for gender dysphoria. *Journal of Adolescent Health, 57*, 374–380.

PETERSON, C. M., & FISCHER, S. (2012). A prospective study of the influence of the UPPS model of impulsivity on the co-occurrence of bulimic symptoms and non-suicidal self-injury. *Eating Behaviors, 13*, 335–341.

PISETSKY, E. M., THORNTON, L. M., LICHTENSTEIN, P., PEDERSEN, N. L., & BULIK, C.

M. (2013). Suicide attempts in women with eating disorders. *Journal of Abnormal Psychology, 122*, 1042–1056.

REISNER, S. L., VETTERS, R., LECLERC, M., ZASLOW, S., WOLFRUM, S., SHUMER, D., ET AL. (2015). Mental health of transgender youth in care at an adolescent urban community health center: A matched retrospective cohort study. *Journal of Adolescent Health, 56*, 274–279.

SIMONS, L., SCHRAGER, S. M., CLARK, L. F., BELZER, M., & OLSON, J. (2013). Parental support and mental health among transgender adolescents. *Journal of Adolescent Health, 53*, 791–793.

SKAGERBERG, E., PARKINSON, R., & CARMICHAEL, P. (2013). Self-harming thoughts and behaviors in a group of children and adolescents with gender dysphoria. *International Journal of Transgenderism, 14*, 86–92.

VANCE, S. R., EHRENSAFT, D., & ROSENTHAL, S. M. (2014). Psychological and medical care of gender nonconforming youth. *Pediatrics, 134*, 1184–1192.

VANKIM, N. A., ERICKSON, D. J., EISENBERG, M. E., LUST, K., ROSSER, B. S., & LASKA, M. N. (2014). Weight-related disparities for transgender college students. *Health Behavior and Policy Review, 1*, 161.

WHITE HUGHTO, J. M., REISNER, S. L., & PACHANKIS, J. E. (2015). Transgender stigma and health: A critical review of stigma determinants, mechanisms and interventions. *Social Science & Medicine, 147*, 222–231.

WHITLOCK, J., ECKENRODE, J., & SILVERMAN, D. (2006). Self-injurious behaviors in a college population. *Pediatrics, 117*, 1939–1948.

WITCOMB, G. L., BOUMAN, W. P., BREWIN, N., RICHARDS, C., FERNANDEZ-ARANDA, F., & ARCELUS, J. (2015). Body image dissatisfaction and eating-related psychopathology in trans individuals: A matched control study. *European Eating Disorders Review, 23*, 287–293.

Manuscript Received: January 8, 2016
Revision Accepted: June 15, 2016

Suicide and Life-Threatening Behavior
THE OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION OF SUICIDOLOGY

Suicide and Life-Threatening Behavior

DOI: 10.1111/sltb.12432

Current and Military-Specific Gender Minority Stress Factors and Their Relationship with Suicide Ideation in Transgender Veterans

RAYMOND P. TUCKER, PHD, RYLAN J. TESTA, PHD, MARK A. REGER, PHD, TRACY L. SIMPSON, PHD, JILLIAN C. SHIPHERD, PHD, AND KEREN LEHAVOT, PHD

Research suggests the prevalence of suicide ideation and suicide attempts in the transgender veteran community may be upwards of 20 times higher than nontransgender veterans, who are known to be at increased risk than the general US population. This study aimed to understand the potential influence of external and internal minority stress experienced during and after military service on past-year and recent suicide ideation in a sample of 201 transgender veterans. Nonparametric bootstrapping analyses indicated past-year transgender-specific discrimination and rejection (external minority stress) indirectly predicted frequency of both past-year and past 2-week suicide ideation through past-year shame related to gender identity (internal minority stress). This result was significant when controlling for symptoms of depression and demographics. Similar patterns emerged when examining relationships among military external and internal minority stress on suicide outcomes. These results suggest that attempts to reduce both the experience and impact of minority stressors related to gender identity during and after military service may be an important avenue for suicide prevention.

Recent research regarding the prevalence of suicide ideation (SI) and suicide attempts (SA) in transgender communities has indicated a dire need for enhanced suicide prevention efforts. Over 40% (45%–79.2%) of adult transgender samples report a history of SI at some point in their lives and over 25% (28%–52%) report a history of at

RAYMOND P. TUCKER, Louisiana State University, Baton Rouge, LA, and VA Puget Sound Health Care System, Seattle, WA, USA; RYLAN J. TESTA, Rhodes College, Memphis, TN, USA; MARK A. REGER and TRACY L. SIMPSON, VA Puget Sound Health Care System, Seattle, WA, and University of Washington, Seattle, WA, USA; JILLIAN C. SHIPHERD, Department of Veterans Affairs, National Center for PTSD, VA Boston Healthcare System, Boston University, Boston, MA, USA; KEREN LEHAVOT, VA Puget Sound Health Care System, Seattle, WA, and University of Washington, Seattle, WA, USA.

This research was supported by a research grant from the Williams Institute Small Grants Program to Drs. Lehavot, Simpson, and Shipherd. This work was supported by the Denver-Seattle VA HSR&D Center of Innovation, VA Puget Sound Health Care System, and VA Boston Health Care System. Dr. Lehavot was supported by a VA Career Development Award from the CSR&D Service of the VA Office of Research and Development (IK2 CX000867). The opinions expressed in this work are those of the authors and do not necessarily represent those of the institutions, the Department of Veterans Affairs, or the U.S. Government.

Address correspondence to Raymond Tucker, Louisiana State University, 216 Audubon, Baton Rouge, LA 70803; E-mail address: rtucker1@lsu.edu

least one SA (Grant et al., 2011; Grossman & D'Augelli, 2007; Maguen & Shipherd, 2010; Mustanski, Garofalo, & Emerson, 2010; Nuttbrock et al., 2010; Scanlon, Travers, Coleman, Bauer, & Boyce, 2010; Testa et al., 2012, 2017). These estimates are substantially higher than lifetime rates in the general US population of 13.5% with a history of SI and 2% to 9% with a history of SA (Baca-Garcia et al., 2010; Kessler, Borges, & Walters, 1999; Nock et al., 2008). Not surprisingly, given these concerning estimates of prevalence, the burden of suicide in the transgender community has been recognized as a pressing public health issue and received substantial media interest (Hendershott, 2016; Ungar, 2015).

A growing area of research indicates suicide prevention efforts are particularly needed for transgender individuals who have served in the US military, especially given the 2016 change that allows open transgender service (Rosenberg, 2016). Transgender identity appears overrepresented in former service members compared to the general US population. For example, Veterans Health Administration (VHA) records indicate the prevalence of gender identity disorder (GID) was over five times higher in veterans receiving VA care in the years 2000 to 2011 than in the US population (22.9 vs. 4.3/100,000 persons; Blosnich et al., 2013). In addition, the transgender veteran population is growing at a rapid pace (Kauth et al., 2014). Unfortunately, transgender veterans appear to be particularly vulnerable to suicide. VHA data indicate SI, plans for suicide, and SA are between 4 and over 20 times higher in veterans with any gender identity-related diagnosis compared with those without (Blosnich et al., 2013; Brown & Jones, 2016). Indeed, transgender veterans die by suicide at an earlier age (49) than veterans without transgender-related diagnoses (55–60; Blosnich, Brown, Wojcio, Jones, & Bossarte, 2014). Results of a nationally representative sample of over 200 transgender veterans indicated 56.6% of the sample endorsed some level of SI in the past year and 32% endorsed at least one past SA (Lehavot, Simpson, & Shipherd, 2016). Strikingly in that sample, 66% of these transgender veterans indicated planning for suicide at some point in their lives.

Minority-specific frameworks may provide insight into the increased susceptibility to SI in transgender veterans. Minority stress theory suggests health disparities in sexual and gender minority communities exist due to the added influence of external stigmatization such as discrimination and rejection (external minority stress) as well as internalized stigmatizing beliefs (internal minority stress) (Hendricks & Testa, 2012; Meyer, 2003). The psychological mediation framework expands upon minority stress theory and posits that external minority stress is related to poor health outcomes such as mental health symptoms and suicidality through its influence on internal minority stressors (Hatzenbuehler, 2009). The applicability of these theories in explaining susceptibility to SI and SA has been supported by research in sexual minority populations in the United States and has recently been applied to the understanding of transgender suicide (Cochran, Balsam, Flentje, Malte, & Simpson, 2013; Lehavot & Simoni, 2011; Tebbe & Moradi, 2016; Testa et al., 2017). Initial support for this theory with transgender veterans living in states with employment protections against discrimination was demonstrated with a 43% less likelihood of self-harm relative to veterans living in states without these protections (Blosnich et al., 2016). Moreover, Lehavot, Simpson, and Shipherd (2016) found that self-reported housing and employment discrimination, heterosexism, and shame related to transgender identity were positively associated with either or both past-year SI and lifetime SA history among transgender veterans.

Although preliminary evidence suggests transgender-specific minority stressors may influence susceptibility to SI and SA in transgender veterans, no work has explicitly tested the central tenants of the psychological mediation framework in a sample of transgender veterans. This is a significant gap in the literature as evidence of the

applicability of the psychological mediation framework in explaining susceptibility to SI in the broader transgender population exists (Testa et al., 2017). Additionally, little is known about how external minority stress and internal minority stress experienced during military service influence SI. This work is important to determine whether the experience of minority stress during military service has a lasting effect on susceptibility to SI and thus warrants targeting as a suicide prevention strategy.

In this follow-up analysis of Louzon, Bossarte, McCarthy, and Katz's (2016) findings we investigated whether experiences of external minority stress relate to increased incidence and severity of SI through its relationship with internal minority stress, as would be predicted by the psychological mediation framework (Hatzenbuehler, 2009) and past work in nonveteran transgender populations (Testa et al., 2017). Additionally, this study tested whether external minority stress and internal minority stress experienced during military service relate to SI in a similar manner. It was hypothesized that external minority stress experienced in the last year (e.g., forced isolation from family and friends, discrimination, and harassment due to transgender identity) would be indirectly related to past-year and recent SI through increased internal minority stress (e.g., shame related to transgender identity). Additionally, it was expected that external and internal minority stress related to transgender identity during military service (e.g., being investigated for transgender identity during service and shame) would demonstrate a similar indirect effect on past-year and recent SI. As Louzon et al. (2016) demonstrated a strong relationship between symptoms of depression and the experience of recent SI, in the current study we investigated hypothesized indirect effects with and without symptoms of depression (excluding SI) as a covariate to maximize the clinical relevance of study results. A recent study demonstrated that important elements of suicidality such as passive thoughts of death and psychological pain are also covaried out when symptoms of depression are controlled in the prediction of SI (Rogers, Stanley, Hom, Chiurliza, Podlogar, & Joiner, 2016). Controlling for depression can be important in demonstrating the relative effect of a variable on SI outside of the effect of depression; however, these analyses also limit clinical relevance as important elements of suicidality are covaried. Thus, the current manuscript presents indirect effect models with and without controlling for depression symptoms. Other demographic predictors of SI found in Louzon et al. (2016) also served as covariates for all indirect effect analyses (e.g., age, gender identity, ethnicity/race, and annual income) in the current study.

METHOD

Procedure

Participants were recruited through listservs, social media, and other Internet mediums targeting transgender veterans and completed an online, anonymous survey. Eligibility criteria included age 18 years or older, prior service in the US armed forces, self-identification as transgender, and living in the United States. Further details have been described previously (Lehavot et al., 2016). Procedures were approved by the [masked for review] institutional review board and comply with the American Psychological Association's (APA) ethical standards for the treatment of human subjects.

Measures

Demographics. Demographic variables included age, self-identified current gender identity, sexual orientation, annual household income, race, and ethnicity.

External Minority Stress. Participants completed a condensed version of the Daily Heterosexist Experiences Questionnaire (DHEQ; Balsam, Beadnell, & Molina, 2013), which measures the prevalence and emotional impact of discrimination among sexual minority and transgender adults over

the last year. The following six subscales of the measure were selected for use in this study as they most pertain to transgender experience: gender expression, vigilance, discrimination and harassment, vicarious trauma, family of origin, and isolation. Items were rated on a 6-point Likert scale from 0 (*did not happen/not applicable to me*) to 5 (*it happened and bothered me extremely*). Sample items include, "Being harassed in public because of your gender expression" and "People laughing at you or making jokes at your expense because you are transgender." Subscales were totaled to reflect a measure of external minority stress in the past year. The total score demonstrated excellent internal consistency ($\alpha = .93$).

Internal Minority Stress. Participants completed the four-item Transgender Identity Scale–Shame Subscale (TIS; Bockting et al., unpublished data, January 2010), which measures the experience of shame related to transgender identity. Items were rated on a 6-point Likert scale from 1 (*strongly disagree*) to 4 (*neither agree/disagree*) to 7 (*strongly agree*), with higher scores representing more shame related to transgender identification. Sample items include, "Being transgender makes me feel like a freak" and "I sometimes feel that being transgender is embarrassing." Responses were summed to reflect a measure of internal minority stress during the last year. Internal consistency for the TIS shame subscale was excellent ($\alpha = .92$).

Military External Minority Stress. Participants completed an eight-item measure of being investigated and/or punished for transgender identification during military service. This scale was adapted from a validated measure of military punishment and investigation of sexual minority status in veterans (Cochran et al., 2013). Each item presented a possible scenario for objective external minority stress specific to military service (e.g., "Were you ever interrogated or investigated regarding your gender identity?" and "Were you ever physically isolated from your unit due to your gender identity [e.g., forced to sleep in separate quarters, assigned tasks that kept you away from your unit, or otherwise separated from your unit]?). Participants were asked to respond Yes/No to each item. As in previous research (Lehavot et al., 2016), the scale was dichotomized with any experience of persecution and investigation for gender identification dummy coded as a 1 and no experience coded as a 0. This dichotomization occurred because the nature of the items are not necessarily expected to correlate with one another as in a continuous scale, with any given endorsed experience representing the occurrence of a military external minority stressor. This was further observed by skew and kurtosis with this variable (see Results section).

Military Internal Minority Stress. Participants completed an eight-item measure of desire to conceal gender identity and fear and anxiety related to gender identity experienced during military service. This scale was adapted from a validated measure of concealment and anxiety related to sexual minority status during military service in veterans (Cochran et al., 2013). Items were rated on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*) and were aggregated to create a total score with higher scores that represent increased concealment and fear of gender identity becoming known. Sample items include, "If I had let people in the service know of my gender identity, I probably would have been harmed physically" and "In the service, I experienced a great deal of fear and anxiety about my authentic gender identity being revealed to others." Items were totaled to reflect a measure of internal minority stress during military service. Internal consistency for this measure was good ($\alpha = .81$).

Symptoms of Depression. Frequency of experiencing depression symptoms were assessed via the first eight items of the Patient Health Questionnaire–9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001). Item nine of the PHQ-9 which assesses the frequency of thoughts of dying and SI was removed from the measure as symptoms of depression were utilized as a covariate of

SI. Previous research has supported the use of these eight items (PHQ-8) as a measure of depression symptoms absent of SI (Kroenke et al., 2009). Items were rated on a 4-point Likert scale from 0 (*not at all*) to 3 (*nearly every day*), with higher scores representing increased frequency of experiencing symptoms of depression in the previous 2 weeks (e.g., "Little interest or pleasure in doing things" and "feeling down, depressed, or hopeless"). Internal consistency of the PHQ-8 was excellent ($\alpha = .93$).

Suicide Ideation. Frequency of SI experienced in the last year was assessed via item two of the Suicidal Behaviors Questionnaire–Revised (SBQ-R; Osman et al., 2001). Participants were asked to rate the frequency in which they had experienced SI over the last year from 1 (*never*) to 5 (*very often (5 or more times)*). Frequency of SI experienced over the last 2 weeks was assessed via question nine of the PHQ-9. Participants were asked to rate how frequently they experienced, "thoughts that you would be better off dead, or of hurting yourself" in the last 2 weeks from 0 (*not at all*) to 3 (*nearly every day*). Previous research has demonstrated the clinical and theoretical relevance of interpreting data from these individual items (Louzon et al., 2016; Osman et al., 2001).

