THE BULLETIN

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Dr. A.J. Jain was one of three honorees at the CSU President's Recognition Banquet and received the Thomas Y. Whitley Distinguished Alumnus Award for his outstanding professional and personal achievements. See page 22 for more information.

JUNE 2018

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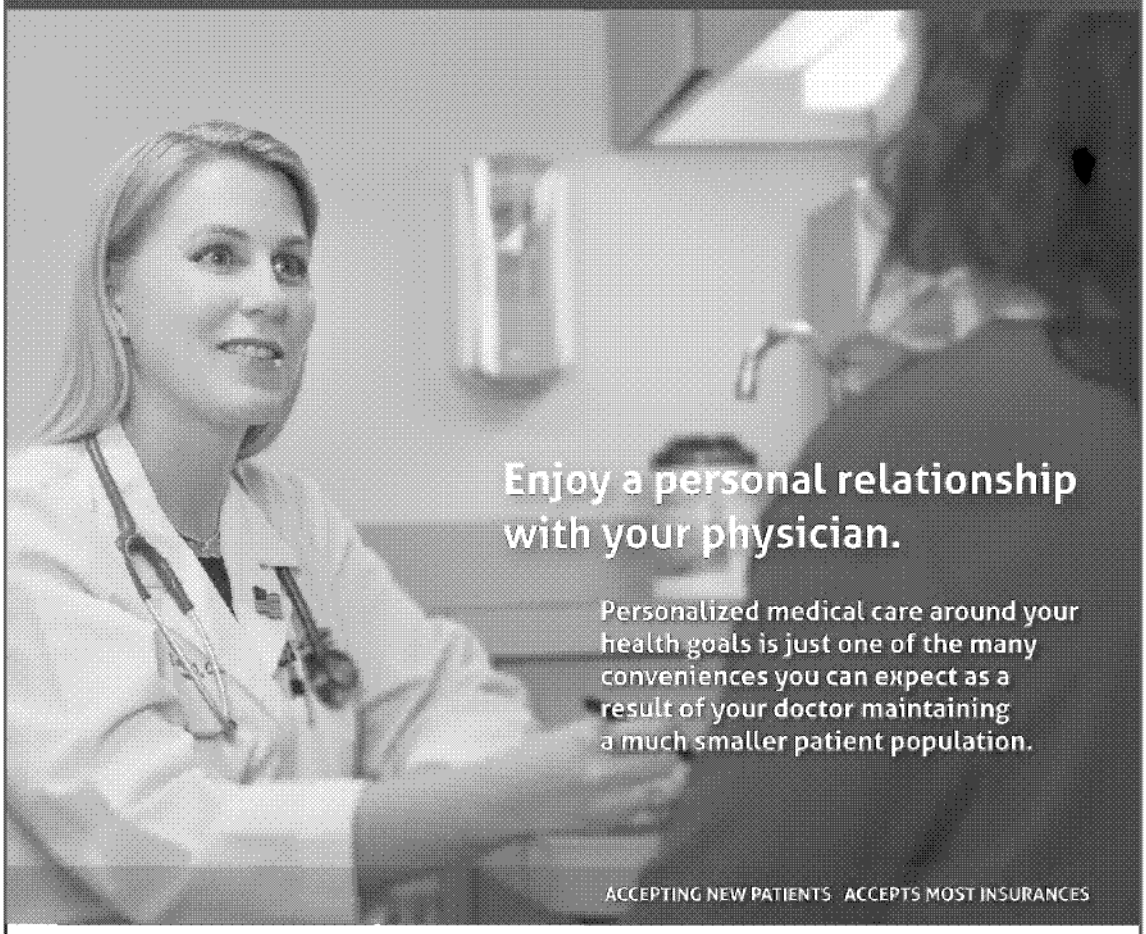

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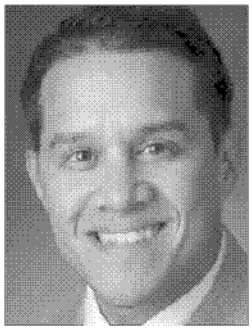
Contents

The Bulletin of the Muscogee County Medical Society is the official monthly publication of the MCMS located at 2612 Commons Blvd, Augusta, Georgia. Opinions expressed in *The Bulletin*, including editorials, are those of the individual author and do not necessarily reflect policies of the Society, unless stated. Advertisements in this publication are paid advertisements and are not necessarily supported or endorsed by the Muscogee County Medical Society.

Members are encouraged to submit articles, current news or upcoming events for publication in *The Bulletin*. Deadline for copy is the 10th of the month preceding date of issue. Those wishing to advertise in *The Bulletin* may request requirements and rates by contacting the society office. Items to be published should be sent to the society coordinator, Stacie McGahee, via email to Stacie@muscogeemedical.org.

PRESIDENT'S MESSAGE

Timothy P. Villegas, M.D.



The Opioid Crisis

So we've all undoubtedly been following the evolution of this ongoing nationwide opioid crisis. Like it or not, we are regularly exposed to the headlines, both as members of society and even more so as healthcare providers. It seems as if each month more time and attention is being devoted to these issues, and appropriately so given the scope of this problem in many communities.

Columbus Regional Medical Group recently instituted a formal policy in regards to pain management. This includes mandatory registration with the prescription drug monitoring program (PDMP), ongoing educational activities and electronic prescribing. It sets quantifiable limits on narcotic supplies for both acute and chronic pain, provides criteria for referral to pain management, and spells out usage of patient contracts and documentation in medical records.

I for one have already found great utility in the PDMP. The system has alerted me to several of my patients who were potentially abusing the system to obtain narcotics. Now this is not to say I didn't already have my suspicions, but it's reassuring to know that the system is functioning as designed, and it is helpful to have some objective data to use to better manage a patient if needed.

In recent gynecology journals and meeting presentations, a plethora of studies are beginning to be published looking at extremely conservative pain management protocols, even following laparotomy. For example, one study surgical center found it was able to decrease opioid prescriptions by 97% by essentially prohibiting routine prescriptions of narcotics for minimally-invasive or outpatient surgeries. It is striking to see the contrast between these guidelines and the liberal analgesic-prescribing mindset of the past. I for one was trained in the era where pain was looked upon as needless thing of the past, especially given all of the "advances" in narcotic delivery systems and new long-acting formulations that were taking place. It has now become clear, unfortunately that these ideas were to a large extent being driven by the pharmaceutical companies. Ultimately we are all going to have to take an active, conscious role in decreasing the use of narcotic pain medications in our practices. We have allowed dangerous philosophies to propagate over several generations of providers and patients, and it is going to be a struggle to reverse the swing of this pendulum. It does appear, however, that great strides have and are continuing to be made in this endeavor. I always try to tell myself (and my patients), that pain itself never killed anyone, but the medications we prescribe to treat this pain can and have done so.

Children's Hospital Partners With CHOA

Children's Healthcare of Atlanta and Piedmont Columbus Regional have announced a formal affiliation agreement under which Children's will collaborate with Piedmont Columbus Regional with the goal of better serving children and families in the Columbus area.

The affiliation will support the commitment of Children's and Piedmont Columbus Regional to providing high-quality pediatric care and to expanding access to specialized pediatric care in Georgia.

"This affiliation increases our ability to coordinate care beyond our walls to serve even more children while collaborating with a distinguished health system and the doctors in Columbus. We are grateful to Scott Hill, the pediatricians and the pediatric leaders of the Columbus area for reaching out to us and being so committed to impacting the care of children in their community," said Donna Hyland, President and CEO, Children's Healthcare of Atlanta.