Analytical Strategy

Bivariate correlations were conducted to determine general associations between study variables. To test the hypotheses that external minority stress (past year and during military service) would predict increased frequency of SI (past year and past 2 weeks) through increased internal minority stress (past year and during military service), indirect effect analyses through nonparametric bootstrapping procedures with 5,000 bootstrapping samples was used (Hayes, 2013). Four total models were conducted, two to assess the effect of past-year external minority stress on frequency of SI in the past year (model 1) and past 2 weeks (model 2) through past-year internal minority stress. These analyses were repeated for military-specific indicators of external and internal minority stress on frequency of SI in the past year (model 3) and past 2 weeks (model 4). As research has previously demonstrated strong relationships between past-year SI and age, male-to-female transgender status, and symptoms of depression in veterans who identify as transgender, these variables served as covariates for all indirect effect analyses (Lehavot et al., 2016). Additionally, annual household income, race, and ethnicity were included as covariates. Results are presented both with and without symptoms of depression (PHQ-8 total scores) as research indicates covarying depression out of suicide ideation likely reduces clinical relevance of study results (Rogers et al., 2016). Number of years since military service was also entered as a covariate for military-specific indirect effect analyses.

RESULTS

Of the 498 individuals who agreed to participate, 186 were not eligible to participate and the data from 14 participants failed validity checks interspersed throughout the survey. Of the remaining 298 participants, listwise deletion of missing total data greater than 5% left a final sample of 201 (Mage = 48.41, SD = 14.80). The included veterans predominantly identified with a male-to-female gender identity (87.1%). The sample self-identified as White (89.9%) and non-Hispanic (96.5%). Average number of years since separation from service was 20.50 (SD = 16.07, range = 0–61 years). All participants who indicated current service (n = 5) were in the National Guard or Army Reserves. See Table 1 for a description of demographic characteristics and frequency of SI in the previous year and past 2 weeks within the study sample. Over one third of the sample (36.1%) indicated some level of SI in the previous 2 weeks and 56.2% identified SI in the past year.

TABLE 1
Demographic Characteristics and Levels of Suicide Ideation of the Study Sample (N = 201)

Variable	*n*	%
Gender		
Male-to-Female	175	87.1
Female-to-Male	26	12.9
Race		
White	180	89.6
Asian	3	1.5
Black or African American	3	1.5
American Indian/Alaska Native	4	2.0
Mixed Race	11	5.5
Ethnicity		
Non-Hispanic	194	96.5
Hispanic	7	3.5
Sexual Orientation		
Heterosexual	45	22.4
Lesbian/Gay	46	22.9
Bisexual	69	34.3
Other	41	20.4
Annual Household Income		
Under $10,000	16	8.0
$10,000 - $15,000	15	7.5
$16,000 - $20,000	17	8.5
$21,000 - $25,000	18	9.0
$26,000 - $35,000	19	9.5
$36,000 - $50,000	41	20.4
$51,000 - $70,000	19	9.5
$71,000 or More	56	27.9
Military Branch		
Air Force	41	20.4
Army	75	37.3
Coast Guard	5	2.5
Marines	19	9.5
Navy	49	24.4
National Guard/Army Reserves	12	6.0
SI in Past 2 Weeks		
None	128	63.7
Several days	36	17.9
More than half the days	13	6.5
Nearly every day	24	11.9
Past-year SI		
Never	87	43.3
Rarely (1 time)	40	19.9
Sometimes (2 times)	21	10.4
Often (3–4 times)	23	11.4
Very Often (5 + times)	30	14.9

Descriptive Statistics and General Association between Study Variables

Means, standard deviations, normality estimates, and bivariate correlation coefficients of study variables are presented in Table 2. SI in the past year and 2 weeks were positively correlated with past-year external and internal minority stress as well as military internal minority stress at small-to-moderate effect sizes. PHQ-8 scores demonstrated large positive correlations with past-year and past 2-week SI as well as small-to-moderate-sized associations with past-year and military-specific internal minority stress and past-year external minority stress.

Over one quarter of the sample (n = 59, 29.35%) indicated the experience of at least one instance of external minority stress during military service, 17% (n = 34) endorsed two or more instances, and 6% (n = 12) endorsed four or more instances. The full range of items endorsed spanned from 0 to 8 (highest possible) instances of external minority stress during military service. This variable demonstrated significant skewness (2.63) and kurtosis (7.92) prior to being dichotomized, as noted in the methods. Presence of military external minority stress was related to higher levels military internal minority stress, external minority stress in the past year, and symptoms of depression with moderate effect sizes (Table 3). It was unrelated to SI in the past year (p = .17), SI in the past 2 weeks (p = .08), and internal minority stress in the previous year (p = .16).

Past-Year Minority Stress and SI

An indirect effect was found for past-year external minority stress predicting increased past-year SI through increased past-year internal minority stress while controlling for covariates (B = .1126, 95% BC CI [0.0369, 0.2326]). The model predicted 33.31% of the variance of past-year SI,

TABLE 2
Descriptive Statistics, Normality Estimates, and Correlation Coefficients of Study Variables

Variable	1	2	3	4	5	6	7
1. External minority stress	–						
2. Internal minority stress	.50***	–					
3. Military internal minority stress	.50***	.37***	–				
4. Depression	.57***	.47***	.33***	–			
5. SI in past 2 weeks	.40***	.39***	.23**	.63***	–		
6. Past-year SI	.43***	.48***	.30***	.55***	.76***	–	
7. Age	−37***	−.46***	−.25***	−.27***	−.08	−.23**	–
M	2.19	30.20	31.42	9.91	.66	2.35	48.60
SD	.94	12.46	6.80	7.46	1.04	1.50	14.72
Skewness	0.28	0.05	−1.04	0.33	1.37	0.69	−0.25
Kurtosis	−0.14	−0.84	0.74	−1.03	0.46	−1.04	−1.02

Note. **$p < .01$; ***$p < .01$; SI = suicide ideation.

TABLE 3
Independent Samples t Tests Comparing Study Variables by Military External Minority Stress

	External Minority Stress (n = 59)		No External Minority Stress (n = 142)			
	M	*SD*	*M*	*SD*	t^a	*d*
Past-year external minority stress	2.57	0.98	2.05	0.86	3.38**	.56
Past-year internal minority stress	32.25	12.30	29.40	12.51	1.35	.23
Military external minority stress	34.17	5.17	30.33	7.11	4.27***	.61
Depression symptoms	12.22	6.86	9.00	7.47	2.95**	.45
Past-year SI	2.57	1.55	2.25	1.46	1.40	.21
SI in past 2 weeks	0.85	1.16	.59	0.98	1.60	.24

Note. **$p < .01$; ***$p < .01$; [a]df (1, 200) for all variables.

$F(7,193) = 13.77$, $p < .001$. A similar indirect effect was found for past-year external minority stress predicting increased frequency of SI in the last 2 weeks through increased past-year internal minority stress while controlling for covariates ($B = .0473$, 95% BC CI [0.0072, 0.1171]). The model predicted 42.5% of the variance of SI frequency in the last 2 weeks, $F(7,193) = 20.38$, $p < .001$. Both models remained significant when were not controlled as a covariate (see Table 4).

Military-Specific Minority Stress and SI

An indirect effect was found for military external minority stress predicting increased past-year SI through increased military internal minority stress while controlling for covariates ($B = .0885$, 95% BC CI [0.0142, 0.2143]). The model predicted 33.23% of the variance of past-year SI, $F(8,192) = 11.82$, $p < .001$. This effect was also significant when symptoms of depression were not controlled (Table 4).

TABLE 4
Indirect Effects of External Minority Stress on Suicide Ideation Through Internal Minority Stress

			Depression Covaried				Depression Not Covaried			
Predictor Variable	Mediating Variable	Outcome Variable	*B*	SE	95% CI	R^2	*B*	SE	95% CI	R^2
Past-year external minority stress	Past-year internal minority stress	Past-year SI	.1126	.0500	0.0369, 0.2326	.3331	.23706	.0648	0.1305, 0.3871	.2078
Past-year external minority stress	Past-year internal minority stress	Past 2-week SI	.0473	.0273	0.0072, 0.1171	.4250	.1404	.0459	0.0680, 0.2504	.1814
Military external minority stress	Military internal minority stress	Past-year SI	.0885	.0485	0.0142, 0.2143	.3323	.2025	.0696	0.0917, 0.3731	.1100
Military external minority stress	Military internal minority stress	Past 2-week SI	.0178	.0293	−0.0407, 0.0781	.4307	.1140	.0451	0.0410, 0.2238	.0591

Note. SI = suicide ideation; CI = confidence interval; 5,000 bootstrap resamples.

There was no indirect effect of military external minority stress on frequency of SI in the last 2 weeks through military internal minority stress while controlling for covariates (B = .0178, 95% BC CI [−0.0407, 0.0781]). When analyzed without depression as a covariate, there was a significant indirect effect of military external minority stress predicting increased frequency of SI in the last 2 weeks through increased military internal minority stress while controlling for age and current gender identification (B = .1140, 95% BC CI [0.0410, 0.2238]). The model predicted 5.91% of the variance of SI in the past 2 weeks, $F(8,192) = 2.40$, $p = .018$ (Table 4).

DISCUSSION

In the current study we investigated the relationship between SI and both external and internal minority stressors related to gender identity experienced during and after military service in veterans who identify as transgender. Results indicated that the experience of past-year transgender-related discrimination (external minority stress) was related to SI experienced in both the last 2 weeks and in the last year through feelings of shame related to transgender identity (internal minority stress). These results extend minority stress theory (Hendricks & Testa, 2012) and the psychological mediation framework of minority stress (Hatzenbuehler, 2009) to the understanding of risk for suicide ideation in transgender veterans. As these relationships were found independent of important demographic correlates of SI in transgender veterans (Lehavot et al., 2016), the experience of transgender-related minority stressors may play a particularly pivotal role in the development and/or maintenance of SI in this population. This assertion is further supported by the moderately large effect sizes found in the current study, as the indirect effect models accounted for over 30% of the variance of past-year SI and over 40% of SI experienced in the last 2 weeks. Taken together with prior work applying minority stress theory to the

understanding of suicide in transgender adults (Tebbe & Moradi, 2016; Testa et al., 2017), the results of the current study indicate the application of this model may be a particularly important framework for understanding SI frequency in veterans who identify as transgender.

Results regarding transgender-related minority stressors experienced during military service and SI experienced in the past year and last 2 weeks followed a similar pattern. The experience of punishment and/or investigation related to gender identity (military external minority stress) was related to past-year and past 2-week SI through the desire to conceal gender identity and fear and anxiety related to gender identity experienced during military service (military internal minority stress). This is the first study to our knowledge to apply the psychological mediation framework (Hatzenbuehler, 2009) to test the impact of transgender-related minority stressors experienced during military service on frequency of subsequent SI. The relative impact of these military-specific minority stressors may be lower compared to past-year stressors; the relationship between military external minority stress to SI in the last year through military internal minority stress demonstrated generally lower effect sizes. Additionally, the experience of military-specific external minority stress was not directly associated with SI outcomes, whereas past-year external minority stress was directly associated with SI. The relatively weaker association between military-specific minority stressors and SI compared to past-year stressors may in part be due to a myriad of factors warranting future study, including time lag between the experience of stressors and assessment of SI in the current study, social support during and after service, and the ability to more fully live in line with one's authentic gender after service (as all participants were unable to serve openly due to military rules at the time of service).

The implications of the study results should be carefully considered with the following limitations in mind. First, the convenience sample utilized in this study may limit generalizability of study results to the broader transgender veteran population. Specifically, transgender men and ethnic and racial minority representation were particularly low in this sample and thus future research is needed to determine whether study results replicate in these populations. As with most suicide research, the focus of this investigation was on SI and SA and not on suicide completion, which is another important area of study. The use of a cross-sectional design limits causal and temporal inferences regarding the relationship between SI and the experience of both external and internal minority stress during and after military service. Although the current study employed frequently utilized screening measures of depression and SI, these assessment tools are not comprehensive and future research should include more complete self-report measures and semistructured clinical interviews. This may be particularly important to determine the extent to which minority stressors influence other elements of the suicide continuum, including planning and preparing for suicide and suicide attempts. These data will be essential to suicide prevention efforts.

Additionally, the current study focused on adverse events and experiences related to gender identification experienced during and after the military. Nonetheless, a growing body of literature has identified premilitary stressors, such as adverse childhood events, as potentially important correlates of suicide attempts in veteran and military populations (Stein et al., 2017) and in the broader transgender population (Grossman & D'Augelli, 2007). To better understand the impact of stressors experienced prior, during, and after military service on suicide risk in transgender veterans, future work would benefit from integrating the minority stress framework utilized in this study with other stressors and trauma exposures experienced across the lifespan. This work would benefit from including the assessment of adverse childhood events, military sexual trauma (MST), and traumas possibly experienced postservice (e.g.,

physical assault, domestic abuse, and sexual assault). Finally, as the current study only analyzed one theory relevant to suicide risk —the psychological mediation framework of minority stress—future work may also benefit from including constructs central to other theoretical models of suicide, such as the Integrated Motivational–Volitional model of suicide (IMV; O'Connor, 2011), the Three-Step Theory (3ST; Klonsky & May, 2015), the Cultural Theory of Suicide (Chu, Goldblum, Floyd, & Bongar, 2010), and the Interpersonal Theory of Suicide (ITS; Joiner, 2005; Van Orden et al., 2010). Existing research suggests that integrating ITS (e.g., the interpersonal predictors of SI of thwarted belongingness and perceived burdensomeness) and minority stress theory may explain the etiology and maintenance of SI in a large sample of transgender adults in the United States (Testa et al., 2017).

Although the current study is not without limitations, the results have important implications for clinical and research efforts aiming to reduce suicide in transgender veterans. Social and policy-based interventions seeking to reduce transgender-related prejudice and discrimination may be particularly efficacious in reducing gender-related shame and risk of SI in transgender veterans. Care providers who directly interact with transgender veterans can also follow published standards of care to reduce microagressions and potentially unknown prejudices to reduce stigmatization of their patients (World Professional Association of Transgender Health, 2012). These standards also indicate the importance of helping transgender patients recognize and reduce their own stigmatizing beliefs about their gender identity. Techniques central to psychotherapeutic interventions may be applied to reducing feelings of shame and guilt, such as enhancing social support and connection to other individuals who identify as transgender, particularly those who have served in the military; cognitive monitoring and restructuring in cognitive behavior therapy (Beck, 1979); and diffusion and committed value-driven action strategies in acceptance and commitment therapy (Hayes, Strosahl, & Wilson, 2005) may be efficacious in this pursuit. Similarly, it has been argued that a dialectical behavior therapy approach can be beneficial to transgender people for balancing validation of identity and health change strategies (Sloan, Berke, & Shipherd, 2017). Furthermore, the US military currently has transgender persons who are serving in the military, although next steps of enrolling new transgender service members is uncertain at present (Vanden Brook, 2017a,b), highlighting the importance of this research. Future research should explore shifts in transgender-related minority stressors experienced during military service, and potential effects on SI and suicide behaviors.

Overall, the results of this study suggest transgender-specific external and internal minority stress experienced both during and after military service influence susceptibility to SI. The findings support important theoretically grounded suicide prevention efforts. The opportunities for suicide prevention among transgender veterans is expected to grow as VA national policies evolve, decreasing potential disparities in care (Kauth & Shipherd, 2016).

REFERENCES

BACA-GARCIA, E., PEREZ-RODRIGUEZ, M. M., KEYES, K. M., OQUENDO, M. A., HASIN, D. S., GRANT, B. F., ET AL. (2010). Suicidal ideation and suicide attempts in the United States: 1991–1992 and 2001–2002. *Molecular Psychiatry, 15*, 250–259.

BALSAM, K. F., BEADNELL, B., & MOLINA, Y. (2013). The Daily Heterosexist Experiences Questionnaire: Measuring minority stress among lesbian, gay, bisexual, and transgender adults. *Measurement and Evaluation in Counseling and Development, 46*, 3–25.

BECK, A. T. (Ed.). (1979). *Cognitive therapy of depression*. New York, NY: Guilford Press.

BLOSNICH, J. R., BROWN, G. R., SHIPHERD, J. C., KAUTH, M., PIEGARI, R. I., & BOSSARTE, R.

M. (2013). Prevalence of gender identity disorder and suicide risk among transgender veterans utilizing Veterans Health Administration care. *American Journal of Public Health*, *103*(10), e27–e32.

BLOSNICH, J. R., BROWN, G. R., WOJCIO, S., JONES, K. T., & BOSSARTE, R. M. (2014). Mortality among veterans with transgender-related diagnoses in the Veterans Health Administration, FY2000–2009. *LGBT Health*, *1*(4), 269–276.

BLOSNICH, J. R., MARSIGLIO, M. C., GAO, S., GORDON, A. J., SHIPHERD, J. C., KAUTH, M., ET AL. (2016). Mental health of transgender veterans in US states with and without discrimination and hate crime legal protection. *American Journal of Public Health*, *106*, 534–540.

BROWN, G. R., & JONES, K. T. (2016). Mental health and medical health disparities in 5135 transgender veterans receiving healthcare in the Veterans Health Administration: A case–control study. *LGBT Health*, *3*(2), 122–131.

CHU, J. P., GOLDBLUM, P., FLOYD, R., & BONGAR, B. (2010). The cultural theory and model of suicide. *Applied and Preventive Psychology*, *14*, 25–40.

COCHRAN, B. N., BALSAM, K., FLENTJE, A., MALTE, C. A., & SIMPSON, T. (2013). Mental health characteristics of sexual minority veterans. *Journal of Homosexuality*, *60*, 419–435.

GRANT, J. M., MOTTET, L., TANIS, J. E., HARRISON, J., HERMAN, J., & KEISLING, M. (2011). *Injustice at every turn: A report of the national transgender discrimination survey*. Washington, DC: National Center for Transgender Equality.

GROSSMAN, A. H., & D'AUGELLI, A. R. (2007). Transgender youth and life-threatening behaviors. *Suicide and Life-Threatening Behavior*, *37*, 527–537. https://doi.org/10.1521/suli.2007.37.5.527

HATZENBUEHLER, M. L. (2009). How does sexual minority stigma "get under the skin"? A psychological mediation framework. *Psychological Bulletin*, *135*, 707.

HAYES, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

HAYES, S. C., STROSAHL, H. G., & WILSON, K. D. (2005). *Acceptance and commitment therapy: The process and practice of mindful change* (2nd ed.). New York, NY: Guilford Press.

HENDERSHOTT, A. (2016). *Chelsea Manning and transgender suicide rates*. Retrieved November 12, 2017, from http://www.washingtontimes.com/news/2016/jul/12/chelsea-manning-and-transgender-suicide-rates/

HENDRICKS, M. L., & TESTA, R. J. (2012). A conceptual framework for clinical work with transgender and gender nonconforming clients: An adaptation of the Minority Stress Model. *Professional Psychology: Research and Practice*, *43*, 460.

JOINER, T. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

KAUTH, M. R., & SHIPHERD, J. C. (2016). Transforming a system: Improving patient-centered care for sexual and gender minority veterans. *LGBT Health*, *3*(3), 1–3. https://doi.org/10.1089/lgbt.2016.0047.

KAUTH, M., SHIPHERD, J. C., LINDSAY, J., BLOSNICH, J. R., BROWN, G., & JONES, K. T. (2014). Access to care for transgender veterans in the Veterans Health Administration: 2006-2013. *American Journal of Public Health*, *104*(S4), S532–S534. https://doi.org/10.2105/AJPH.2014.302086

KESSLER, R. C., BORGES, G., & WALTERS, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry*, *56*, 617–626. https://doi.org/10.1001/archpsyc.56.7.617

KLONSKY, E. D., & MAY, A. M. (2015). The three-step theory (3ST): A new theory of suicide rooted in the "ideation-to-action" framework. *International Journal of Cognitive Therapy*, *8*, 114–129.

KROENKE, K., SPITZER, R. L., & WILLIAMS, J. B. (2001). The PHQ-9. *Journal of General Internal Medicine*, *16*, 606–613.

KROENKE, K., STRINE, T. W., SPITZER, R. L., WILLIAMS, J. B., BERRY, J. T., & MOKDAD, A. H. (2009). The PHQ-8 as a measure of current depression in the general population. *Journal of Affective Disorders*, *114*, 163–173.

LEHAVOT, K., & SIMONI, J. M. (2011). The impact of minority stress on mental health and substance use among sexual minority women. *Journal of Consulting and Clinical Psychology*, *79*, 159.

LEHAVOT, K., SIMPSON, T. L., & SHIPHERD, J. C. (2016). Factors associated with suicidality among a national sample of transgender veterans. *Suicide and Life-Threatening Behavior*, *46*, 507–524.

LOUZON, S. A., BOSSARTE, R., MCCARTHY, J. F., & KATZ, I. R. (2016). Does suicidal ideation as measured by the PHQ-9 predict suicide among VA patients? *Psychiatric Services*, *67*, 517–522.

MAGUEN, S., & SHIPHERD, J. C. (2010). Suicide risk among transgender individuals. *Psychology and Sexuality*, *1*, 34–43. https://doi.org/10.1080/19419891003634430.

MEYER, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*, 674.

MUSTANSKI, B. S., GAROFALO, R., & EMERSON, E. M. (2010). Mental health disorders,

psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youths. *American Journal of Public Health, 100*, 2426–2432. https://doi.org/10.2105/AJPH.2009.178319

NOCK, M. K., BORGES, G., BROMET, E. J., CHA, C. B., KESSLER, R. C., & LEE, S. (2008). Suicide and suicidal behavior. *Epidemiologic Reviews, 30*, 133–154.

NUTTBROCK, L., HWAHNG, S., BOCKTING, W., ROSENBLUM, A., MASON, M., MACRI, M., ET AL. (2010). Psychiatric impact of gender-related abuse across the life course of male-to-female transgender persons. *Journal of Sex Research, 47*, 12–23. https://doi.org/10.1080/00224490903062258

O'CONNOR, R. C. (2011). The integrated motivational-volitional model of suicidal behavior. *Crisis, 32*, 295–298. https://doi.org/10.1027/0227-5910/a000120.

OSMAN, A., BAGGE, C. L., GUTIERREZ, P. M., KONICK, L. C., KOPPER, B. A., & BARRIOS, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment, 8*, 443–454.

ROGERS, M. L., STANLEY, I. H., HOM, M. A., CHIURLIZA, B., PODLOGAR, M. C., & JOINER, T. E., (2016). Conceptual and empirical scrutiny of covarying depression out of suicidal ideation. *Assessment*. Epub ahead of print. https://doi.org/10.1177/1073191116645907

ROSENBERG, M. (2016). *Transgender people will be allowed to serve openly in military*. Retrieved November 12, 2017, from https://www.nytimes.com/2016/07/01/us/transgender-military.html?_r=0

SCANLON, K., TRAVERS, R., COLEMAN, T., BAUER, G. R., & BOYCE, M. (2010). Ontario's trans communities and suicide: Transphobia is bad for our health. *Trans PULSE Project*, 1.

SLOAN, C. A., BERKE, D. S., & SHIPHERD, J. C. (2017). Utilizing a dialectical framework to inform conceptualization and treatment of gender dysphoria. *Professional Psychology: Research and Practice, 48*, 301–309. http://psycnet.apa.org/doi/10.1037/pro0000146

STEIN, M. B., CAMPBELL-SILLS, L., URSANO, R. J., ROSELLINI, A. J., COLPE, L. J., HE, F., ET AL. (2017). Childhood maltreatment and lifetime suicidal behaviors among new soldiers in the US Army: Results from the Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *Journal of Clinical Psychiatry*. Epub ahead of print. https://doi.org/10.4088/jcp.16m10900

TEBBE, E. A., & MORADI, B. (2016). Suicide risk in trans populations: An application of minority stress theory. *Journal of Counseling Psychology, 63*, 520–533.

TESTA, R. J., MICHAELS, M. S., BLISS, W., ROGERS, M. L., BALSAM, K. F., & JOINER, T. (2017). Suicidal ideation in transgender people: Gender minority stress and interpersonal theory factors. *Journal of Abnormal Psychology, 126*, 125.

TESTA, R. J., SCIACCA, L. M., WANG, F., HENDRICKS, M. L., GOLDBLUM, P., BRADFORD, J., ET AL. (2012). Effects of violence on transgender people. *Professional Psychology: Research and Practice, 43*, 452–459. https://doi.org/10.1037/a0029604.

UNGAR, L. (2015). *Transgender people face alarmingly high risk of suicide*. Retrieved November 12, 2017, from https://www.usatoday.com/story/news/nation/2015/08/16/transgender-individuals-face-high-rates–suicide-attempts/31626633/.

VAN ORDEN, K. A., WITTE, T. K., CUKROWICZ, K. C., BRAITHWAITE, S. R., SELBY, E. A., & JOINER, T. E., JR. (2010). The interpersonal theory of suicide. *Psychological Review, 117*, 575.

VANDEN BROOK, T. (2017a). *Transgender people can still serve for now, U.S. military says*. Retrieved November 12, 2017, from https://www.nytimes.com/2017/07/27/us/politics/transgender-military-trump-ban.html

VANDEN BROOK, T. (2017b). Services required to report plans to accept new transgender troops. Retrieved November 12, 2017, from https://www.usatoday.com/story/news/politics/2017/05/21/defense-secretary-jim-mattis-chelsea-manning-transgender-troops-ash-carter-army-recruiting-president-obama/101891308/

World Professional Association of Transgender Health. (2012). *Standards of care for the health of transsexual, transgender, and gender nonconforming people*. Retrieved November 12, 2017, from https://s3.amazonaws.com/amo_hub_content/Association140/files/Standards%20of%20Care%20V7%20-%202011%20WPATH%20(2)(1).pdf

Manuscript Received: July 10, 2017
Revision Accepted: August 28, 2017

Available online at www.sciencedirect.com

ScienceDirect

Comprehensive Psychiatry 55 (2014) 534–541

COMPREHENSIVE PSYCHIATRY

www.elsevier.com/locate/comppsych

Suicide attempts before joining the military increase risk for suicide attempts and severity of suicidal ideation among military personnel and veterans

Craig J. Bryan[a,*], AnnaBelle O. Bryan[a], Bobbie N. Ray-Sannerud[a], Neysa Etienne[b], Chad E. Morrow[c]

[a]*National Center for Veterans Studies*
[b]*Maxwell Air Force Base*
[c]*Hurlburt Field*

Abstract

Objective: Past self-injurious thoughts and behaviors (SITB) are robust predictors of future suicide risk, but no studies have explored the prevalence of SITB occurring prior to military service among military personnel and veterans, or the association of premilitary SITB with suicidal ideation and suicide attempts during or after military service. The current study explores these issues in two separate samples.
Method: Self-report data were collected from 374 college student veterans via anonymous only survey (Study 1) and from 151 military personnel receiving outpatient mental health treatment (Study 2).
Results: Across both studies, premilitary suicide attempts were among the most prominent predictor of subsequent suicide attempts that occurred after joining the military, even when controlling for demographics and more recent emotional distress. Among military personnel who made a suicide attempt during or after military service, approximately 50% across both samples experienced suicidal ideation and up to 25% made a suicide attempt prior to joining the military. Military personnel and veterans who made suicide attempts prior to joining the military were over six times more likely to make a later suicide attempt after joining the military. In Study 2, significantly more severe current suicidal ideation was reported by participants with histories of premilitary suicide risk, even when controlling for SITB occurring while in the military.
Conclusions: Military personnel and veterans who experienced SITB, especially suicide attempts, prior to joining the military are more likely to attempt suicide while in the military and/or as a veteran, and experience more severe suicidal crises.

1. Introduction

Suicides in the United States Armed Forces continue to rise across all Branches of service. Suicide is the second-leading cause of death among military personnel [1], and in the first six months of 2012, more military personnel died by suicide than by combat-related injuries or causes [2]. A number of relatively dynamic psychological risk factors for self-injurious thoughts and behaviors (SITB) such as suicidal ideation, suicide planning, and suicide attempts have recently been confirmed in military populations, including depression [3,4], insomnia [5], hopelessness [6], and perceived burdensomeness [7,8]. Dispositional risk factors have likewise been identified (e.g., male gender, younger age, history of psychiatric diagnosis; [1]) but have received much less attention relative to situational stressors such as interpersonal conflict, deployment, and combat exposure, although considerable evidence suggests that dispositional and historical variables show much stronger relationships with SITB among military personnel [9,10].

Although a number of predisposing baseline risk factors for suicide have been identified, the role of previous SITB is especially well-established [11–13]. Specifically, individuals

The views expressed in this paper are those of the authors and do not necessarily represent the official position of policies of the U.S. Government, the Department of Defense, or the Department of the Air Force.

* Corresponding author. National Center for Veterans Studies, The University of Utah, 260 S. Central Campus Dr., Room 205, Salt Lake City, UT 84112.
E-mail address: craig.bryan@utah.edu (C.J. Bryan).

0010-440X/$ – see front matter © 2014 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.comppsych.2013.10.006

who have been suicidal in the past, especially those who have made suicide attempts, report significantly higher levels of psychopathology that tend to endure for longer periods of time [14–17]. Military data indicate that past self-injurious behavior is known in approximately 13% of suicide deaths and over 25% of suicide attempts among service members [1]. Furthermore, previous suicide attempts are associated with more intense current suicidal ideation among active duty service members even when controlling for a large number of suicide risk factors including depression, hopelessness, gender, and personality traits [13].

One model of suicide risk that explains how past SITB contributes to future SITB is the *fluid vulnerability theory* [18], which posits that suicide risk is best understood as an interaction between dispositional risk factors (referred to as *baseline* risk) and situational risk factors and stressors (referred to as *acute* risk). Baseline risk includes relatively stable vulnerabilities to suicide that persist over time and serve as an individual's "set point" for experiencing suicidal crises, whereas acute risk includes relatively transient life events and emotional distress that can fluctuate in intensity over time. From the perspective of fluid vulnerability theory, military suicide is more accurately understood as the combination of situational stressors and acute distress *within the context of* predisposing baseline vulnerabilities. To this end, fluid vulnerability theory hypothesizes the following about how preexisting vulnerabilities contribute to the process of suicide risk over time [18]:

1. Baseline risk varies from individual to individual, and is established by dispositional factors and variables that influence the person's threshold level for activation. For those with elevated baseline risk, the threshold activation level is reduced, such that suicidal episodes occur even during times of relatively low stress.
2. After resolution of an acute suicidal episode, individuals return to their baseline risk level, which means that individuals with elevated baseline risk remain at increased risk for SITB even when they are not in acute distress or have not experienced a recent crisis.
3. Because past suicidal episodes result in easier activation of future suicidal episodes, repeated SITB, especially multiple suicide attempts, indicate elevated baseline risk.
4. The severity of the suicidal episode depends on both the individual's baseline risk and the severity of aggravating risk factors (e.g., situational stressors, emotional distress).

As applied to military and veteran suicide risk, the fluid vulnerability theory posits that SITB occurring *prior* to military service elevates a service member or veteran's baseline risk for suicide, thereby making it "easier" for a service member or veteran to be suicidal again in the future. From the perspective of the fluid vulnerability theory, military personnel and veterans who have experienced SITB before they joined the military, especially those who have made suicide attempts, are (a) more likely to make suicide attempts while in the military and (b) will experience more intense suicidal episodes.

Unfortunately, to date there are no known studies that explore *when* service members and veterans first experience SITB relative to their military service. More specifically, there are no studies that report how many military personnel and veterans first experience SITB *before* joining the military as compared to *after* joining the military, and how they are related to each other. Perhaps because of this general absence of data, public and professional discourse about military and veteran suicide has largely omitted the potential role of preexisting vulnerabilities that serve to elevate risk for SITB during or following military service, despite the fact that these vulnerabilities may have a relatively stronger relationship with military and veteran suicide than other commonly-investigated risk factors such as psychiatric symptoms and life stressors. Such data could yield important contextual information about how (and when) suicide risk first emerges in military personnel and which military personnel are most vulnerable to experiencing suicidal behavior after joining the military, which could inform screening and treatment procedures with these populations.

The primary aims of the current study were (1) to provide preliminary data regarding the prevalence of premilitary SITB among military personnel and veterans, and (2) to determine the relationship of premilitary SITB with SITB that occurred during or after military service. We additionally hypothesized that military personnel and veterans who made suicide attempts prior to military service would be significantly more likely to make a suicide attempt during or after military service, and would experience more severe suicidal episodes during or after military service. Two separate samples were used to explore these questions: a nonclinical sample of military personnel and veterans enrolled in college classes (i.e., "student veterans") and a clinical sample of military personnel receiving outpatient mental health treatment.