Children's is providing tools, training and pediatric best practices to Piedmont Columbus Regional to focus on its pediatric quality and patient safety program. The two systems also will work together to provide training for pediatric doctors and nurses. The affiliation will enhance care coordination between Piedmont Columbus Regional and Children's.

Children's will work with Piedmont Columbus Regional's pediatricians on best practices designed to enhance the evaluation and assessment of kids; on quality protocols for pediatric patients; on building additional infrastructure to monitor quality and to advance patient safety; and on methods for enhancing care coordination and clinical integration.

"As the regions only Children's hospital, we are committed to providing advanced pediatric services in our local markets. This affiliation will further that commitment by allowing us to provide optimal care coordination for our pediatric patients in the local community and across the wide array of services offered by Children's Healthcare of Atlanta," said Scott Hill, President and CEO of Piedmont Columbus Regional. "It will also provide excellent opportunities for the continued education and development of our nursing and clinical staff. We are looking forward to advancing our mission in this regard and making a positive difference in every life we touch."

Midtown Campus Earns Gold Status

The Georgia Department of Public Health (GDPH) has granted Piedmont Columbus Regional's Midtown Campus gold status membership in their Honor Roll for Antibiotic Stewardship. The Midtown Campus is able to maintain its gold status through April 1, 2021, and is eligible to reapply to maintain this status.

The Georgia Honor Roll for Antibiotic Stewardship was established in 2014 by the Healthcare Associated Infections Advisory Committee. Antimicrobial stewardship is a coordinated program that promotes the appropriate use of antimicrobials (including antibiotics), improves patient outcomes, reduces microbial resistance, and decreases the spread of infections caused by multidrug-resistant organisms. The goal of the program is to provide an incentive for acute care facilities and critical access hospitals to engage in antimicrobial stewardship.

The program consists of two phases: an engagement phase and an implementation phase. The engagement phase requires facilities to present a statement of commitment from senior leadership, identify their antibiotic stewardship team and conduct a staff educational event regarding antimicrobial stewardship. The implementation phase requires facilities to demonstrate that a process to select appropriate stewardship activities was undertaken and that the impact of these activities was measured.

The Midtown Campus established an educational website in March 2010, which includes the core concepts of antibiotic stewardship and is routinely used by medical and pharmacy staff. Medical and pharmacy residents use the website to complete an annual in-service training. Additional in-service education is provided to medical staff groups on an ongoing basis.

The stewardship team is led by Valerie Fletcher, M.D. and Deanne Tabb, PharmD, M.T.

Northside Campus Sleep Lab Receives Accreditation

The Center for Sleep and Neurodiagnostic Studies at the Northside Campus has received its first accreditation for Ambulatory Heath Care from the Joint Commission.

The accreditation covers the next three years. In order to receive accreditation, a surveyor visits the facility over a two year period and checks for the following: environment of care, emergency management, human resources management, infection prevention and control, information management, leadership, safety, medication management, National Patient Safety Goals, provision of care, performance improvement, record of care, individual rights, transplant safety and waived testing.

Achieving accreditation translates into a stamp of approval for our organization and for our patients, that we are providing high quality care in our facilities.

Statisticians tell us we sleep one-third of our lives. But not everyone is so lucky. Conditions such as sleep apnea, restless leg syndrome or narcolepsy prevent some people from getting all the rest they really need. It's not just inconvenient. It can be detrimental to a person's health. At the sleep lab, our board-certified, fellowship-trained specialists can help diagnose and treat your sleep disorder.

The sleep lab features state-of-the-art equipment and four patient rooms that offer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more of a resort hotel atmosphere than that of a hospital. The rooms are furnished with blackout shades, special fans designed to alleviate dust, noise machines, coffee makers and charging stations for electronic devices. We are the only sleep center in the area to provide our youngest patients with cribs, too.

The Joint Commission and its Gold Seal of Approval are a widely recognized benchmarks representing the most comprehensive evaluation process in the healthcare industry. The accreditation will benefit the Northside Campus Sleep Lab by giving it recognition from insurers, associations and other third parties while improving liability insurance rates. Patients can utilize the lab with confidence in its staff and procedures.

DAISY Award

Congratulations to the DAISY award recipients, who were selected as part of a national program to recognize nurses for their extraordinary care and compassion to patients and their families. Nurses are nominated by a patient, patient's family member or co-worker. The nominations are then reviewed and winners are selected by the Daisy committee.

Miryam Becerra Hernandez, R.N. and Christina Branton, R.N. Midtown Campus 7 Main

Upcoming Events

Spirit Night at Texas Roadhouse

The first Monday of each month is Spirit Night at Texas Roadhouse. Be sure to dine in on this night because a portion of the proceeds will support the Children's Hospital at Piedmont Columbus Regional's Midtown Campus!

June is Men's Health Month

The purpose of Men's Health Month is to heighten the awareness of preventable health problems and encourage early detection and treatment of disease among men and boys. You can support the men in your life by having healthy habits yourself and by making healthy choices by eating healthy foods, exercising regularly, find ways to reduce stress and not smoking or chewing tobacco. Remind the men in your life to see a doctor or health professional for regular checkups and to learn about their family health history.

Skate for Miracles

July 20-21 | 8:00 a.m.| Hollywood Connection in Columbus

Skate for Miracles is a 24-hour fundraising Skate-a-thon hosted by Hollywood Connection to raise funds and awareness for the Children's Hospital at Piedmont Columbus Regional's Midtown Campus. Skaters will get a free t-shirt, food throughout the event, and be able to participate in different events throughout the night. For more information, contact Jessie Doggett at 706.660.6291 to register as a skater!

CME opportunities for physicians

The following Continuing Medical Education (CME) opportunities for physicians have been approved for one hour of CME credit each:

Breast Cancer Conference: Once a month every third Friday, 7:00 a.m., Conference Room at the John B. Amos Cancer Center. For more information, call Michael Nwogbo at 706.320.6603 or 706.571.1881.

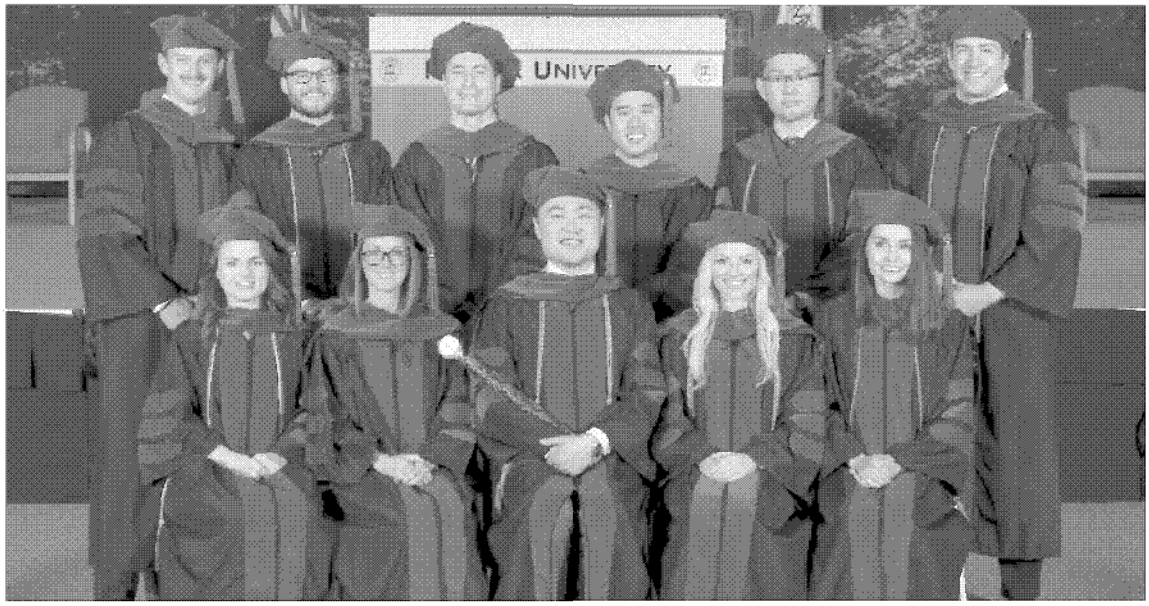
Cancer Conference: Every Monday, 12:30 p.m., Conference Room at the John B. Amos Cancer Center. For more information, call 706.571.1881.