2. Study 1: student veterans

2.1. Method

2.1.1. Participants

Participants included 374 military personnel (34.0%) and veterans (66.0%) ranging in age from 19 to 78 years (M = 36.76, SD = 10.40) who were enrolled in college classes. Gender distribution was 71.7% male and 28.3% female. Racial distribution was 82.1% Caucasian, 5.3% African American, 3.2% Native American, 3.4% African–American, 2.4% Asian, and 1.1% Pacific Islander. Latino/Hispanic ethnicity was additionally endorsed by 11.0% of participants. Branch of service included 32.6% Air Force,

35.8% Army, 7.5% Marine Corps, 20.3% Navy, and 1.3% Coast Guard.

2.1.2. Procedures

Participants were recruited through partnering universities and colleges, who forwarded a weblink to the online survey via email to known student veterans. Participants read an informed consent statement on the first page of the survey and then chose whether or not to complete the survey. Upon completion, participants were encouraged to forward the weblink to friends, classmates, and colleagues. The survey was completely anonymously, and was comprised of several self-report surveys that took an average of 12–15 min to complete. A total of 508 participants accessed the survey, of which 374 (73.6%) provided complete data and were military personnel and veterans. The current study was reviewed and approved by the University of Utah Institutional Review Board.

2.1.3. Instruments

2.1.3.1. Self-Injurious Thoughts and Behaviors (SITB). A self-report version of the Self-Injurious Thoughts and Behaviors Interview (SITBI; [19]) was used to assess the presence, frequency, timing, and characteristics of suicidal ideation ("have you ever had thoughts of killing yourself?"), suicide plans ("have you ever actually made a plan to kill yourself?"), nonsuicidal self-injury (NSSI; "have you ever actually engaged in nonsuicidal self-injury, that is, purposely hurting yourself without wanting to die, for example by cutting or burning?"), and suicide attempts ("have you ever made an actual attempt to kill yourself in which you had at least some intent to die?") during the individual's lifespan. For those who positively endorsed each item, respondents were then asked to report their age when they first and last experienced each thought or behavior. The scale has good interrater reliability ($\kappa = .99$), test–retest reliability over six months ($\kappa = .70$), and demonstrates strong convergent validity with other measures of SITB [19].

2.1.3.2. Depression. The Patient Health Questionnaire-9 (PHQ-9; [20]) was used to assess the severity of depression symptoms. The PHQ-9 asks respondents to indicate the frequency with which they have experienced each of the nine *DSM-IV-TR*-defined diagnostic criteria for major depressive disorder during the preview two weeks. Item responses range from 0 ("not at all") to 3 ("nearly every day") and are summed together, with higher total scores indicating more severe depression symptoms. The scale is widely-used as a reliable and valid indicator of depression. Internal consistency for the PHQ-9 in the current sample was .91.

2.1.3.3. Posttraumatic stress. Posttraumatic stress symptoms were assessed with the PTSD Checklist Short Form (PCL-SF; [21]), which is an abbreviated 6-item version of the full 17-item PTSD Checklist (PCL; [22]). The PCL-SF's six items were chosen by selecting the two items from each PTSD symptom cluster that correlated highest with the full scale score and with its respective symptom cluster total score: intrusive memories and images of the trauma, emotional distress when reminded of the trauma (cluster B); avoidance of activities and situations that remind of the trauma, feeling distant or cutoff from others (cluster C); feeling irritable or angry, feeling super alert (cluster D). The PCL-SF correlates very high with the full PCL ($r = .97$), and is comparable to the PCL in terms of sensitivity and specificity for a diagnosis of PTSD. Internal consistency for the current sample was .93.

2.2. Results

2.2.1. What proportion of student veterans experienced SITB prior to joining the military?

Of the 374 student veterans with complete survey date, 136 (36.4%) reported a lifetime history of suicidal ideation, 57 (15.2%) reported making a suicide plan, 52 (13.9%) reported nonsuicidal self-injury, and 29 (7.8%) reported making a suicide attempt. To determine if participants experienced any SITB before joining the military, we compared the reported age of first onset for suicidal ideation, suicide plans, nonsuicidal self-injury, and suicide attempts to each participant's reported age when he or she joined the military. Prior to joining the military, 82 (21.9%) participants reported suicidal ideation, 22 (5.9%) reported making a suicide plan, 33 (8.8%) reported engaging in NSSI, and 12 (3.2%) reported making a suicide attempt (see Table 1). There were no significant differences in rates of SITB according to military status (i.e., veteran versus active military).

2.2.2. Of those student veterans who made a suicide attempt after joining the military, what proportion experienced SITB prior to joining the military?

Eighteen (4.8%) student veterans made a suicide attempt after joining the military (i.e., while in the military or while a veteran). Nine of these 18 (50.0%) participants reported suicidal ideation, 2 (11.1%) had made a suicide plan, 4 (22.2%) engaged in NSSI, and 3 (16.7%) had made a suicide attempt before joining the military (see Table 2).

Table 1
Proportions of military personnel and veterans who experienced suicidal ideation, suicide plan, nonsuicidal self-injury, and suicide attempt prior to military service.

	n (%)
Study 1: College student veterans	
Premilitary suicidal ideation	82 (21.9%)
Premilitary suicide plan	22 (5.9%)
Premilitary nonsuicidal self-injury	33 (8.8%)
Premilitary suicide attempt	12 (3.2%)
Study 2: Air Force mental health clinic	
Premilitary suicidal ideation	25 (16.6%)
Premilitary suicide plan	9 (6.0%)
Premilitary nonsuicidal self-injury	9 (6.0%)
Premilitary suicide attempt	5 (3.3%)

Table 2
Proportions of military personnel and veterans who made a suicide attempt during or after military service with a history of premilitary suicide ideation, suicide plan, nonsuicidal self-injury, and suicide attempt.

Study 1: College student veterans (n = 18)	
Premilitary suicidal ideation	9 (50.0%)
Premilitary suicide plan	2 (11.1%)
Premilitary nonsuicidal self-injury	4 (22.2%)
Premilitary suicide attempt	3 (16.7%)
Study 2: Outpatient clinical setting (n = 8)	
Premilitary suicidal ideation	4 (50.0%)
Premilitary suicide plan	3 (37.5%)
Premilitary nonsuicidal self-injury	1 (12.5%)
Premilitary suicide attempt	2 (25.0%)

2.2.3. *Does premilitary SITB increase risk for suicide attempts after joining the military?*

We next used binary logistic regression to test the associations among premilitary SITB and suicide attempts that occurred after joining the military. Results are summarized in Table 3, and indicated that participants who made a suicide attempt after joining the military were more likely to have experienced suicidal ideation (11.0% vs. 3.1%; OR = 3.70 [1.41–9.67], p = .008), NSSI (12.1% vs. 4.1%; OR = 3.28 [1.01–10.67], p = .049), and suicide attempts (25.0% vs. 4.1%; OR = 9.06 [2.13–38.55], p = .003) prior to military service, but were not more likely to have made a suicide plan prior to military service (9.1% vs. 4.5%; OR = 2.13 [.45–9.96], p = .336). When adjusting for gender, age, depression symptoms, and posttraumatic stress symptoms, premilitary suicidal ideation (AOR = 2.69 [.95–7.61], p = .059) and premilitary suicide attempts continued to be associated with increased risk for later suicide attempts after joining the military (AOR = 5.60 [1.25–25.39], p = .025).

All four types of premilitary SITB were next entered into the regression model simultaneously to evaluate the relative strength of each variable while controlling for each other and covariates. Results of this final model are displayed in Table 4, and indicated that the likelihood of suicide attempts after joining the military was significantly more likely among participants who had made a suicide attempt prior to joining the military (AOR = 7.58 [1.13–50.73]). No other forms of premilitary SITB were significantly associated with suicide attempts after joining the military.

Table 4
Logistic regression coefficients predicting suicide attempts during or after military service among college student veterans.

	B	SE	AOR	(95% C.I.)	p
Premilitary suicidal ideation	.879	.629	2.41	(.70–8.27)	.163
Premilitary suicide plan	−1.505	.906	.22	(.04–1.31)	.097
Premilitary NSSI	.292	.733	1.34	(.32–5.63)	.690
Premilitary suicide attempt	2.025	.970	7.58	(1.13–50.73)	.037
Gender	−.235	.570	.79	(.26–2.41)	.679
Age	.050	.022	1.05	(1.01–1.10)	.021
Posttraumatic stress	.062	.054	1.06	(.96–1.18)	.248
Depression	.121	.048	1.13	(1.03–1.24)	.012

2.3. Discussion

Results of the current study indicate that 22% of military personnel and veterans enrolled in college classes experienced suicidal ideation, 6% made a suicide plan, 9% engaged in nonsuicidal self-injury, and 3% made a suicide attempt before they joined the military. Of those who made a suicide attempt after joining the military, half had experienced suicidal ideation and 17% had made a suicide attempt prior to joining the military. Results of the current study suggest that military personnel and veterans who experience SITB before they join the military are at significantly increased risk for making suicide attempts as a service member or veteran. This relationship is especially robust for suicide attempts. In the current study, 25% of participants who had made a suicide attempt prior to military service subsequently made a suicide attempt after joining the military, as compared to only 4% of those who had not made a suicide attempt prior to military service. Premilitary suicide attempts remained a significant a predictor of later suicide attempts even when controlling for the effects of premilitary suicidal ideation,

Table 3
Relationship of premilitary suicide risk with suicide attempts during or after military service.

	OR	(95% C.I.)	p	AOR[a]	(95% C.I.)	p
Study 1: College student veterans						
Premilitary suicidal ideation	3.70	(1.41–9.67)	.008	2.69	(.95–7.61)	.059
Premilitary suicide plan	2.13	(.45–9.96)	.339	1.27	(.22–7.31)	.788
Premilitary nonsuicidal self-injury	3.28	(1.01–10.67)	.049	1.81	(.47–6.93)	.389
Premilitary suicide attempt	9.06	(2.13–38.55)	.003	5.60	(1.24–25.39)	.025
Study 2: Outpatient clinical setting						
Premilitary suicidal ideation	5.81	(1.35–25.05)	.018	2.89	(.50–16.50)	.237
Premilitary suicide plan	13.70	(2.64–71.22)	.002	5.17	(.77–34.86)	.092
Premilitary nonsuicidal self-injury	2.41	(.26–22.05)	.436	1.30	(.22–7.53)	.774
Premilitary suicide attempt	15.56	(2.18–111.20)	.006	9.06	(.93–88.56)	.058

[a] Adjusting for gender, age, depression, and posttraumatic stress symptoms; AOR = adjusted odds ratio.

suicide plans, NSSI, current psychological distress, and demographic covariates. These findings suggest that at least half of military personnel and veterans who engage in suicidal behaviors have a history of SITB that predates their military service, and that individuals who attempt suicide before joining the military may possess a vulnerability to later suicidal behavior that may be relatively stronger than more recent risk factors such as emotional distress and demographic variables.

The current study is limited by self-report methodology, which can be vulnerable to recall bias, especially for historical events such as past SITB. Conclusions are also limited by the our use of military personnel and veterans who were enrolled in college classes which may not reflect the larger military and veteran populations, as student veterans could be a unique subgroup that differs from other military personnel and veterans. For example, results may not generalize to other subgroups such as those seeking out mental health treatment or to those who are not pursuing higher education degrees. Additional studies with other subgroups of military personnel and veterans are therefore needed to replicate these initial findings.

3. Study 2: military clinical sample

3.1. Method

3.1.1. Participants

Participants included 151 active duty military personnel (64.4% male, 35.6% female) who were currently in outpatient mental health treatment at two Air Force mental health clinics in the southern and intermountain U.S. Participants were predominantly (96.7%) Air Force personnel, with a much smaller number of Army personnel (3.3%). Age ranged from 20 to 55 years ($M = 34.98$, $SD = 8.36$), with the following rank distribution: 22.0% junior enlisted (E1–E4), 40.6% noncommissioned officer (E5–E6), 16.0% senior noncommissioned officer (E7–E9), 1.4% warrant officer, and 20.0% officer. Self-reported racial identity was 66.9% Caucasian, 20.5% African–American, 1.3% Asian, 1.3% Pacific Islander, 2.0% American Indian, and 5.3% "other." Hispanic/Latino ethnicity was additionally endorsed by 8.8% of patients. Participants had deployed a mean of 1.15 times ($SD = 1.35$, range: 0–6 deployments).

3.1.2. Procedures

Participants were recruited from two outpatient military mental health clinics, one located in the South U.S. and the second located in the West U.S. All current patients and new patients were invited to participate by clinic staff following their regularly-scheduled mental health appointments or intake appointments, without exclusion. The only inclusion criterion was to be currently accessing outpatient mental health treatment; there were no exclusion criteria. Patients voluntarily provided informed consent for the study and then completed an anonymous survey packet in the waiting room immediately following invitation and agreement to participate. Completed packets were returned to collection boxes located at the check-in desks of each clinic. 172 patients were invited to participate, of which 151 (87.8%) agreed to participate. The current study was reviewed and approved as exempt research by the Wright-Patterson Air Force Base Institutional Review Board, and conducted in accordance with the Helsinki Declaration.

3.1.3. Instruments

3.1.3.1. Self-Injurious Thoughts and Behaviors (SITB). The SITBI, described above in Study 1, was used to assess the presence, frequency, timing, and characteristics of SITB.

3.1.3.2. Depression. The PHQ-9, described above in Study 1, was used to assess depression symptom severity. Internal consistency for the PHQ-9 in the current sample was .91.

3.1.3.3. Posttraumatic stress. The PTSD Checklist, Military Version (PCL-M; [23]) was used to assess the severity of PTSD symptoms. The PCL-M is comprised of 17 items that assess each of the *DSM-IV-TR*-defined symptom criteria for PTSD, and directs respondents to indicate the severity with which each symptom of PTSD has been experienced within the past 30 days on a scale ranging from 1 ("not at all") to 5 ("extremely"). The scale has demonstrated excellent reliability and diagnostic utility for PTSD. Internal consistency for the PCL-M in the current sample was .97.

3.1.3.4. Current suicidal ideation. The Beck Scale for Suicide Ideation (BSSI; [24]) was used to measure the severity of current (i.e., within the past week) suicidal ideation such as frequency and duration of ideation, specificity of planning, and preparations for death. The BSSI has very good internal consistency and convergent validity, and has been found to predict future suicide attempts and death by suicide [24]. Internal consistency for the BSSI in the current sample was .87.

3.2. Results

3.2.1. What proportion of military personnel experienced SITB prior to joining the military?

Of the 151 military personnel receiving outpatient mental health treatment, 43 (28.5%) reported a lifetime history of suicidal ideation, 19 (12.6%) reported making a suicide plan, 14 (9.3%) reported nonsuicidal self-injury, and 11 (7.3%) reported making a suicide attempt. To determine if participants experienced any SITB before joining the military, we compared the reported age of first onset for suicidal ideation, suicide plans, nonsuicidal self-injury, and suicide attempts to participants' reported age when they joined the military. Prior to joining the military, 25 (16.6%) participants reported suicidal ideation, 9 (6.0%) reported making a suicide plan, 9 (6.0%) reported

engaging in nonsuicidal self-injury, and 5 (3.3%) reported making a suicide.

3.2.2. Of those military personnel who made a suicide attempt after joining the military, what proportion experienced SITB prior to joining the military?

Eight (5.3%) participants made a suicide attempt after joining the military. Four of these 8 (50.0%) reported suicidal ideation, 3 (37.5%) had made a suicide plan, 1 (12.5%) engaged in nonsuicidal self-injury, and 2 (25.0%) had made a suicide attempt prior to joining the military (see Table 2).

3.2.3. Does premilitary SITB increase risk for suicide attempts while in the military?

We next used binary logistic regression to test the associations among premilitary SITB with suicide attempts that occurred while in the military. Results are displayed in Table 3 and indicated that participants who made a suicide attempt while in the military were more likely to have experienced suicidal ideation (50.0% vs. 14.7%; OR = 5.81 [1.35–25.05], p = .018), suicide plans (37.5% vs. 4.2%; OR = 13.70 [2.64–71.22], p = .002), and suicide attempts (25.0% vs. 2.1%; OR = 15.56 [2.18–111.20], p = .006) prior to military service, but not more likely to have engaged in nonsuicidal self-injury prior to military service (12.5% vs. 5.6%; OR = 2.41 [.26–22.05], p = .436). When adjusting for gender, age, depression symptoms, and posttraumatic stress symptoms, premilitary suicide attempts (AOR = 9.06 [.93–88.56], p = .058) continued to be associated with suicide attempts during military service, although this fell just shy of the a priori level of statistical significance. We were unable to consider the simultaneous effects of all four types of premilitary SITB, however, due to model specification errors resulting from insufficient statistical power.

3.2.4. Are premilitary SITB associated with more severe suicidal episodes while in the military?

To determine if premilitary SITB are associated with greater severity current suicidal ideation, we used generalized regression modeling with robust estimation. Premilitary suicidal ideation, suicide plans, nonsuicidal self-injury, and suicide attempts were entered into the regression model simultaneously, the BSSI total score was used as the outcome variable (i.e., severity of recent suicidal ideation), and covariates included gender, age, depression symptoms, and posttraumatic stress symptoms. Results of analysis are displayed in Table 5 (Model A) and indicated that participants who had engaged in nonsuicidal self-injury (B = 4.547, SE = 1.661, p = .006) and made a suicide attempt (B = 8.743, SE = 3.157, p = .006) prior to joining the military reported significantly more severe suicidal ideation during the past week. Neither premilitary suicidal ideation (B = 1.103, SE = .921, p = .231) nor suicide plans (B = .106, SE = 2.227, p = .962) were associated with more severe recent suicidal ideation, however. Premilitary nonsuicidal self-injury (B = 3.085, SE = 1.434, p = .031) and suicide attempts (B = 8.398, SE = 2.756, p = .002) remained significant predictors of recent suicidal ideation even when controlling for more recent SITB that occurred *during* military service, the latter of which did not yield significant relationships with BSSI score (see Table 5, Model B).

Table 5
Generalized linear regression coefficients predicting severity of suicidal ideation within the past week among military personnel in outpatient mental health treatment.

	Model A			Model B		
	B	SE	p	B	SE	p
Gender	−.250	.488	.609	.001	.432	.997
Age	.017	.025	.501	.025	.022	.258
Depression	−.017	.050	.729	.005	.037	.888
Posttraumatic stress	.040	.020	.041	.015	.015	.297
Premilitary SI	1.103	.921	.231	−.123	1.020	.904
Premilitary plan	.106	2.227	.962	−1.096	2.154	.611
Premilitary NSSI	4.547	1.661	.006	3.085	1.434	.031
Premilitary attempt	8.743	3.157	.006	8.398	2.756	.002
SI during military	–	–	–	2.340	.930	.012
Plan during military	–	–	–	1.809	1.420	.203
NSSI during military	–	–	–	1.474	1.293	.254
Attempt during military	–	–	–	1.169	1.849	.527

3.3. Discussion

Results of the current study, conducted in an outpatient mental health clinic with active duty military personnel seeking mental health treatment, indicate that 17% of military personnel experienced suicidal ideation, 6% made a suicide plan, 6% engaged in NSSI, and 3% made a suicide attempt before they joined the military. Of those who made a suicide attempt while in the military, half reported suicidal ideation and one-quarter reported a suicide attempt prior to military service. The observed rates of premilitary SITB from the current study are very similar to those obtained from Study 1, suggesting convergence in findings across different samples and settings. Although the current study's small sample size limited statistical power, the current findings suggest that military personnel who made a suicide attempt prior to military service are more likely to make a suicide attempt while in the military. Specifically, 40% of participants in the current study who had made a suicide attempt prior to military service subsequently made a suicide attempt while in the military, as compared to only 4% of those who had not made a suicide attempt. Premilitary suicide attempts were also associated with significantly more severe suicidal ideation during the past week, even when controlling for more recent SITB that occurred during military service. This finding suggests that premilitary suicide attempts may lend greater vulnerability to suicidal crises than more recent SITB and emotional distress.

Although the results of Study 2 converge with those of Study 1, the current study is not without limitations. Specifically, the current study was conducted with a

relatively small sample that was predominantly comprised of Air Force personnel, which may limit generalizability to mental health settings across other branches of service and within the wider veteran population. The current study is also limited by the use of self-report methodology that relies on retrospective recall, similar to Study 1. Additional studies that use interview and behavioral methods to augment self-report methodology, and that utilize longitudinal designs are needed to further confirm these findings.

4. General discussion

Across two different samples of military personnel and veterans, we found fairly consistent rates of premilitary suicidal thoughts and behaviors. Specifically, 17%–22% of military personnel and veterans experienced suicidal ideation, 6% had made a suicide plan, 6%–9% had engaged in NSSI, and 3% had made a suicide attempt at some point in their lives prior to joining the military. Of those military personnel and veterans who had made suicide attempts during or after military service, 50% had experienced suicidal ideation and 17%–25% had made a suicide attempt before joining the military. Across both studies, premilitary suicide attempts were among the most prominent predictor of subsequent suicide attempts that occurred after joining the military, even when controlling for demographics and more recent emotional distress. The consistency of these findings across two samples that differed in setting and participant characteristics lends additional confidence to our findings. To our knowledge, these are the first studies to estimate the prevalence of SITB that occurred prior to military service and to explore their relationships with suicide attempts among military personnel and veterans.

Results of the current studies are consistent with the fluid vulnerability theory [17], which posits that some individuals have persisting, trait-like vulnerabilities to SITB that confer increased risk for suicide attempts over time. According to the fluid vulnerability theory, military personnel and veterans who have experienced SITB, especially suicide attempts, early in life (i.e., prior to military service) should be more likely to make suicide attempts after joining the military. Results of both studies are consistent with this hypothesis and suggest that some military personnel enter military service with elevated baseline risk that increases the likelihood of suicide attempts as a service member or veteran. Consistent with the fluid vulnerability theory, those military personnel and veterans with a history of premilitary suicide attempts disproportionately made suicide attempts while in the military and/or as veterans. Across both studies, up to 25% of the military personnel and veterans who made suicide attempts after joining the military came from the small subgroup of individuals (3% of each sample) who had made premilitary suicide attempts.

The fluid vulnerability theory also posits that suicidal episodes will be more severe among individuals with elevated baseline risk for suicide due to the interaction of elevated baseline risk with aggravating risk factors. In other words, because individuals with elevated baseline risk have a higher level of risk to begin with, suicidal crises are larger or more intense in overall magnitude. Consistent with this hypothesis are the results of Study 2, which found that premilitary suicide attempts and NSSI were more strongly associated with severity of current suicidal ideation. This relationship persisted even when considering recent emotional distress and even more recent SITB that occurred during military service. This latter finding supports the notion of trait vulnerabilities or predispositions for SITB among military personnel, and aligns with previous research suggesting that trait vulnerability models better explain SITB than state dependent models [28]. Along these lines, recent studies have reported that although recent situational stressors and life events are associated with suicidal behaviors among military personnel (e.g., [25]), dispositional factors such as gender and previous SITB play a relatively stronger role [9,10]. Taken together, the present studies suggest that premilitary SITB is a particularly strong risk factor for SITB that can persist over time into military service and beyond.

These findings highlight the importance of screening at the earliest stages of military enlistment (e.g., military entrance processing stations). Unfortunately, the predominant method for suicide risk screening is based on self-report methodology, which is vulnerable to response bias and motivation. Because potential military recruits with a strong desire to enter the military may have strong motivations or incentives to deny past suicide risk and other risk factors for suicide, current screening methods could potentially "miss" at-risk individuals. Aside from response bias and motivational issues, our current approaches for assessing suicide risk also suffer from considerable inaccuracies, most notably very high false positive rates (i.e., identifying individuals as being "at risk" when they will not actually attempt suicide). For example, although it is now well-established that past suicidal thoughts and behaviors are the most robust and reliable risk factors for future suicide risk (e.g., [12,26]), it is much more common for acutely suicidal individuals to *not* die by suicide in the future. In a review of 90 longitudinal studies, for instance, Owens et al.[27]) reported that 89%–95% of suicide attempters did not die by suicide within the 10 years following a first suicide attempt. Along these same lines, in the current studies only 25% of military personnel and veterans who had made a suicide attempt prior to joining the military subsequently made a suicide attempt, meaning that the vast majority of military personnel and veterans had not made another suicide attempt at the time of their participation. Thus, although routine screening of new recruits for past SITB should be encouraged and maintained, it is important to keep in mind that screening

nonetheless has limitations. The development and implementation of screening methods that are less susceptible to response bias could therefore hold promise for improving the detection of vulnerable service members. For instance, preliminary work with computerized implicit association tests that measure reaction time in response to suicide-specific stimuli have been shown to outperform self-report methods of suicidal thinking and behaviors [28,29], although this technology is still in the early stages of development and has not yet been tested in military samples.

Although several limitations for each individual study have already been briefly discussed, it is also important to note that both studies were cross-sectional in nature and neither of the samples were representative of the larger military population. Longitudinal studies with larger, more representative samples are needed to more definitely clarify how premilitary SITB translates into increased risk for service members while in the military, especially in combination with more recent life events and situational stressors that occur during or after military service. The current study is also unable to provide any information regarding *which* military personnel and veterans with a history of premilitary SITB are most vulnerable to suicidal behavior after joining the military, which would be an important next step for improving screening and selections. Despite these limitations, the consistency of results across both samples and the conclusions obtained provide new information about an aspect of military suicide risk that has not yet been fully explored, and implicate that risk factors and variables that precede military personnel and veterans should also be included in future studies focused on suicide in these populations [10,29,30].

References

[1] Department of Defense. DODSER: Department of Defense Suicide Event Report: calendar year 2010 annual report. Washington, DC: Department of Defense; 2011.

[2] Zaroya G. Army, Navy suicides at record high. USA Today; 2012. Available from http://www.usatoday.com/story/news/nation/2012/11/18/navy-suicides-army/1702403/.

[3] Bryan CJ, Clemans TA, Hernandez AM. Perceived burdensomeness, fearlessness of death, and suicidality among deployed military personnel. Personal Individ Differ 2012;52:374-9.

[4] Skopp NA, Trofimovich L, Grimes J, Oetjen-Gerdes L, Gahm GA. Relations between suicide and traumatic brain injury, psychiatric diagnoses, and relationship problems, active component, U.S. Armed Forces, 2001–2009. Med Surveill Mon Rep 2012;19:7-11.

[5] Luxton DD, Greenburg D, Ryan J, Niven A, Wheeler G, Mysliwiec V. Prevalence and impact of short sleep duration in redeployed OIF Soldiers. Sleep 2011;34:1189-95.

[6] Ribiero JD, Pease JL, Gutierrez PM, Silva C, Bernert RA, Rudd MD, et al. Sleep problems outperform depression and hopelessness as cross-sectional longitudinal predictors of suicidal ideation and behavior in young adults in the military. J Affect Disord 2012;136:743-50.

[7] Bryan CJ. The clinical utility of a brief measure of perceived burdensomeness and thwarted belongingness for the detection of suicidal military personnel. J Clin Psychol 2011;67:981-92.

[8] Bryan CJ, Morrow CE, Anestis MD, Joiner TE. A preliminary test of the interpersonal-psychological theory of suicidal behavior in a military sample. Personal Individ Differ 2010;48:347-50.

[9] Griffith JE, Vaitkus M. Perspectives on suicide in the Army National Guard. Thousand Oaks, CA: Armed Forces and Society; 2013.

[10] Griffith J. Army suicides: "knowns" and interpretative framework for future directions. Mil Psychol 2012;24:488-512.

[11] Brown MZ, Comtois KA, Linehan MM. Reasons for suicide attempts and nonsuicidal self-injury in women with borderline personality disorder. J Abnorm Psychol 2002;111:198-202.

[12] Cavanagh JTO, Owens DGC, Johnstone EC. Suicide and undetermined death in southeast Scotland: a case–control study using the psychological autopsy method. Psychol Med 1999;29:1141-9.

[13] Joiner TE, Conwell Y, Fitzpatrick KK, Witte TK, Schmidt NB, Berlim MT, et al. Four studies on how past and current suicidality relate even when "everything but the kitchen sink" is covaried. J Abnorm Psychol 2005;114:291-303.

[14] Forman EM, Berk MS, Henriques GR, Brown GK, Beck AT. History of multiple suicide attempts as a behavioral marker of severe psychopathology. Am J Psychiatr 2004;161:437-43.

[15] Gispert M, Davis MS, Marsh L, Wheeler K. Predictive factors in repeated suicide attempts by adolescents. Hosp Community Psychiatry 1987;38:390-3.

[16] Rudd MD, Joiner Jr TE, Rajab M. Treating suicidal behavior. New York, NY: Guilford Press; 2000.

[17] Stein D, Apter A, Ratzoni G, Har-Even D, Avidan G. Association between multiple suicide attempts and negative affects in adolescents. J Am Acad Child Adolesc Psychiatry 1998;37:488-94.

[18] Rudd MD. Fluid vulnerability theory: a cognitive approach to understanding the process of acute and chronic suicide risk. In: & Ellis TE, editor. Suicide and cognition: theory, research, and therapy. Washington, DC: American Psychological Association; 2006. p. 355-68.

[19] Nock MK, Holmberg EB, Photos VI, Michel BD. Self-Injurious Thoughts and Behaviors Interview: development, reliability, and validity in an adolescent sample. Psychol Assess 2007;19:309-17.

[20] Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med 2001;16:606-13.

[21] Lang AJ, Stein MB. An abbreviated PTSD checklist for use as a screening instrument in primary care. Beh Res Ther 2009;43:585-94.

[22] Weathers FW, Litz BT, Husda JA, Keane, TM. The PTSD Checklist-Civilian Version (PCL-C). Boston, MA: National Center for Veterans Studies.

[23] Weathers FW, Litz BT, Herman DS, Husda JA, Keane TM. The PTSD Checklist (PCL): Reliability ,validity, and diagnostic utility. San Antonio, TX: Paper presented at the annual meeting of the International Society for Traumatic Stress Studies; 1993.

[24] Beck AT, Steer RA. Manual for the Beck Scale for Suicide Ideation. San Antonio, TX: Psychological Corporation; 1991.

[25] Bryan CJ, Rudd MD. Life stressors, emotional distress, and trauma-related thoughts occurring in the 24 h preceding active duty U.S. Soldiers' suicide attempts. J Psychiatr Res 2012;46:843-8.

[26] Bryan CJ, Rudd MD. Advances in the assessment of suicide risk. J Clin Psychol In Session 2006;62:185-200.

[27] Owens D, Horrocks J, House A. Fatal and non-fatal repetition of self-harm: systematic review. Br J Psychiatry 2002;181:193-9.

[28] Nock MK, Park JM, Finn CT, Deliberto TL, Dour HJ, Banaji MR. Measuring the suicidal mind: implicit cognition predicts suicidal behavior. Psychol Sci 2010;21:511-7.

[29] Clark DC, Gibbons RD, Fawcett J, Scheftner WA. What is the mechanism by which suicide attempts predispose to later suicide attempts? A mathematical model. J Abnorm Psychol 1989;98:42-9.

[30] Cha CB, Najmi S, Park JM, Finn CT, Nock MK. Attentional bias toward suicide-related stimuli predicts suicidal behavior. J Abnorm Psychol 2010;119:616-22.

Hayes directory

May 19, 2014

Hormone Therapy for the Treatment of Gender Dysphoria

PURPOSE OF TECHNOLOGY:

Continuous feminizing or masculinizing hormone therapy is administered to some adolescents and adults who have a diagnosis of gender identity disorder (GID) or gender dysphoria (GD). The purpose of this therapy is to facilitate a transgender individual's desire to transition to a sexual identity other than his or her biological (natal) sex. Some individuals undergo hormone therapy as a prelude to sex reassignment surgery; other individuals seeking gender transition undergo hormone therapy without ever undergoing any type of surgery.

EXECUTIVE SUMMARY:

Health Problem: Individuals with gender dysphoria (GD) experience a severe incongruity between their biological sex and gender identity.

The prevalence of transsexualism is estimated to be 1 in 11,900 to 1 in 45,000 persons for male-to-female (MtF) prevalence and 1 in 30,400 to 1 in 200,000 for female-to-male (FtM) prevalence. The prevalence of gender dysphoria within the transsexual population is unknown. The earlier term, *gender identity disorder* (GID), has given way to *gender dysphoria* (GD). This change was intended to reflect a consensus that gender nonconformity is not a psychiatric disorder, as it was previously categorized. However, since the condition may cause clinically significant distress and since a diagnosis is necessary for access to medical treatment, the new term was proposed. The diagnostic criteria for GD outlined in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), as well as the criteria for GID in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV), require that the individual believes there is a marked difference between the gender assigned to him or her by others and the gender he or she experiences or wishes to express. Additional criteria must also be met for a diagnosis of GD.