Hospital Grand Rounds: Once a month every fourth Thursday, 12:30 p.m., Columbus Regional Health Conference Center at Midtown Medical Center. Open to any physician, resident, medical student, nursing staff and local EMS. Grand rounds will not be held in the months of November and December. For more information, call Jennifer Herring at 706.571.1112.

Pediatric Grand Rounds: Every Thursday, 8:15 a.m., Conference Center at Piedmont Columbus Regional's Midtown Campus. Open to any physician or other health professional providing care for children. For more information, call Lea Cunningham at 706.571.1217.

Clinic Grand Rounds: Once and month every first Wednesday, dinner at 6:00 p.m. and rounding begins at 6:30 p.m. Hughston Foundation Building Auditorium at the Hughston Clinic. Open to any physician, resident, medical student, nursing staff, PT, MA and local EMS. For more information, call Belinda Klein at 706.494.3326.

Piedmont Columbus Regional's Midtown Campus is accredited by the Medical Association of Georgia to provide continuing medical education for physicians. The Midtown Campus designates this live activity for a maximum of one AMA PRA Category 1 Credit™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

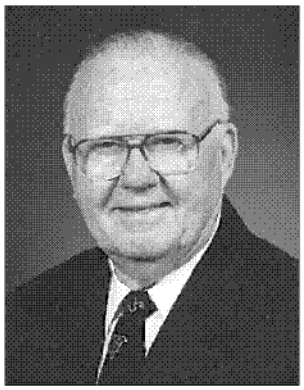


On May 5, 2018 Mercer University School of Medicine's Columbus Campus graduated its 5th class of medical students trained in Columbus. This joyous time calls for celebration and reflection on the hard work put in by the students and our dedicated clinical faculty. This moment is every bit as much a testament to this community's resolve as it is to the talents and hard work of the students. Please join us in congratulating all of our graduating seniors!

In Memoriam

John D. Watson, Jr., M.D.

Dr. John Watson passed away on Friday, May 4, 2018.



Dr. Watson was a native of Prescott, Arkansas. He was a very active child, playing music, participating in the Boy Scouts, a cheerleader, class president, member of the glee club, thespian club and the national honor society. His activities continued through his college years at the University of Arkansas where he joined Kappa Sigma, serving as president, sang in the university opera, played in the band and join the Phi Mu Alpha Sinfonia. Once in medical school he became class representative, student body president and assistant of public relations for the University of Arkansas. He received his medical degree in 1955 and served his internship at Letterman Army Hospital in San Francisco, California. He served in the Air Force from 1955 until 1958. Upon his discharge, he entered the private practice of general medicine in Kingsville, Texas. This practice was heavily ruled by obstetrics and with a growing number of moms-to-be in the area, by his own admission, "one would not live long at this pace" he decided to go into radiology in New Orleans. At Tulane University Dr. Watson served on the faculty until he relocated to Columbus, Georgia in 1967. Once in Columbus, Dr. Watson became very involved in organized medicine. He was a member and past president of the Muscogee County Medical Society and the Medical Association of Georgia, also serving as a Delegate to the American Medical Association. He founded the Georgia Society of Nuclear Medicine and served as president. He was a fellow in the American College of Radiology and served on the Board of Chancellors. He was a charter member of the American College of Nuclear Medicine, served as president and received its gold medal for outstanding service. Dr. Watson also served as president of the Medical Association of Georgia Foundation, a position he held for almost 20 years.

Most recently, the Muscogee County Medical Society named a special award in his honor and he was bestowed with the inaugural John D. Watson, Jr., M.D.Outstanding Service Award in September 2017.

Dr. Watson is survived by his wife, Margaret Watson; and two children, John Blair Watson and Melissa Ann Coale; and three grandchildren.

IN MEMORIAM

By W. Chris Sheils, M.D.

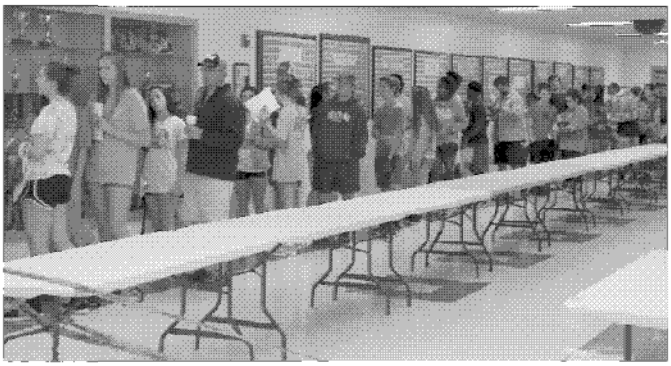
I first met John D. Watson, Jr., M.D. while I was a medical student with a summer job in the tumor registry in Columbus, Georgia. It was readily apparent that Dr. Watson was a person of many interests and talents. Some years later, following completion of my formal training, I had the privilege of beginning my first practice with him, something that lasted over fourteen years. It did not take long for me to realize that he knew how to combine his talents with his interests in order to accomplish many goals. He was a very progressive physician, constantly striving to expand the breadth and scope of oncologic treatment modalities in the Columbus region. He was also a very capable and experienced clinician with a well developed "bed side manner". More than once in the clinical setting, after a patient had just been given a dreaded diagnosis, did I see him instill, in the patient and family, a sense of calm and hope for the future.

Dr. Watson took a very active role in all manner of physician related issues, as witnessed by the number of prominent positions he held over the years (President of the Georgia Radiaological Society, President of the Medical Association of Georgia amongst others). He was particularly adept at handling some of the most complex and conflict-prone problems that arose in the different professional societies in which he was involved (amongst which was the American College of Radiology, a national organization). I had the privilege of working with him on the Board of the Georgia Radiological Society, and remember many were the times that his political experience and insight opened doors to solutions that otherwise might have remained elusive.

With all of his activities, including time and involvement with his family, Dr. Watson still found time to pursue hobbies, including music. On one very memorable occasion, he sat down to a grand piano and begin playing a Chopin Scherzo with abandon (no small feat).

I feel very proud and privileged to have known and worked with him, and will miss John D. Watson, Jr., M.D. greatly.

Annual Screenings for High School Athletes



More than 100 employees, physicians, nurses, athletic trainers, and students from the Hughston network, Martin Army Community Hospital, Northside High School, Central High School (Phenix City), and Harris County High School volunteered for the annual preparticipation health screenings for local high school athletes. The screenings and accompanying research are directed and organized by the Institute of Athletic Health Care and Research (IAHCR) and cosponsored by the Hughston Foundation.