Determinants: The determinants of gender dysphoria are poorly understood. Experts believe that gender identity develops as the result of a combination of biological factors, possibly including genetic and/or prenatal and perinatal hormonal influences, and environmental influences that have psychological effects.

Treatment: Individuals with GD seeking professional help begin with psychotherapy. An American Psychiatric Association Task Force recommends 2 goals for psychotherapy: (1) to explore issues related to the individual's commitment to living in the cross-gender role; and (2) to fully explore other options for the patient, including whether to live as a homosexual person without medical and surgical treatments for gender transition. The full therapeutic approach to GD consists of 3 elements or phases, typically in the following order: (1) hormones of the desired gender; (2) real-life experience for 12 months in the desired role; and (3) surgery to change the genitalia and other sex characteristics (e.g., breast reconstruction or mastectomy). However, not everyone with GD needs or wants all elements of this triadic approach.

Technology: The goal of cross-sex hormone therapy for GD is to alter secondary sex characteristics, including such features as fat distribution, hair growth, voice pitch, and muscle strength.

Cross-sex hormone therapy includes estrogens and testosterone-blocking agents administered to natal (biologic) males and androgens (usually testosterone) administered to natal females. Adolescents with a

diagnosis of GD may be eligible for puberty-delaying hormones as soon as pubertal changes begin; the effects of this treatment are fully reversible.

Rationale: Hormone therapy serves to feminize or masculinize the body to facilitate an individual's desire to live in the gender role opposite from biological sex.

Controversy: Numerous professional groups have advocated for third-party payers to cover all medically necessary treatments to alleviate GD. However, the condition does not readily fit traditional concepts of medical necessity since research to date has not established anatomical or physiological anomalies associated with GD.

An evidence-based assessment of the effectiveness of hormone therapy for alleviation of symptoms associated with GD and improvement of recipients' well being can make a helpful contribution to this controversy.

Relevant Questions:

- Has feminizing or masculinizing hormone therapy in adolescents and adults been shown to be effective in improving patient-important outcomes such as relief of symptoms of GD, psychological well-being, sex-specific function, quality of life (QOL), functional status, or employment status?
- How does hormone therapy alone as a treatment for GD compare with sex reassignment surgery (SRS)?
- Is feminizing or masculinizing hormone therapy safe?
- Have definitive patient selection criteria been established for feminizing or masculinizing hormone therapy as a treatment for GD?

Evidence Base: Ten peer-reviewed studies, primarily of a cross-sectional or pretest-posttest design, assessing the effectiveness of hormone therapy plus 11 other studies with safety data for ≥ 100 adult patients or any safety data for adolescent patients.

Search Dates: Inception of databases to April 2014.

Sample Sizes: 50 to 376 pts (effectiveness); 1 to 2307 (safety).

Patients: Adult or adolescent patients with a diagnosis of GD. Mean age in effectiveness studies of adults, 29 to 45 years. Mean age in safety studies of adults, 41 to 52 years. Typical patients had not undergone either chest or genital SRS.

Interventions: Cross-sex hormone therapy or pubertal suppression therapy.

Comparisons: No medical treatment, SRS (chest and/or genital).

Outcome Measures: QOL, functional status, or employment status; psychological well-being (e.g., depression, self-esteem, reduced incidence of suicide); sexual function and satisfaction; and complications of hormone therapy, regret, or any other adverse event attributable to treatment.

Follow-Up: 3 months to 1 year (effectiveness studies, usually not reported); 2 to 23 years (safety studies).

Findings: Studies that evaluated hormone therapy in adults suggested the possibility of a small effect on QOL and function, specific psychological symptoms, social support, and alcoholism. The findings were inconsistent with respect to a relationship between hormone therapy and general psychological health, substance abuse, suicide attempts, and sexual function and satisfaction (9 studies).

QOL/Functional Status (Adults): 5 studies (≥ 812 participants; ≥ 796 FtM) reported positive findings on ≥ 1 scale, but usually not on all scales used in the study. Differences between treated and untreated study participants were very small or of unknown magnitude in cross-sectional analyses that adjusted for potential confounders but were substantial in 1 pretest-posttest study.

Psychological Symptoms (Adults): In 6 studies, the results for a variety of specific psychological states (e.g., depression, anxiety) were positive, but overall measures of change in psychological symptomatology were mixed. In the studies that provided information on the magnitude of scales and/or cutoff points for normal ranges, the differences, if observed, were generally very small and scores for patients representing the control condition were typically already in the normal or mild range.

Other Outcomes (Adults): Improved social support and reduced alcoholism were suggested but the results regarding substance abuse were conflicting (2 studies). The prevalence of suicide attempts was not affected by hormone therapy (2 studies). Findings regarding the association of hormone therapy with sexual function and satisfaction were mixed (3 studies).

Comparative Effectiveness of Hormone Therapy Alone Versus Surgery (Adults): The evidence was too sparse to allow any conclusion regarding the comparative benefits of SRS and hormone therapy alone.

Adolescents (Pubertal Suppression): Evidence from a single small study was insufficient to suggest conclusions regarding the value of pubertal suppression therapy.

Safety (Adults): Hormone therapy has the potential to alter patients' risk of cardiovascular disease, cerebrovascular and thromboembolic events, osteoporosis, and cancer. The risk of no benefit must also be considered. There was an increased risk of cerebrovascular and thromboembolic events in MtF patients. There was *no* elevated risk of cancer in FtM patients. Hormone therapy and subsequent SRS failed to bring overall mortality, suicide rates, or death from illicit drug use in MtF patients close to rates observed in the general male population. It is possible that mortality is nevertheless reduced by these treatments, but that cannot be determined from the available evidence. Mortality data for FtM patients is less clear than for MtF patients. For safety issues other than the specific findings described here, the evidence was insufficient to suggest conclusions. There was no evidence concerning the prevalence of regret after hormone therapy.

Safety (Adolescents): The chief risks cited for pubertal suppression therapy are related to the possibility the GD could worsen because of the delay in definitive treatment. No serious side effects during pubertal suppression were reported. Older adolescents may begin cross-sex hormone therapy, but only a single case report provided long-term data for individuals who began therapy as adolescents. The body of evidence

concerning the safety of pubertal suppression and cross-sex hormone therapy in adolescents was too sparse and the studies too limited to suggest conclusions.

Patient Selection Criteria: The evidence is insufficient to support patient selection criteria for hormone therapy to treat GD. Professional associations recommend that hormone therapy be restricted to patients who have been referred for such treatment by a health professional who is qualified to assess GD. In adults, medical conditions that can be exacerbated by endocrine treatment must be evaluated and addressed prior to initiation of treatment. Practice guidelines advise that pubertal suppression therapy should not be initiated until adolescents have at least reached Tanner stage 2.

Quality of Evidence: Very low.

Most studies were considered to be of very poor quality due to the nature of the study designs, failure to control for confounders, possible recall bias and selection bias, lack of blinded outcomes assessment, and/or unknown or short follow-up intervals. Not all positive results were statistically significant. For other outcomes, the findings were conflicting. For QOL and function, almost all of the available data were collected from FtM individuals for whom a diagnosis of GD could not be verified. For outcomes other than QOL and function, the quantity of evidence was very small. In safety studies, the relatively young age of study participants at the time of outcomes assessment and the lack of adjustment for risk factors in comparisons of study participants with age-matched general populations seriously diminishes the reliability of the available adverse event rates. No studies analyzed safety outcomes according to whether patients had undergone SRS, which is significant since hormone doses are lowered after SRS. The safety evidence described for adults in the **EXECUTIVE SUMMARY** is considered to be of low quality, but all other adult safety evidence was considered to be of very low quality.

Conclusions: A substantial number of studies of cross-sex hormone therapy each show some positive findings suggesting improvement in well-being after cross-sex hormone therapy. However, there are several serious limitations to the evidence.

Statistically significant improvements have not been consistently demonstrated by multiple studies for most outcomes. Five studies representing primarily female-to-male (FtM) adults reported modestly positive findings on ≥ 1 of the multiple quality of life (QOL) or functional scales for individuals who had undergone cross-sex hormone therapy, but for most of these individuals, a diagnosis of gender dysphoria (GD) was not confirmed. Evidence regarding QOL and function in male-to-female (MtF) adults was very sparse. Evidence for less comprehensive measures of well-being in adult recipients of cross-sex hormone therapy was directly applicable to GD patients but was sparse and/or conflicting. The study designs do not permit conclusions of causality and studies generally had weaknesses associated with study execution as well. There are potentially long-term safety risks associated with hormone therapy but none have been proven or conclusively ruled out. The evidence for adolescent populations was too sparse to suggest any conclusions.

Hayes Rating:

Hormone-GD

C - For hormone therapy to treat GD in adults for whom a qualified mental health professional has made a formal diagnosis of GD and a recommendation for hormone therapy and who do not have any medical contraindications to endocrine therapy.
This Rating reflects the reporting of some positive evidence but serious limitations in the evidence of both effectiveness and safety. Also of concern is the fact that the magnitude of suggested benefit was typically small, which diminishes confidence in a true treatment effect.

D2 - For pubertal suppression therapy or cross-sex hormone therapy in adolescents.
This Rating is based on a paucity of data.

INSIGHTS:

- Since part of the reason for the psychopathology experienced by transgender persons has to do with the reactions or expected reactions of family and society, evolving social norms theoretically could diminish the perceived need to undergo physical changes in order to live in the desired gender role.
- The benefits of hormone therapy appear to be of very small magnitude in the studies published to date. The literature does not provide guidance for assessing the clinical relevance of improvements in this population. One factor that may prevent the observation of large improvements is that individuals with a better social support and a better baseline psychological profile are probably seen to be better candidates by the mental health professionals who make recommendations for treatment.
- As the population of recipients of hormone therapy ages, better data concerning long-term safety risks should become available.
- Most studies have been performed in Europe. The results may not be generalizable to the United States.
- The studies selected for this report reflect the diagnostic criteria of DSM-IV, rather than the somewhat expanded criteria published in 2013 in the DSM-5.

Endocrine Treatment of Gender-Dysphoric/ Gender-Incongruent Persons: An Endocrine Society* Clinical Practice Guideline

Wylie C. Hembree,[1] Peggy T. Cohen-Kettenis,[2] Louis Gooren,[3] Sabine E. Hannema,[4] Walter J. Meyer,[5] M. Hassan Murad,[6] Stephen M. Rosenthal,[7] Joshua D. Safer,[8] Vin Tangpricha,[9] and Guy G. T'Sjoen[10]

[1]New York Presbyterian Hospital, Columbia University Medical Center, New York, New York 10032 (Retired); [2]VU University Medical Center, 1007 MB Amsterdam, Netherlands (Retired); [3]VU University Medical Center, 1007 MB Amsterdam, Netherlands (Retired); [4]Leiden University Medical Center, 2300 RC Leiden, Netherlands; [5]University of Texas Medical Branch, Galveston, Texas 77555; [6]Mayo Clinic Evidence-Based Practice Center, Rochester, Minnesota 55905; [7]University of California San Francisco, Benioff Children's Hospital, San Francisco, California 94143; [8]Boston University School of Medicine, Boston, Massachusetts 02118; [9]Emory University School of Medicine and the Atlanta VA Medical Center, Atlanta, Georgia 30322; and [10]Ghent University Hospital, 9000 Ghent, Belgium

*Cosponsoring Associations: American Association of Clinical Endocrinologists, American Society of Andrology, European Society for Pediatric Endocrinology, European Society of Endocrinology, Pediatric Endocrine Society, and World Professional Association for Transgender Health.

Objective: To update the "Endocrine Treatment of Transsexual Persons: An Endocrine Society Clinical Practice Guideline," published by the Endocrine Society in 2009.

Participants: The participants include an Endocrine Society–appointed task force of nine experts, a methodologist, and a medical writer.

Evidence: This evidence-based guideline was developed using the Grading of Recommendations, Assessment, Development, and Evaluation approach to describe the strength of recommendations and the quality of evidence. The task force commissioned two systematic reviews and used the best available evidence from other published systematic reviews and individual studies.

Consensus Process: Group meetings, conference calls, and e-mail communications enabled consensus. Endocrine Society committees, members and cosponsoring organizations reviewed and commented on preliminary drafts of the guidelines.

Conclusion: Gender affirmation is multidisciplinary treatment in which endocrinologists play an important role. Gender-dysphoric/gender-incongruent persons seek and/or are referred to endocrinologists to develop the physical characteristics of the affirmed gender. They require a safe and effective hormone regimen that will (1) suppress endogenous sex hormone secretion determined by the person's genetic/gonadal sex and (2) maintain sex hormone levels within the normal range for the person's affirmed gender. Hormone treatment is not recommended for prepubertal gender-dysphoric/gender-incongruent persons. Those clinicians who recommend gender-affirming endocrine treatments—appropriately trained diagnosing clinicians (required), a mental health provider for adolescents (required) and mental health

ISSN Print 0021-972X ISSN Online 1945-7197
Printed in USA

Received 24 July 2017. Accepted 24 August 2017.
First Published Online 13 September 2017

Abbreviations: BMD, bone mineral density; DSD, disorder/difference of sex development; DSM, Diagnostic and Statistical Manual of Mental Disorders; GD, gender dysphoria; GnRH, gonadotropin-releasing hormone; ICD, International Statistical Classification of Diseases and Related Health Problems; MHP, mental health professional; VTE, venous thromboembolism.

professional for adults (recommended)—should be knowledgeable about the diagnostic criteria and criteria for gender-affirming treatment, have sufficient training and experience in assessing psychopathology, and be willing to participate in the ongoing care throughout the endocrine transition. We recommend treating gender-dysphoric/gender-incongruent adolescents who have entered puberty at Tanner Stage G2/B2 by suppression with gonadotropin-releasing hormone agonists. Clinicians may add gender-affirming hormones after a multidisciplinary team has confirmed the persistence of gender dysphoria/gender incongruence and sufficient mental capacity to give informed consent to this partially irreversible treatment. Most adolescents have this capacity by age 16 years old. We recognize that there may be compelling reasons to initiate sex hormone treatment prior to age 16 years, although there is minimal published experience treating prior to 13.5 to 14 years of age. For the care of peripubertal youths and older adolescents, we recommend that an expert multidisciplinary team comprised of medical professionals and mental health professionals manage this treatment. The treating physician must confirm the criteria for treatment used by the referring mental health practitioner and collaborate with them in decisions about gender-affirming surgery in older adolescents. For adult gender-dysphoric/gender-incongruent persons, the treating clinicians (collectively) should have expertise in transgender-specific diagnostic criteria, mental health, primary care, hormone treatment, and surgery, as needed by the patient. We suggest maintaining physiologic levels of gender-appropriate hormones and monitoring for known risks and complications. When high doses of sex steroids are required to suppress endogenous sex steroids and/or in advanced age, clinicians may consider surgically removing natal gonads along with reducing sex steroid treatment. Clinicians should monitor both transgender males (female to male) and transgender females (male to female) for reproductive organ cancer risk when surgical removal is incomplete. Additionally, clinicians should persistently monitor adverse effects of sex steroids. For gender-affirming surgeries in adults, the treating physician must collaborate with and confirm the criteria for treatment used by the referring physician. Clinicians should avoid harming individuals (via hormone treatment) who have conditions other than gender dysphoria/gender incongruence and who may not benefit from the physical changes associated with this treatment. (***J Clin Endocrinol Metab* 102: 3869–3903, 2017**)

Summary of Recommendations

1.0 Evaluation of youth and adults

1.1. We advise that only trained mental health professionals (MHPs) who meet the following criteria should diagnose gender dysphoria (GD)/gender incongruence in adults: (1) competence in using the Diagnostic and Statistical Manual of Mental Disorders (DSM) and/or the International Statistical Classification of Diseases and Related Health Problems (ICD) for diagnostic purposes, (2) the ability to diagnose GD/gender incongruence and make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (3) training in diagnosing psychiatric conditions, (4) the ability to undertake or refer for appropriate treatment, (5) the ability to psychosocially assess the person's understanding, mental health, and social conditions that can impact gender-affirming hormone therapy, and (6) a practice of regularly attending relevant professional meetings. (Ungraded Good Practice Statement)

1.2. We advise that only MHPs who meet the following criteria should diagnose GD/gender incongruence in children and adolescents: (1) training in child and adolescent developmental psychology and psychopathology, (2) competence in using the DSM and/or the ICD for diagnostic purposes, (3) the ability to make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (4) training in diagnosing psychiatric conditions, (5) the ability to undertake or refer for appropriate treatment, (6) the ability to psychosocially assess the person's understanding and social conditions that can impact gender-affirming hormone therapy, (7) a practice of regularly attending relevant professional meetings, and (8) knowledge of the criteria for puberty blocking and gender-affirming hormone treatment in adolescents. (Ungraded Good Practice Statement)

1.3. We advise that decisions regarding the social transition of prepubertal youths with GD/gender incongruence are made with the assistance of an MHP or another experienced professional. (Ungraded Good Practice Statement).

doi: 10.1210/jc.2017-01658

1.4. We recommend against puberty blocking and gender-affirming hormone treatment in prepubertal children with GD/gender incongruence. (1 ⊕⊕OO)

1.5. We recommend that clinicians inform and counsel all individuals seeking gender-affirming medical treatment regarding options for fertility preservation prior to initiating puberty suppression in adolescents and prior to treating with hormonal therapy of the affirmed gender in both adolescents and adults. (1 ⊕⊕⊕O)

2.0 Treatment of adolescents

2.1. We suggest that adolescents who meet diagnostic criteria for GD/gender incongruence, fulfill criteria for treatment, and are requesting treatment should initially undergo treatment to suppress pubertal development. (2 ⊕⊕OO)

2.2. We suggest that clinicians begin pubertal hormone suppression after girls and boys first exhibit physical changes of puberty. (2 ⊕⊕OO)

2.3. We recommend that, where indicated, GnRH analogues are used to suppress pubertal hormones. (1 ⊕⊕OO)

2.4. In adolescents who request sex hormone treatment (given this is a partly irreversible treatment), we recommend initiating treatment using a gradually increasing dose schedule after a multidisciplinary team of medical and MHPs has confirmed the persistence of GD/gender incongruence and sufficient mental capacity to give informed consent, which most adolescents have by age 16 years. (1 ⊕⊕OO).