The chief objective of these screenings is to detect conditions that could place the athlete or other participants at risk for injury. Each year, athletes from more than 15 area high schools are screened at a local high school facility. This year, we screened over 500 student-athletes from the Chattahoochee Valley area at Northside High School. The cost of the screening for each athlete is $10.00, $5.00 of which goes into an account at the athlete's school for training equipment not covered by the athletic budget and $5.00 toward the cost of the screening supplies.

Under the direction of the late Stephen C. Hunter, MD, the Hughston Foundation created the Institute as a way to serve the athletic community and pursue research in the field of sports medicine. Since 1976, the IAHCR has completed more than 52,500 screenings. The results of these screenings will be added to our database, which is used by researchers to study the health of athletes. Thanks to our volunteers and knowledgeable healthcare professionals, the preparticipation screening program has positively affected the health and safety of the area's high school athletes.

Hughston's Golf Tournament another Great Success

The Hughston Golf Tournament held Friday, June 1, at Maple Ridge Golf Course in Columbus was another big hit with business leaders and educators this year. All funds raised by the tournament go directly to support the Hughston Protect the Athletes campaign. The mission of the campaign is to raise funds to support the athletic sports coverage that Hughston provides across the Chattahoochee Valley to youth programs, such as sideline coverage at high school sporting events, support of preparticipation exams, and Saturday morning injury clinics. Besides providing coverage at sporting events, our fundraising projects help purchase much needed ImPACT concussion software for area high schools and other participating colleges.

We would like to thank the following team sponsors for their generous support: Wanda & Shelby Amos Foundation; CB&T; Hughston Clinic; Hutchinson Traylor; Principle Construction; Rivertown Pediatrics; TSYS; and Virginia College of Medicine. Thank you to the following sponsors for their cash or prize donations: ACOM; Arthrex; Levy, Sibley, Foreman & Speir, LLC; Malones Office Supply; Medco; Regions Bank; Rivertown Pediatrics; Southeast Brain & Spine Surgery; The Center for Medical Weight Loss; and Tremco Roofing & Building Maintenance.

Free CMEs offered monthly at Hughston Grand Rounds and M&M Conference

On the first Wednesday of each month, a diverse group of local healthcare professionals—which often includes physicians from Hughston, Columbus, and Fort Benning; Hughston fellows and residents; Hughston Certified Athletic Training Fellows; and medical students—come together for grand rounds lectures on evolving trends in orthopaedics at the Hughston Foundation auditorium. Grand rounds constitute a ritual of medical education and provide an excellent supplement to medical school and residency. Moreover, grand rounds help doctors and other healthcare professionals stay current in their specialty or areas of core practice. The physician lectures offer expertise on specialized topics and cover the latest evidence-based research and treatments emerging in the field of medicine.

Additionally, Morbidity and Mortality (M&M) Conferences, held on the third Monday of each month provide attendees another chance to earn CMEs. Held in the Hughston Foundation auditorium, starting at 6:00 pm, M&Ms are great opportunities for learning and reflection. At our M&M conferences, the goal is to provide a forum for faculty, residents, trainees, students, and other medical staff to explore the management details of particular cases. The cases presented cover the specifics of care, revisit errors, and discuss diagnosis, techniques, and treatment protocols. Even experienced surgeons can learn from these dynamic presentations and discussions.

To sign up for email blasts for these CME events, contact Belinda Klein at 706-494-3326; bklein@hughston.com.

UPCOMING EVENTS

MCMS Family Event

Columbus Lions • July 28, 2018 • 7pm

Make plans to attend our MCMS Family Night as we cheer on our Columbus Lions with dinner and a private suite to enjoy the evening. More information will be arriving soon!

ARTICLE OF INTEREST

By Joseph Zanga, MD, FAAP

First, Do No Harm

Four simple words taught early and often in Medical School. Words to live by, and practice by, we're taught. But can we? Is it possible? After all, almost everything we do as physicians carries some risk of harm. It may be minor as in the pain after successful surgery. It can be life altering or even life threatening as in our failure to report a suspicion of child maltreatment for a variety of truly inconsequential reasons. Bear with me though as I present a current controversy with respect to children not adults. Keep an open mind and reflect deeply on those four words. Let's begin though with something non-controversial. When is the human brain fully mature? Socrates knew it to be the mid-twenties as did Shakespeare. Science waited until the late 20th century to declare correct these observant men. This was an important admission since it made clear that children, even through the adolescent years, don't have the mental capacity to make long term, life altering decisions. That's why parents consent to have their children receive needed surgery, unpleasant cancer chemotherapy, and the like.

Now the controversy, chosen because it surfaces almost daily in the media and in the Halls of Medicine.I write of the Transgender issue.

First, do no harm! While it's always been true, and non-controversial, that little boys sometimes dress in girls' clothes, and little girls sometimes would rather play with trucks than dolls, it has never before meant that their sex designation was wrong. Another non-controversy is that chromosomes determine sex and they are unalterable. A child can no more make him or herself someone of the opposite sex than they could become chimpanzees. Moreover, these feelings are transient and, if not supported and/or encouraged. extinguish by late adolescence. That's why the APA calls this (for the present at least) Gender Dysphoria, a treatable mental health condition. But children's brains are plastic and can be molded by experience, by parents dressing them as the opposite sex, calling them an opposite sex name, and insisting that all others do the same. They become, in their brains, the sex others create for them.

First, do no harm. Hanne Gaby Odiele, a true intersex person speaks forcefully about the harmful physical and emotional effects of the surgical procedures physicians told her were necessary. Her advocacy work encourages therapy and peer support rather than medical and surgical treatment "that is often irreversible and sometimes unnecessary". How much truer this is for the otherwise simply questioning child. Yet we increasingly seem to have no qualms about accepting the decisions of a child incapable of making those decisions. We also seem to support media and political (non-medical) imperatives to accept these immature decisions. And so we prescribe, or send children to colleagues who prescribe,

puberty blocking hormones, followed by medications to modify secondary sex characteristics, followed by surgery, all for a condition which usually (90+%) cures itself by late adolescence (though some children, and their families, will require counseling in the interim).

When children refuse potentially lifesaving chemotherapy we take them/their parents to court. When an adolescent is anorexic, believes him/herself to be overweight, or suffers from a like body image problem, we counsel rather than prescribe appetite suppressants. When a family refuses immunizations we discharge them from our practices. When parents want growth hormone or anabolic steroids prescribed so their child can be (more) competitive in the child's favorite sport, we refuse. We do what is best for the patient even if it displeases them or family. It's imperative then that we treat the transgender thinking child in the same way.

Puberty is a normal, natural occurrence. Puberty blocking drugs create an abnormal condition. Cross-sex hormones (testosterone and estrogen) are associated with health risks including high blood pressure, blood clots, stroke, and cancer. In addition, rates of suicide are twenty times greater among adults who've used cross-sex hormones and/or have undergone sex reassignment surgery, even in Sweden which is among the most transgender affirming countries.

So we arrive at a crossroads. Do we stand firm in the practice of Medicine or do we follow the crowd? Endorsing sex reassignment for children as normal in our offices, or via the media and public policy, will inevitably lead more children to puberty-blocking drugs. This, in turn, virtually ensures they will "choose" a lifetime of carcinogenic/toxic cross-sex hormones, and likely consider surgical mutilation of their healthy body parts - all to avoid perhaps some counseling, parental support for their genetic sex, and a period of watchful waiting.