2.5. We recognize that there may be compelling reasons to initiate sex hormone treatment prior to the age of 16 years in some adolescents with GD/gender incongruence, even though there are minimal published studies of gender-affirming hormone treatments administered before age 13.5 to 14 years. As with the care of adolescents ≥16 years of age, we recommend that an expert multidisciplinary team of medical and MHPs manage this treatment. (1 ⊕OOO)

2.6. We suggest monitoring clinical pubertal development every 3 to 6 months and laboratory parameters every 6 to 12 months during sex hormone treatment. (2 ⊕⊕OO)

3.0 Hormonal therapy for transgender adults

3.1. We recommend that clinicians confirm the diagnostic criteria of GD/gender incongruence and the criteria for the endocrine phase of gender transition before beginning treatment. (1 ⊕⊕⊕O)

3.2. We recommend that clinicians evaluate and address medical conditions that can be exacerbated by hormone depletion and treatment with sex hormones of the affirmed gender before beginning treatment. (1 ⊕⊕⊕O)

3.3. We suggest that clinicians measure hormone levels during treatment to ensure that endogenous sex steroids are suppressed and administered sex steroids are maintained in the normal physiologic range for the affirmed gender. (2 ⊕⊕OO)

3.4. We suggest that endocrinologists provide education to transgender individuals undergoing treatment about the onset and time course of physical changes induced by sex hormone treatment. (2 ⊕OOO)

4.0 Adverse outcome prevention and long-term care

4.1. We suggest regular clinical evaluation for physical changes and potential adverse changes in response to sex steroid hormones and laboratory monitoring of sex steroid hormone levels every 3 months during the first year of hormone therapy for transgender males and females and then once or twice yearly. (2 ⊕⊕OO)

4.2. We suggest periodically monitoring prolactin levels in transgender females treated with estrogens. (2 ⊕⊕OO)

4.3. We suggest that clinicians evaluate transgender persons treated with hormones for cardiovascular risk factors using fasting lipid profiles, diabetes screening, and/or other diagnostic tools. (2 ⊕⊕OO)

4.4. We recommend that clinicians obtain bone mineral density (BMD) measurements when risk factors for osteoporosis exist, specifically in those who stop sex hormone therapy after gonadectomy. (1 ⊕⊕OO)

4.5. We suggest that transgender females with no known increased risk of breast cancer follow breast-screening guidelines recommended for non-transgender females. (2 ⊕⊕OO)

4.6. We suggest that transgender females treated with estrogens follow individualized screening according to personal risk for prostatic disease and prostate cancer. (2 ⊕OOO)

4.7. We advise that clinicians determine the medical necessity of including a total hysterectomy and oophorectomy as part of gender-affirming surgery. (Ungraded Good Practice Statement)

5.0 Surgery for sex reassignment and gender confirmation

5.1. We recommend that a patient pursue genital gender-affirming surgery only after the MHP and the clinician responsible for endocrine transition therapy both agree that surgery is medically necessary and would benefit the patient's overall health and/or well-being. (1 ⊕⊕OO)

5.2. We advise that clinicians approve genital gender-affirming surgery only after completion of at least 1 year of consistent and compliant hormone treatment, unless hormone therapy is not desired or medically contraindicated. (Ungraded Good Practice Statement)

5.3. We advise that the clinician responsible for endocrine treatment and the primary care provider ensure appropriate medical clearance of transgender individuals for genital gender-affirming surgery and collaborate with the surgeon regarding hormone use during and after surgery. (Ungraded Good Practice Statement)

5.4. We recommend that clinicians refer hormone-treated transgender individuals for genital surgery when: (1) the individual has had a satisfactory social role change, (2) the individual is satisfied about the hormonal effects, and (3) the individual desires definitive surgical changes. (1 ⊕OOO)

5.5. We suggest that clinicians delay gender-affirming genital surgery involving gonadectomy and/or hysterectomy until the patient is at least 18 years old or legal age of majority in his or her country. (2 ⊕⊕OO).

5.6. We suggest that clinicians determine the timing of breast surgery for transgender males based upon the physical and mental health status of the individual. There is insufficient evidence to recommend a specific age requirement. (2 ⊕OOO)

Changes Since the Previous Guideline

Both the current guideline and the one published in 2009 contain similar sections. Listed here are the sections contained in the current guideline and the corresponding number of recommendations: Introduction, Evaluation of Youth and Adults (5), Treatment of Adolescents (6), Hormonal Therapy for Transgender Adults (4), Adverse Outcomes Prevention and Long-term Care (7), and Surgery for Sex Reassignment and Gender Confirmation (6). The current introduction updates the diagnostic classification of "gender dysphoria/gender incongruence." It also reviews the development of "gender identity" and summarizes its natural development. The section on clinical evaluation of both youth and adults, defines in detail the professional qualifications required of those who diagnose and treat both adolescents and adults. We advise that decisions regarding the social transition of prepubertal youth are made with the assistance of a mental health professional or similarly experienced professional. We recommend against puberty blocking followed by gender-affirming hormone treatment of prepubertal children. Clinicians should inform pubertal children, adolescents, and adults seeking gender-confirming treatment of their options for fertility preservation. Prior to treatment, clinicians should evaluate the presence of medical conditions that may be worsened by hormone depletion and/or treatment. A multidisciplinary team, preferably composed of medical and mental health professionals, should monitor treatments. Clinicians evaluating transgender adults for endocrine treatment should confirm the diagnosis of persistent gender dysphoria/gender incongruence. Physicians should educate transgender persons regarding the time course of steroid-induced physical changes. Treatment should include periodic monitoring of hormone levels and metabolic parameters, as well as assessments of bone density and the impact upon prostate, gonads, and uterus. We also make recommendations for transgender persons who plan genital gender-affirming surgery.

Method of Development of Evidence-Based Clinical Practice Guidelines

The Clinical Guidelines Subcommittee (CGS) of the Endocrine Society deemed the diagnosis and treatment of individuals with GD/gender incongruence a priority area for revision and appointed a task force to formulate evidence-based recommendations. The task force followed the approach recommended by the Grading of Recommendations, Assessment, Development, and Evaluation group, an international group with expertise in the development and implementation of evidence-based guidelines (1). A detailed description of the grading scheme has been published elsewhere (2). The task force used the best available research evidence to develop the recommendations. The task force also used consistent language and graphical descriptions of both the strength of a recommendation and the quality of evidence. In terms of the strength of the recommendation, strong recommendations use the phrase "we recommend" and the number 1, and weak recommendations use the phrase "we suggest" and the number 2. Cross-filled circles indicate the quality of the evidence, such that ⊕OOO denotes very low–quality evidence; ⊕⊕OO, low quality; ⊕⊕⊕O, moderate quality; and ⊕⊕⊕⊕, high quality. The task force has confidence that persons who receive care according to the strong recommendations will derive, on average, more benefit than harm. Weak recommendations require more careful consideration of the person's circumstances, values, and preferences to determine the best course of action. Linked to each recommendation is a description of the evidence and the

doi: 10.1210/jc.2017-01658

values that the task force considered in making the recommendation. In some instances, there are remarks in which the task force offers technical suggestions for testing conditions, dosing, and monitoring. These technical comments reflect the best available evidence applied to a typical person being treated. Often this evidence comes from the unsystematic observations of the task force and their preferences; therefore, one should consider these remarks as suggestions.

In this guideline, the task force made several statements to emphasize the importance of shared decision-making, general preventive care measures, and basic principles of the treatment of transgender persons. They labeled these "Ungraded Good Practice Statement." Direct evidence for these statements was either unavailable or not systematically appraised and considered out of the scope of this guideline. The intention of these statements is to draw attention to these principles.

The Endocrine Society maintains a rigorous conflict-of-interest review process for developing clinical practice guidelines. All task force members must declare any potential conflicts of interest by completing a conflict-of-interest form. The CGS reviews all conflicts of interest before the Society's Council approves the members to participate on the task force and periodically during the development of the guideline. All others participating in the guideline's development must also disclose any conflicts of interest in the matter under study, and most of these participants must be without any conflicts of interest. The CGS and the task force have reviewed all disclosures for this guideline and resolved or managed all identified conflicts of interest.

Conflicts of interest are defined as remuneration in any amount from commercial interests; grants; research support; consulting fees; salary; ownership interests [*e.g.*, stocks and stock options (excluding diversified mutual funds)]; honoraria and other payments for participation in speakers' bureaus, advisory boards, or boards of directors; and all other financial benefits. Completed forms are available through the Endocrine Society office.

The Endocrine Society provided the funding for this guideline; the task force received no funding or remuneration from commercial or other entities.

Commissioned Systematic Review

The task force commissioned two systematic reviews to support this guideline. The first one aimed to summarize the available evidence on the effect of sex steroid use in transgender individuals on lipids and cardiovascular outcomes. The review identified 29 eligible studies at moderate risk of bias. In transgender males (female to male), sex steroid therapy was associated with a statistically significant increase in serum triglycerides and low-density lipoprotein cholesterol levels. High-density lipoprotein cholesterol levels decreased significantly across all follow-up time periods. In transgender females (male to female), serum triglycerides were significantly higher without any changes in other parameters. Few myocardial infarction, stroke, venous thromboembolism (VTE), and death events were reported. These events were more frequent in transgender females. However, the quality of the evidence was low. The second review summarized the available evidence regarding the effect of sex steroids on bone health in transgender individuals and identified 13 studies. In transgender males, there was no statistically significant difference in the lumbar spine, femoral neck, or total hip BMD at 12 and 24 months compared with baseline values before initiating masculinizing hormone therapy. In transgender females, there was a statistically significant increase in lumbar spine BMD at 12 months and 24 months compared with baseline values before initiation of feminizing hormone therapy. There was minimal information on fracture rates. The quality of evidence was also low.

Introduction

Throughout recorded history (in the absence of an endocrine disorder) some men and women have experienced confusion and anguish resulting from rigid, forced conformity to sexual dimorphism. In modern history, there have been numerous ongoing biological, psychological, cultural, political, and sociological debates over various aspects of gender variance. The 20th century marked the emergence of a social awakening for men and women with the belief that they are "trapped" in the wrong body (3). Magnus Hirschfeld and Harry Benjamin, among others, pioneered the medical responses to those who sought relief from and a resolution to their profound discomfort. Although the term transsexual became widely known after Benjamin wrote "The Transsexual Phenomenon" (4), it was Hirschfeld who coined the term "transsexual" in 1923 to describe people who want to live a life that corresponds with their experienced gender vs their designated gender (5). Magnus Hirschfeld (6) and others (4, 7) have described other types of trans phenomena besides transsexualism. These early researchers proposed that the gender identity of these people was located somewhere along a unidimensional continuum. This continuum ranged from all male through "something in between" to all female. Yet such a classification does not take into account that people may have gender identities outside this continuum. For instance, some experience themselves as having both a male and female gender identity, whereas others completely renounce any gender classification (8, 9). There are also reports of individuals experiencing a continuous and rapid involuntary alternation between a male and female identity (10) or men who do not experience themselves as men but do not want to live as women (11, 12). In some countries, (*e.g.*, Nepal, Bangladesh, and Australia), these nonmale or nonfemale genders are officially recognized (13). Specific treatment protocols, however, have not yet been developed for these groups.

Instead of the term transsexualism, the current classification system of the American Psychiatric Association uses the term gender dysphoria in its diagnosis of persons who are not satisfied with their designated gender (14). The current version of the World Health Organization's ICD-10 still uses the term transsexualism when diagnosing adolescents and adults. However, for the ICD-11, the World Health Organization has proposed using the term "gender incongruence" (15).

Treating persons with GD/gender incongruence (15) was previously limited to relatively ineffective elixirs or creams. However, more effective endocrinology-based treatments became possible with the availability of testosterone in 1935 and diethylstilbestrol in 1938. Reports of individuals with GD/gender incongruence who were treated with hormones and gender-affirming surgery appeared in the press during the second half of the 20th century. The Harry Benjamin International Gender Dysphoria Association was founded in September 1979 and is now called the World Professional Association for Transgender Health (WPATH). WPATH published its first Standards of Care in 1979. These standards have since been regularly updated, providing guidance for treating persons with GD/gender incongruence (16).

Prior to 1975, few peer-reviewed articles were published concerning endocrine treatment of transgender persons. Since then, more than two thousand articles about various aspects of transgender care have appeared.

It is the purpose of this guideline to make detailed recommendations and suggestions, based on existing medical literature and clinical experience, that will enable treating physicians to maximize benefit and minimize risk when caring for individuals diagnosed with GD/gender incongruence.

In the future, we need more rigorous evaluations of the effectiveness and safety of endocrine and surgical protocols. Specifically, endocrine treatment protocols for GD/gender incongruence should include the careful assessment of the following: (1) the effects of prolonged delay of puberty in adolescents on bone health, gonadal function, and the brain (including effects on cognitive, emotional, social, and sexual development); (2) the effects of treatment in adults on sex hormone levels; (3) the requirement for and the effects of progestins and other agents used to suppress endogenous sex steroids during treatment; and (4) the risks and benefits of gender-affirming hormone treatment in older transgender people.

To successfully establish and enact these protocols, a commitment of mental health and endocrine investigators is required to collaborate in long-term, large-scale studies across countries that use the same diagnostic and inclusion criteria, medications, assay methods, and response assessment tools (*e.g.*, the European Network for the Investigation of Gender Incongruence) (17, 18).

Terminology and its use vary and continue to evolve. Table 1 contains the definitions of terms as they are used throughout this guideline.

Biological Determinants of Gender Identity Development

One's self-awareness as male or female changes gradually during infant life and childhood. This process of cognitive and affective learning evolves with interactions with parents, peers, and environment. A fairly accurate timetable exists outlining the steps in this process (19). Normative psychological literature, however, does not address if and when gender identity becomes crystallized and what factors contribute to the development of a gender identity that is not congruent with the gender of rearing. Results of studies from a variety of biomedical disciplines—genetic, endocrine, and neuroanatomic—support the concept that gender identity and/or gender expression (20) likely reflect a complex interplay of biological, environmental, and cultural factors (21, 22).

With respect to endocrine considerations, studies have failed to find differences in circulating levels of sex steroids between transgender and nontransgender individuals (23). However, studies in individuals with a disorder/difference of sex development (DSD) have informed our understanding of the role that hormones may play in gender identity outcome, even though most persons with GD/gender incongruence do not have a DSD. For example, although most 46,XX adult individuals with virilizing congenital adrenal hyperplasia caused by mutations in *CYP21A2* reported a female gender identity, the prevalence of GD/gender incongruence was much greater in this group than in the general population without a DSD. This supports the concept that there is a role for prenatal/postnatal androgens in gender development (24–26), although some studies indicate that prenatal androgens are more likely to affect gender behavior and sexual orientation rather than gender identity *per se* (27, 28).