First, do no harm! Think about it.

pwt
Physicians Working Together

Physicians Appreciated Now and In the Future!

On April 6, 2018, Physicians Working Together (PWT) sponsored a National Physician Week Appreciation Luncheon with many physicians of varying specialties including Family Medicine, Pediatrics, Ophthalmology, Nephrology, Cardiology, OB/GYN, outpatient, hospitalists, and those in administration. This is the 3rd Annual PWT Appreciation Dinner and is also a celebration of National Physicians Week now being on the national calendar of U.S. holidays versus just a single "Doctors Day" celebration. PWT's mission, as an international physician-led grassroots group, is to be an umbrella organization of information, advocacy, networking, collaboration, community outreach and support for physicians. PWT helps physicians learn from one another's experiences, share information, and find solutions to universal physician issues through its platform.

In alignment with this mission, PWT hosted an accredited virtual physicians' conference during National Physicians Week that was attended and hosted by physicians from around the country. Physicians Working Together is already looking forward to our 2019 Physician Appreciation Week Conference & Celebration and invite you to plan now to be in attendance. As we prepare to commemorate three years of service to the physician community in June 2018 and layout our fall agenda, we extend to all physicians a welcome to be a part of our stellar future. For more information and exciting events, please go to www.ThePWT.org.

Dr. Kimberly Funches-Jackson
Founder & President

Post Office Box 1066
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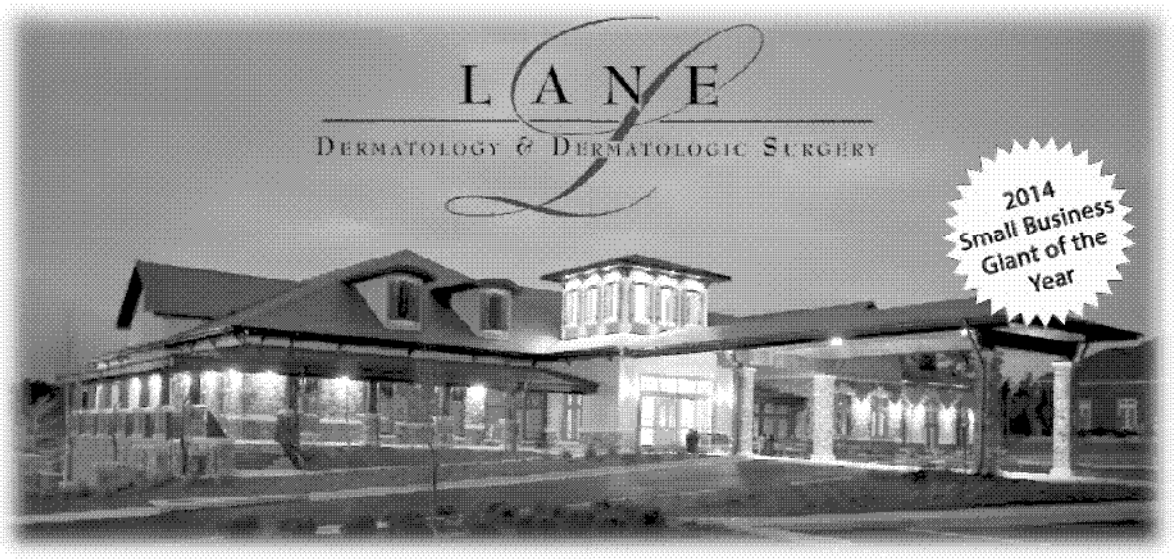
(706) 413-2506

Dr. A.J. Jain Honored at CSU Annual President's Recognition Banquet

On Thursday, April 19, 2018, Dr. A.J. Jain was one of three honorees at the President's Recognition Banquet and received the Thomas Y. Whitley Distinguished Alumnus Award for his outstanding professional and personal achievements. As a Columbus State University graduate, Dr. Jain saw ways that he could assist in improving the University's Pre-Medical Program to help it grow beyond all expectations. He has been an advisor to the CSU's competitive Pre-Medical Studies Program and has mentored many students.

"The award is named for CSU's first president. Dr. Whitley was a true pioneer in education and it is fitting we have named our distinguished alumnus award for this wonderful president," said Jennifer Joyner, assistant vice president of alumni engagement and special events, and executive director of the CSU Alumni Association. "Dr. Jain joins a long list of CSU graduates who have brought great prestige to their alma mater."



EXPERT INJECTOR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TANDA LANE, MD

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LAURA FRANCES SMITH, PA-C


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Neurobiology of gender identity and sexual orientation

C. E. Roselli
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Abstract

Sexual identity and sexual orientation are independent components of a person's sexual identity. These dimensions are most often in harmony with each other and with an individual's genital sex, although not always. The present review discusses the relationship of sexual identity and sexual orientation to prenatal factors that act to shape the development of the brain and the expression of sexual behaviours in animals and humans. One major influence discussed relates to organisational effects that the early hormone environment exerts on both gender identity and sexual orientation. Evidence that gender identity and sexual orientation are masculinised by prenatal exposure to testosterone and feminised in it absence is drawn from basic research in animals, correlations of biometric indices of androgen exposure and studies of clinical conditions associated with disorders in sexual development. There are, however, important exceptions to this theory that have yet to be resolved. Family and twin studies indicate that genes play a role, although no specific candidate genes have been identified. Evidence that relates to the number of older brothers implicates maternal immune responses as a contributing factor for male sexual orientation. It remains speculative how these influences might relate to each other and interact with postnatal socialisation. Nonetheless, despite the many challenges to research in this area, existing empirical evidence makes it clear that there is a significant biological contribution to the development of an individual's sexual identity and sexual orientation.

Keywords

brain; foetal development; gender identity; homosexuality; hormones; sexual differentiation; sexual orientation; sexual partner preference; sexually dimorphic nucleus; transsexuality

1 | INTRODUCTION

Gender identity and sexual orientation are fundamental independent characteristics of an individual's sexual identity.[1] Gender identity refers to a person's innermost concept of self as male, female or something else and can be the same or different from one's physical sex.[2] Sexual orientation refers to an enduring pattern of emotional, romantic and/or sexual attractions to men, women or both sexes.[3] Both gender identity and sexual orientation are

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CONFLICT OF INTERESTS
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characterised by obvious sex differences. Most genetic females identify as such and are attracted to males (ie, androphilic) and most genetic males identify as males and are attracted to females (ie, gynophilic). The existence of these dramatic sex differences suggest that gonadal hormones, particularly testosterone, might be involved, given that testosterone plays an important role in the development of most, behavioural sex differences in other species. Here, a review is provided of the evidence that testosterone influences human gender identity and sexual orientation. The review begins by summarising the available information on sex hormones and brain development in other species that forms the underpinnings of the hypothesis suggesting that these human behaviours are programmed by the prenatal hormone environment, and it will also consider contributions from genes. This is followed by a critical evaluation of the evidence in humans and relevant animal models that relates sexual identity and sexual orientation to the influences that genes and hormones have over brain development.