Researchers have made similar observations regarding the potential role of androgens in the development of gender identity in other individuals with DSD. For example, a review of two groups of 46,XY persons, each with androgen synthesis deficiencies and female raised, reported transgender male (female-to-male) gender role changes in 56% to 63% and 39% to 64% of patients, respectively (29). Also, in 46,XY female-raised individuals with cloacal

doi: 10.1210/jc.2017-01658

Table 1. Definitions of Terms Used in This Guideline

Biological sex, biological male or female: These terms refer to physical aspects of maleness and femaleness. As these may not be in line with each other (*e.g.*, a person with XY chromosomes may have female-appearing genitalia), the terms biological sex and biological male or female are imprecise and should be avoided.

Cisgender: This means not transgender. An alternative way to describe individuals who are not transgender is "non-transgender people."

Gender-affirming (hormone) treatment: See "gender reassignment"

Gender dysphoria: This is the distress and unease experienced if gender identity and designated gender are not completely congruent (see Table 2). In 2013, the American Psychiatric Association released the fifth edition of the DSM-5, which replaced "gender identity disorder" with "gender dysphoria" and changed the criteria for diagnosis.

Gender expression: This refers to external manifestations of gender, expressed through one's name, pronouns, clothing, haircut, behavior, voice, or body characteristics. Typically, transgender people seek to make their gender expression align with their gender identity, rather than their designated gender.

Gender identity/experienced gender: This refers to one's internal, deeply held sense of gender. For transgender people, their gender identity does not match their sex designated at birth. Most people have a gender identity of man or woman (or boy or girl). For some people, their gender identity does not fit neatly into one of those two choices. Unlike gender expression (see below), gender identity is not visible to others.

Gender identity disorder: This is the term used for GD/gender incongruence in previous versions of DSM (see "gender dysphoria"). The ICD-10 still uses the term for diagnosing child diagnoses, but the upcoming ICD-11 has proposed using "gender incongruence of childhood."

Gender incongruence: This is an umbrella term used when the gender identity and/or gender expression differs from what is typically associated with the designated gender. Gender incongruence is also the proposed name of the gender identity–related diagnoses in ICD-11. Not all individuals with gender incongruence have gender dysphoria or seek treatment.

Gender variance: See "gender incongruence"

Gender reassignment: This refers to the treatment procedure for those who want to adapt their bodies to the experienced gender by means of hormones and/or surgery. This is also called gender-confirming or gender-affirming treatment.

Gender-reassignment surgery (gender-confirming/gender-affirming surgery): These terms refer only to the surgical part of gender-confirming/gender-affirming treatment.

Gender role: This refers to behaviors, attitudes, and personality traits that a society (in a given culture and historical period) designates as masculine or feminine and/or that society associates with or considers typical of the social role of men or women.

Sex designated at birth: This refers to sex assigned at birth, usually based on genital anatomy.

Sex: This refers to attributes that characterize biological maleness or femaleness. The best known attributes include the sex-determining genes, the sex chromosomes, the H-Y antigen, the gonads, sex hormones, internal and external genitalia, and secondary sex characteristics.

Sexual orientation: This term describes an individual's enduring physical and emotional attraction to another person. Gender identity and sexual orientation are not the same. Irrespective of their gender identity, transgender people may be attracted to women (gynephilic), attracted to men (androphilic), bisexual, asexual, or queer.

Transgender: This is an umbrella term for people whose gender identity and/or gender expression differs from what is typically associated with their sex designated at birth. Not all transgender individuals seek treatment.

Transgender male (also: trans man, female-to-male, transgender male): This refers to individuals assigned female at birth but who identify and live as men.

Transgender woman (also: trans woman, male-to female, transgender female): This refers to individuals assigned male at birth but who identify and live as women.

Transition: This refers to the process during which transgender persons change their physical, social, and/or legal characteristics consistent with the affirmed gender identity. Prepubertal children may choose to transition socially.

Transsexual: This is an older term that originated in the medical and psychological communities to refer to individuals who have permanently transitioned through medical interventions or desired to do so.

exstrophy and penile agenesis, the occurrence of transgender male changes was significantly more prevalent than in the general population (30, 31). However, the fact that a high percentage of individuals with the same conditions did not change gender suggests that cultural factors may play a role as well.

With respect to genetics and gender identity, several studies have suggested heritability of GD/gender incongruence (32, 33). In particular, a study by Heylens *et al.* (33) demonstrated a 39.1% concordance rate for gender identity disorder (based on the DSM-IV criteria) in 23 monozygotic twin pairs but no concordance in 21 same-sex dizygotic or seven opposite-sex twin pairs. Although numerous investigators have sought to identify specific genes associated with GD/gender incongruence, such studies have been inconsistent and without strong statistical significance (34–38).

Studies focusing on brain structure suggest that the brain phenotypes of people with GD/gender incongruence differ in various ways from control males and females, but that there is not a complete sex reversal in brain structures (39).

In summary, although there is much that is still unknown with respect to gender identity and its expression, compelling studies support the concept that biologic factors, in addition to environmental factors, contribute to this fundamental aspect of human development.

Natural History of Children With GD/Gender Incongruence

With current knowledge, we cannot predict the psychosexual outcome for any specific child. Prospective follow-up studies show that childhood GD/gender incongruence does not invariably persist into adolescence and adulthood (so-called "desisters"). Combining all outcome studies to date, the GD/gender incongruence of a minority of prepubertal children appears to persist in adolescence (20, 40). In adolescence, a significant number of these desisters identify as homosexual or bisexual. It may be that children who only showed some gender nonconforming characteristics have been included in the follow-up studies, because the DSM-IV text revision criteria for a diagnosis were rather broad. However, the persistence of GD/gender incongruence into adolescence is more likely if it had been extreme in childhood (41, 42). With the newer, stricter criteria of the DSM-5 (Table 2), persistence rates may well be different in future studies.

1.0 Evaluation of Youth and Adults

Gender-affirming treatment is a multidisciplinary effort. After evaluation, education, and diagnosis, treatment may include mental health care, hormone therapy, and/or surgical therapy. Together with an MHP, hormone-prescribing clinicians should examine the psychosocial impact of the potential changes on people's lives, including mental health, friends, family, jobs, and their role in society. Transgender individuals should be encouraged to experience living in the new gender role and assess whether this improves their quality of life. Although the focus of this guideline is gender-affirming hormone therapy, collaboration with appropriate professionals responsible for each aspect of treatment maximizes a successful outcome.

Diagnostic assessment and mental health care

GD/gender incongruence may be accompanied with psychological or psychiatric problems (43–51). It is therefore necessary that clinicians who prescribe hormones and are involved in diagnosis and psychosocial assessment meet the following criteria: (1) are competent in using the DSM and/or the ICD for diagnostic purposes, (2) are able to diagnose GD/gender incongruence and make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (3) are trained in diagnosing psychiatric conditions, (4) undertake or refer for appropriate treatment, (5) are able to do a psychosocial assessment of the patient's understanding, mental health, and social conditions that can impact gender-affirming hormone therapy, and (6) regularly attend relevant professional meetings.

Because of the psychological vulnerability of many individuals with GD/gender incongruence, it is important that mental health care is available before, during, and sometimes also after transitioning. For children and adolescents, an MHP who has training/experience in child and adolescent gender development (as well as child and adolescent psychopathology) should make the diagnosis, because assessing GD/gender incongruence in children and adolescents is often extremely complex.

During assessment, the clinician obtains information from the individual seeking gender-affirming treatment. In the case

Table 2. DSM-5 Criteria for Gender Dysphoria in Adolescents and Adults

A. A marked incongruence between one's experienced/expressed gender and natal gender of at least 6 mo in duration, as manifested by at least two of the following:
   1. A marked incongruence between one's experienced/expressed gender and primary and/or secondary sex characteristics (or in young adolescents, the anticipated secondary sex characteristics)
   2. A strong desire to be rid of one's primary and/or secondary sex characteristics because of a marked incongruence with one's experienced/expressed gender (or in young adolescents, a desire to prevent the development of the anticipated secondary sex characteristics)
   3. A strong desire for the primary and/or secondary sex characteristics of the other gender
   4. A strong desire to be of the other gender (or some alternative gender different from one's designated gender)
   5. A strong desire to be treated as the other gender (or some alternative gender different from one's designated gender)
   6. A strong conviction that one has the typical feelings and reactions of the other gender (or some alternative gender different from one's designated gender)

B. The condition is associated with clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify if:
   1. The condition exists with a disorder of sex development.
   2. The condition is posttransitional, in that the individual has transitioned to full-time living in the desired gender (with or without legalization of gender change) and has undergone (or is preparing to have) at least one sex-related medical procedure or treatment regimen—namely, regular sex hormone treatment or gender reassignment surgery confirming the desired gender (*e.g.*, penectomy, vaginoplasty in natal males; mastectomy or phalloplasty in natal females).

Reference: American Psychiatric Association (14).

doi: 10.1210/jc.2017-01658

of adolescents, the clinician also obtains information from the parents or guardians regarding various aspects of the child's general and psychosexual development and current functioning. On the basis of this information, the clinician:

- decides whether the individual fulfills criteria for treatment (see Tables 2 and 3) for GD/gender incongruence (DSM-5) or transsexualism (DSM-5 and/or ICD-10);
- informs the individual about the possibilities and limitations of various kinds of treatment (hormonal/surgical and nonhormonal), and if medical treatment is desired, provides correct information to prevent unrealistically high expectations;
- assesses whether medical interventions may result in unfavorable psychological and social outcomes.

In cases in which severe psychopathology, circumstances, or both seriously interfere with the diagnostic work or make satisfactory treatment unlikely, clinicians should assist the adolescent in managing these other issues. Literature on postoperative regret suggests that besides poor quality of surgery, severe psychiatric comorbidity and lack of support may interfere with positive outcomes (52–56).

For adolescents, the diagnostic procedure usually includes a complete psychodiagnostic assessment (57) and an assessment of the decision-making capability of the youth. An evaluation to assess the family's ability to endure stress, give support, and deal with the complexities of the adolescent's situation should be part of the diagnostic phase (58).

Social transitioning

A change in gender expression and role (which may involve living part time or full time in another gender role that is consistent with one's gender identity) may test the person's resolve, the capacity to function in the affirmed gender, and the adequacy of social, economic, and psychological supports. It assists both the individual and the clinician in their judgments about how to proceed (16). During social transitioning, the person's feelings about the social transformation (including coping with the responses of others) is a major focus of the counseling. The optimal timing for social transitioning may differ between individuals. Sometimes people wait until they start gender-affirming hormone treatment to make social transitioning easier, but individuals increasingly start social transitioning long before they receive medically supervised, gender-affirming hormone treatment.

Criteria

Adolescents and adults seeking gender-affirming hormone treatment and surgery should satisfy certain criteria before proceeding (16). Criteria for gender-affirming hormone therapy for adults are in Table 4, and criteria for gender-affirming hormone therapy for adolescents are in Table 5. Follow-up studies in adults meeting these criteria indicate a high satisfaction rate with treatment (59). However, the quality of evidence is usually low. A few follow-up studies on adolescents who fulfilled these criteria also indicated good treatment results (60–63).

Recommendations for Those Involved in the Gender-Affirming Hormone Treatment of Individuals With GD/Gender Incongruence

1.1. We advise that only trained MHPs who meet the following criteria should diagnose GD/gender incongruence in adults: (1) competence in using the DSM and/or the ICD for diagnostic purposes, (2) the ability to diagnose GD/gender incongruence and make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (3) training in diagnosing psychiatric conditions, (4) the ability to undertake or refer for appropriate treatment, (5) the ability to psychosocially assess the person's understanding, mental health, and social conditions that can impact gender-affirming hormone therapy, and (6) a practice of regularly attending relevant professional meetings. (Ungraded Good Practice Statement)

1.2. We advise that only MHPs who meet the following criteria should diagnose GD/gender incongruence in children and adolescents: (1) training in child and adolescent developmental psychology and psychopathology, (2) competence in using the DSM and/or ICD for diagnostic

Table 3. ICD-10 Criteria for Transsexualism

Transsexualism (F64.0) has three criteria:
1. The desire to live and be accepted as a member of the opposite sex, usually accompanied by the wish to make his or her body as congruent as possible with the preferred sex through surgery and hormone treatments.
2. The transsexual identity has been present persistently for at least 2 y.
3. The disorder is not a symptom of another mental disorder or a genetic, DSD, or chromosomal abnormality.

Table 4. Criteria for Gender-Affirming Hormone Therapy for Adults

1. Persistent, well-documented gender dysphoria/gender incongruence
2. The capacity to make a fully informed decision and to consent for treatment
3. The age of majority in a given country (if younger, follow the criteria for adolescents)
4. Mental health concerns, if present, must be reasonably well controlled

Reproduced from World Professional Association for Transgender Health (16).

purposes, (3) the ability to make a distinction between GD/gender incongruence and conditions that have similar features (*e.g.*, body dysmorphic disorder), (4) training in diagnosing psychiatric conditions, (5) the ability to undertake or refer for appropriate treatment, (6) the ability to psychosocially assess the person's understanding and social conditions that can impact gender-affirming hormone therapy, (7) a practice of regularly attending relevant professional meetings, and (8) knowledge of the criteria for puberty blocking and gender-affirming hormone treatment in adolescents. (Ungraded Good Practice Statement)

Evidence

Individuals with gender identity issues may have psychological or psychiatric problems (43–48, 50, 51, 64, 65). It is therefore necessary that clinicians making the diagnosis are able to make a distinction between GD/gender incongruence and conditions that have similar features. Examples of conditions with similar features are body dysmorphic disorder, body identity integrity disorder (a condition in which individuals have a sense that their anatomical configuration as an able-bodied person is somehow wrong or inappropriate) (66), or certain forms of eunuchism (in which a person is preoccupied with or engages in castration and/or penectomy for

Table 5. Criteria for Gender-Affirming Hormone Therapy for Adolescents

Adolescents are eligible for GnRH agonist treatment if:

1. A qualified MHP has confirmed that:
   - the adolescent has demonstrated a long-lasting and intense pattern of gender nonconformity or gender dysphoria (whether suppressed or expressed),
   - gender dysphoria worsened with the onset of puberty,
   - any coexisting psychological, medical, or social problems that could interfere with treatment (*e.g.*, that may compromise treatment adherence) have been addressed, such that the adolescent's situation and functioning are stable enough to start treatment,
   - the adolescent has sufficient mental capacity to give informed consent to this (reversible) treatment,
2. And the adolescent:
   - has been informed of the effects and side effects of treatment (including potential loss of fertility if the individual subsequently continues with sex hormone treatment) and options to preserve fertility,
   - has given informed consent and (particularly when the adolescent has not reached the age of legal medical consent, depending on applicable legislation) the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process,
3. And a pediatric endocrinologist or other clinician experienced in pubertal assessment
   - agrees with the indication for GnRH agonist treatment,
   - has confirmed that puberty has started in the adolescent (Tanner stage ≥G2/B2),
   - has confirmed that there are no medical contraindications to GnRH agonist treatment.

Adolescents are eligible for subsequent sex hormone treatment if:

1. A qualified MHP has confirmed:
   - the persistence of gender dysphoria,
   - any coexisting psychological, medical, or social problems that could interfere with treatment (*e.g.*, that may compromise treatment adherence) have been addressed, such that the adolescent's situation and functioning are stable enough to start sex hormone treatment,
   - the adolescent has sufficient mental capacity (which most adolescents have by age 16 years) to estimate the consequences of this (partly) irreversible treatment, weigh the benefits and risks, and give informed consent to this (partly) irreversible treatment,
2. And the adolescent:
   - has been informed of the (irreversible) effects and side effects of treatment (including potential loss of fertility and options to preserve fertility),
   - has given informed consent and (particularly when the adolescent has not reached the age of legal medical consent, depending on applicable legislation) the parents or other caretakers or guardians have consented to the treatment and are involved in supporting the adolescent throughout the treatment process,
3. And a pediatric endocrinologist or other clinician experienced in pubertal induction:
   - agrees with the indication for sex hormone treatment,
   - has confirmed that there are no medical contraindications to sex hormone treatment.

Reproduced from World Professional Association for Transgender Health (16).