2 | HORMONES, GENES AND SEXUAL DIFFERENTIATION OF THE BRAIN AND BEHAVIOUR

The empirical basis for hypothesising that gonadal hormones influence gender identity and sexual orientation is based on animal experiments involving manipulations of hormones during prenatal and early neonatal development. It is accepted dogma that testes develop from the embryonic gonad under the influence of a cascade of genes that begins with the expression of the sex-determining gene *SRY* on the Y chromosome.[4,5] Before this time, the embryonic gonad is "indifferent", meaning that it has the potential to develop into either a testis or an ovary. Likewise, the early embryo has 2 systems of ducts associated with urogenital differentiation, Wolffian and Müllerian ducts, which are capable of developing into the male and female tubular reproductive tracts, respectively. Once the testes develop, they begin producing 2 hormones, testosterone and anti-Müllerian hormone (AMH). In rats, this occurs around day 16–17 of gestation, whereas, in humans, it occurs at about 7–8 weeks of gestation.[6] Testosterone and one of its derivatives, dihydrotestosterone, induce the differentiation of other organs in the male reproductive system, whereas AMH causes the degeneration of the Müllerian ducts. Female ovaries develop under the influence of a competing set of genes that are influenced by expression of *DAX1* on the X chromosome and act antagonistically to SRY. The female reproductive tract in the embryo develops in the absence of androgens and later matures under the influence hormones produced by the ovary, in particular oestradiol.

Analogous processes occur during early development for sexual differentiation of the mammalian brain and behaviour. According to the classical or organisational theory,[7,8] prenatal and neonatal exposure to testosterone causes male-typical development (masculinisation), whereas female-typical development (feminisation) occurs in the relative absence of testosterone. Masculinisation involves permanent neural changes induced by steroid hormones and differs from the more transient activational effects observed after puberty. These effects typically occur during a brief critical period in development when the brain is most sensitive to testosterone or its metabolite oestradiol. In rats, the formation of oestradiol in the brain by aromatisation of circulating testosterone is the most important

mechanism for the masculinisation of the brain;[9] however, as shown below, testosterone probably acts directly without conversion to oestradiol to influence human gender identity and sexual orientation. The times when testosterone triggers brain sexual differentiation in different species correspond to periods when testosterone is most elevated in males compared to females. In rodents and other altricial species, this occurs largely during the first 5 days after birth, whereas, in humans, the elevation in testosterone occurs between months 2 and 6 of pregnancy and then again from 1 to 3 months postnatally.[6] During these times, testosterone levels in the circulation are much higher in males than in females. These foetal and neonatal peaks of testosterone, together with functional steroid receptor activity, are considered to program the male brain both phenotypically and neurologically. In animal models, programming or organising actions are linked to direct effects on the various aspects of neural development that influence cell survival, neuronal connectivity and neurochemical specification.[10] Many of these effects occur well after the initial hormone exposure and have recently been linked to epigenetic mechanisms.[11]

The regional brain differences that result from the interaction between hormones and developing brain cells are assumed to be the major basis of sex differences in a wide spectrum of adult behaviours, such as sexual behaviour, aggression and cognition, as well as gender identity and sexual orientation. Factors that interfere with the interactions between hormones and the developing brain systems during gestation may permanently influence later behaviour. Studies in sheep and primates have clearly demonstrated that sexual differentiation of the genitals takes places earlier in development and is separate from sexual differentiation of the brain and behaviour.[12,13] In humans, the genitals differentiate in the first trimester of pregnancy, whereas brain differentiation is considered to start in the second trimester. Usually, the processes are coordinated and the sex of the genitals and brain correspond. However, it is hypothetically possible that, in rare cases, these events could be influenced independently of each other and result in people who identify with a gender different from their physical sex. A similar reasoning has been invoked to explain the role of prenatal hormones on sexual orientation.

Although the role of gonadal steroids in the sexual differentiation of reproductive brain function and behaviour is undeniable, males and females also carry a different complement of genes encoded on their sex chromosomes that also influence sexual differentiation of the brain.[14–16] As will be discussed, family and twin studies suggest that there is a genetic component to gender identity and sexual orientation at least in some individuals. However, the nature of any genetic predisposition is unknown. The genetic component could be coding directly for these traits or, alternatively, could influence hormonal mechanisms by determining levels of hormones, receptors or enzymes. Genetic factors and hormones could also make separate yet complementary or antagonistic contributions. It should be noted that, although the early hormone environment appears to influence gender identity and sexual orientation, hormone levels in adulthood do not. There are no reports indicating that androgen levels differ as a function of gender identity or sexual orientation or that treatment with exogenous hormones alters these traits in either sex.

3 | GENDER IDENTITY

The establishment of gender identity is a complex phenomenon and the diversity of gender expression argues against a simple or unitary explanation. For this reason, the extent to which it is determined by social vs biological (ie, genes and hormones) factors continues to be debated vigorously.[17] The biological basis of gender identity cannot be modelled in animals and is best studied in people who identify with a gender that is different from the sex of their genitals, in particular transsexual people. Several extensive reviews by Dick Swaab and coworkers elaborate the current evidence for an array of prenatal factors that influence gender identity, including genes and hormones.[18–20]

3.1 | Genes

Evidence of a genetic contribution to transsexuality is very limited.[21] There are few reports of family and twin studies of transsexuals but none offer clear support for the involvement of genetic factors.[22–24] Polymorphisms in sex hormone-related genes for synthetic enzymes and receptors have been studied based on the assumption that these may be involved in gender identity development. An increased incidence of an A2 allele polymorphism for CYP17A1 (ie, 17α-hydroxylase/17, 20 lyase, the enzyme catalysing testosterone synthesis) was found in female-to-male (FtM) but not in male-to-female (MtF) transsexuals.[25] No associations were found between a 5α-reductase (ie, the enzyme converting testosterone to the more potent dihydrotestosterone) gene polymorphism in either MtF or FtM transsexuals.[26] There are also conflicting reports of associations between polymorphisms in the androgen receptor, oestrogen receptor β and CYP19 (ie, aromatase, the enzymes catalysing oestradiol synthesis).[27–29] A recent study using deep sequencing detected three low allele frequency gene mutants (i.e., *FBXO38* [chr5:147774428; T>G], *SMOC2* [chr6:169051385; A>G] and *TDRP* [chr8:442616; A>G]) between monozygotic twins discordant for gender dysphoria.[30] Further investigations including functional analysis and epidemiological analysis are needed to confirm the significance of the mutations found in this study. Overall, these genetic studies are inconclusive and a role for genes in gender identity remains unsettled.

3.2 | Hormones

The evidence that prenatal hormones affect the development of gender identity is stronger but far from proven. One indication that exposure to prenatal testosterone has permanent effects on gender identity comes from the unfortunate case of David Reimer.[31] As an infant, Reimer underwent a faulty circumcision and was surgically reassigned, given hormone treatments and raised as a girl. He was never happy living as a girl and, years later, when he found out what happened to him, he transitioned to living as a man. However, for at least the first 8 months of life, this child was reared as a boy and it is not possible to know what impact rearing had on his dissatisfaction with a female sex assignment.[1] Other clinical studies have reported that male gender identity emerges in some XY children born with poorly formed or ambiguous genitals as a result of cloacal exstrophy, 5α-reductase or 17β-hydroxysteroid dehydrogenase deficiency and raised as girls from birth.[32,33] All of these individuals were exposed to testosterone prenatally emphasising a potential role for androgens in gender development and raising doubts that children are psychosexually neutral at birth.[20] On the other hand, XY individuals born with an androgen receptor

mutation causing complete androgen insensitivity are phenotypically female, identify as female and are most often androphilic, indicating that androgens act directly on the brain without the need for aromatisation to oestradiol.[34]

3.3 | Neuroanatomy

Further evidence that the organisational hormone theory applies to development of gender identity comes from observations that structural and functional brain characteristics are more similar between transgender people and control subjects with the same gender identity than between individuals sharing their biological sex. This includes local differences in the number of neurones and volume of subcortical nuclei such as the bed nucleus of the stria terminalis,[35,36] numbers of kisspeptin and neurokinin B neurones in the infundibulum,[37,38] structural differences of gray[39,40] and white matter microstructure,[41–43] neural responses to sexually-relevant odours[44,45] and visuospatial functioning.[46] However, in some cases, the interpretation of these studies is complicated by hormone treatments, small sample sizes and a failure to disentangle correlates of sexual orientation from gender identity.[47] The fact that these differences extend beyond brain areas and circuits classically associated with sexual and endocrine functions raises the possibility that transsexuality is also associated with changes in cerebral networks involved in self-perception.

4 | SEXUAL ORIENTATION

Research over several decades has demonstrated that sexual orientation ranges along a continuum, from exclusive attraction to the opposite sex to exclusive attraction to the same sex.[48] However, sexual orientation is usually discussed in terms of 3 categories: heterosexual (having emotional, romantic or sexual attractions to members of the other sex), homosexual (having emotional, romantic or sexual attractions to members of one's own sex) and bisexual (having emotional, romantic or sexual attractions to both men and women). Most people experience little or no sense of choice about their sexual orientation. There is no scientifically convincing research to show that therapy aimed at changing sexual orientation (ie, reparative or conversion therapy) is safe or effective.[3] The origin of sexual orientation is far from being understood, although there is no proof that it is affected by social factors after birth. On the other hand, a large amount of empirical data suggests that genes and hormones are important regulators of sexual orientation.[49–51] Useful animal models and experimental paradigms in animals have helped frame questions and propose hypotheses relevant to human sexual orientation.

4.1 | Animal studies

Sexual partner preference is one of the most sexually dimorphic behaviours observed in animals and humans. Typically, males choose to mate with females and females choose to mate with males. Sexual partner preferences can be studied in animals by using sexual partner preference tests and recording the amount of time spent alone or interacting with the same or opposite sex stimulus animal. Although imperfect, tests of sexual partner preference or mate choice in animals have been used to model human sexual orientation. As reviewed comprehensively by Adkins-Regan[52] and Henley et al,[53] studies demonstrate that perinatal sex steroids have a large impact on organising mate choice in several species of animals,

including birds, mice, rats, hamsters, ferrets and pigs. In particular, perinatal exposure to testosterone or its metabolite oestradiol programs male-typical (ie, gynophilic) partner preferences and neonatal deprivation of testosterone attenuates the preference that adult males show typically. In the absence of high concentrations of sex steroid levels or receptor-mediated activity during development, a female-typical (ie, androphilic) sexual preference for male sex partners develops.

Sexually dimorphic neural groups in the medial preoptic area of rats and ferrets have been associated with sexual partner preferences. In male rats, a positive correlation was demonstrated between the volume of the sexual dimorphic nucleus of the preoptic area (SDN) and the animal's preference for a receptive female,[54] although this was not replicated in a recent study.[55] Furthermore, in both rats and ferrets, destruction of the SDN caused males to show either neutral or androphilic preferences.[56]

Naturally occurring same-sex interactions involving genital arousal have been reported in hundreds of animal species; however, they often appear to be motivated by purposes other than sex and may serve to facilitate other social goals.[57,58] Exclusive and enduring same-sex orientation is, however, extremely rare among animals and has only been documented conclusively and studied systematically in certain breeds of domestic sheep.[59,60] Approximately 6% to 8% of Western-breed domestic rams choose to exclusively court and mount other rams, but never ewes, when given a choice. No social factors, such as the general practice of rearing in same sex groups or an animal's dominance rank, were found to affect sexual partner preferences in rams. Consistent with the organisational theory of sexual differentiation, sheep have an ovine sexually dimorphic preoptic nucleus (oSDN) that is larger and contains more neurones in female-oriented (gynophilic) rams than in male-oriented rams (androphilic) and ewes (androphilic).[61] Thus, morphological features of the oSDN correlate with a sheep's sexual partner preference. The oSDN already exists and is larger in males than in females before sheep are born, suggesting that it could play a causal role in behaviour.[62] The oSDN differentiates under the influence of prenatal testosterone after the male genitals develop, but is unaffected by hormone treatment in adulthood.[63] Appropriately timed experimental exposure of female lamb foetuses to testosterone can alter oSDN size independently of genetic and phenotypic sex.[13] However, males appear to be resistant to suppression of the action of androgen during gestation because the foetal hypothalamic-pituitary-axis is active in the second trimester (term pregnancy approximately 150 days) and mitigates against changes in circulating testosterone that could disrupt brain masculinisation.[64] These data suggest that, in sheep, brain sexual differentiation is initiated during gestation by central mechanisms acting through gonadotrophin-releasing hormone neurones to stimulate and maintain the foetal testicular testosterone synthesis needed to masculinise the oSDN and behaviour. More research is required to understand the parameters of oSDN development and to causally relate its function to sexual partner preferences in sheep. Nonetheless, when considered together, the body of animal research strongly indicates that male-typical partner preferences are controlled at least in part by the neural groups in the preoptic area that differentiate under the influence of pre- and perinatal sex steroids.

4.2 | Human studies

4.2.1 | Genes—Evidence from family and twin studies suggests that there is a moderate genetic component to sexual orientation.[50] One recent study estimated that approximately 40% of the variance in sexual orientation in men is controlled by genes, whereas, in women, the estimate is approximately 20%.[65] In 1993, Hamer et al[66] published the first genetic linkage study that suggested a specific stretch of the X chromosome called Xq28 holds a gene or genes that predispose a man to being homosexual. These results were consistent with the observations that, when there is male homosexuality in a family, there is a greater probability of homosexual males on the mother's side of the family than on the father's side. The study was criticised for containing only 38 pairs of gay brothers and the original finding was not replicated by an independent group.[67] Larger genome-wide scans support an association with Xq28 and also found associations with chromosome 7 and 8,[68,69] although this has also been disputed.[70] Scientists at the personal genomics company 23andme performed the only genome-wide association study of sexual orientation that looked within the general population.[71] The results were presented at the Annual Meeting of the American Society for Human Genetics in 2012, although they have not yet been published in a peer-reviewed journal. Although no genetic loci reaching genome-wide significance for homosexuality among men or women, the genetic marker closest to significance was located in the same region of chromosome 8 in men as that implicated in linkage studies. Other molecular genetic evidence suggests that epigenetic factors could influence male sexual orientation, although this has yet to be demonstrated.[72,73]

4.2.2 | Hormones—The leading biological theory of sexual orientation in humans, as in animals, draws on the application of the organisational theory of sexual differentiation. However, this theory cannot be directly tested because it is not ethical to experimentally administer hormones to pregnant women and test their effect on the sexual orientation of their children. Naturally occurring and iatrogenic disorders of sex development that involve dramatic alterations in hormone action or exposure lend some support to a role for prenatal hormones, although these cases are extremely rare and often difficult to interpret.[74] Despite these limitations, two clinical conditions are presented briefly that lend some support for the organisational theory. More comprehensive presentations of the clinical evidence on this topic can be found in several excellent reviews.[74–76]

Women born with congenital adrenal hyperplasia (CAH) and exposed to abnormally high levels of androgens in utero show masculinised genitals, play behaviour and aggression.[74,77] They also are less likely to be exclusively heterosexual and report more same-sex activity than unaffected women, which suggests that typical female sexual development is disrupted. Although it appears plausible that these behavioural traits are mediated through effects of elevated androgens on the brain, it is also possible that the sexuality of CAH women may have also been impacted by the physical and psychological consequences of living with genital anomalies or more nuanced effects of socialisation.[78] There is also evidence for prenatal androgen effects on sexual orientation in XY individuals born with cloacal exstrophy. It was reported originally that a significant number of these individuals eventually adopt a male gender identity even though they had been surgically reassigned and raised as girls. Follow-up studies found that almost all of them were attracted to females (i.e.

gynophilic).[33,50] The outcomes reported for both of these conditions are consistent with the idea that prenatal testosterone programs male-typical sexual orientation in adults. However, effects on sexual orientation were not observed across the board in all individuals with these conditions, indicating that hormones cannot be the only factor involved.

4.2.3 | Neuroanatomy—Additional evidence that supports a prenatal organisational theory of sexual orientation is derived from the study of anatomical and physiological traits that are known to be sexually dimorphic in humans and are shown to be similar between individuals sharing the same sexual attraction. Neuroanatomical differences based on sexual orientation in human males have been found. LeVay[79] reported that the third interstitial nucleus of the anterior hypothalamus (INAH3) in homosexual men is smaller than in heterosexual men and has a similar size in homosexual men and women. Based on its position and cytoarchitecture, INAH3 resembles the sheep oSDN, which has similar differences in volume and cell density correlated with sexual partner preference. This similarity suggests that a relevant neural circuit is conserved between species. A recent review and meta-analysis of neuroimaging data from human subjects with diverse sexual interests during sexual stimulation also support the conclusion that elements of the anterior and preoptic area of the hypothalamus is part of a core neural circuit for sexual preferences.[80]

Other neural and somatic biomarkers of prenatal androgen exposure have also been investigated. McFadden[81] reported that functional properties of the inner ear, measured as otoacoustic emissions (OAEs), and of the auditory brain circuits, measured as auditory evoked potentials (AEPs), differ between the sexes and between heterosexual and homosexual individuals. OAEs and AEPs are usually stronger in heterosexual women than in heterosexual men and are masculinised in lesbians, consistent with the prenatal hormone theory. However, OAEs were not different in homosexual males and AEPs appear to be hyper-masculinised. The second digit to fourth digit (2D:4D) ratio, which is the length of the second digit (index finger) relative to that of the fourth digit (ring finger), is another measure that has been used as a proxy for prenatal androgen exposure. The 2D:4D ratio is generally smaller in men than in women,[82,83] although the validity of this measure as a marker influenced by only prenatal androgen exposure has been questioned.[84] Nonetheless, numerous studies have reported that the 2D:4D ratio is also on average smaller in lesbians than in hetero-sexual women, a finding that has been extensively replicated[85] and suggests the testosterone plays a role in female sexual orientation. Similar to OAEs, digit ratios do not appear to be feminised in homosexual men and, similar to AEPs, may even be hyper-masculinised. The lack of evidence for reduced androgen exposure in homosexual men (based on OAEs, AEPs and digit ratios) led Breedlove[85] to speculate that there may be as yet undiscovered brain-specific reductions in androgen responses in male foetuses that grow up to be homosexual. No variations in the human androgen receptor or the aromatase gene were found that relate to variations in sexual orientation.[86,87] However, Balthazart and Court[88] provided suggestions for other genes located in the Xq28 region of the X-chromosome that should be explored and it remains possible that expression levels of steroid hormone response pathway genes could be regulated epigenetically (11).

4.2.4 | Maternal immune response—Homosexual men have, on average, a greater number of older brothers than do heterosexual men, a well-known finding that has been called the fraternal birth order (FBO) effect.[89] Accordingly, the incidence of homosexuality increases by approximately 33% with each older brother.[90] The FBO effect has been confirmed many times, including by independent investigators and in non-Western sample populations. The leading hypothesis to explain this phenomenon posits that some mothers develop antibodies against a Y-linked factor important for male brain development, and that the response increases incrementally with each male gestation leading, in turn, to the alteration of brain structures underlying sexual orientation in later-born boys. In support of the immune hypothesis, Bogaert et al[91] demonstrated recently that mothers of homosexual sons, particularly those with older brothers, have higher antibody titers to neurolignin 4 (NLGN4Y), an extracellular protein involved in synaptic functioning and presumed to play a role in foetal brain development.

5 | CONCLUSIONS

The data summarised in the present review suggest that both gender identity and sexual orientation are significantly influenced by events occurring during the early developmental period when the brain is differentiating under the influence of gonadal steroid hormones, genes and maternal factors. However, our current understanding of these factors is far from complete and the results are not always consistent. Animal studies form both the theoretical underpinnings of the prenatal hormone hypothesis and provide causal evidence for the effect of prenatal hormones on sexual orientation as modelled by tests of sexual partner preferences, although they do not translate to gender identity.

Sexual differentiation of the genitals takes place before sexual differentiation of the brain, making it possible that they are not always congruent. Structural and functional differences of hypothalamic nuclei and other brain areas differ in relation to sexual identity and sexual orientation, indicating that these traits develop independently. This may be a result of differing hormone sensitivities and/or separate critical periods, although this remains to be explored. Most findings are consistent with a predisposing influence of hormones or genes, rather than a determining influence. For example, only some people exposed to atypical hormone environments prenatally show altered gender identity or sexual orientation, whereas many do not. Family and twin studies indicate that genes play a role, but no specific candidate genes have been identified. Evidence that relates to the number of older brothers implicates maternal immune responses as a contributing factor for male sexual orientation. All of these mechanisms rely on correlations and our current understanding suffers from many limitations in the data, such as a reliance on retrospective clinical studies of individuals with rare conditions, small study populations sizes, biases in recruiting subjects, too much reliance on studies of male homosexuals, and the assumption that sexuality is easily categorised and binary. Moreover, none of the biological factors identified so far can explain all of the variances in sexual identity or orientation, nor is it known whether or how these factors may interact. Despite these limitations, the existing empirical evidence makes it clear that there is a significant biological contribution to the development of an individual's sexual identity and sexual orientation.

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Correction: Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria

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Notice of republication

After publication of this article [1], questions were raised that prompted the journal to conduct a post-publication reassessment of the article, involving senior members of the journal's editorial team, two Academic Editors, a statistics reviewer, and an external expert reviewer. The post-publication review identified issues that needed to be addressed to ensure the article meets *PLOS ONE*'s publication criteria. Given the nature of the issues in this case, the *PLOS ONE* Editors decided to republish the article, replacing the original version of record with a revised version in which the author has updated the Title, Abstract, Introduction, Discussion, and Conclusion sections, to address the concerns raised in the editorial reassessment. The Materials and methods section was updated to include new information and more detailed descriptions about recruitment sites and to remove two figures due to copyright restrictions. Other than the addition of a few missing values in Table 13, the Results section is unchanged in the updated version of the article. The Competing Interests statement and the Data Availability statement have also been updated in the revised version. The original version of the published article is appended to this Correction as S1 File.

This Correction Notice serves to provide additional clarifications and context for the article in response to questions raised during the post-publication review of this work.

Emphasis that this is a study of parental observations which serves to develop hypotheses

This study of parent observations and interpretations serves to develop the hypotheses that rapid-onset gender dysphoria is a phenomenon and that social influences, parent-child conflict, and maladaptive coping mechanisms may be contributing factors for some individuals. Rapid-onset gender dysphoria (ROGD) is not a formal mental health diagnosis at this time. This report did not collect data from the adolescents and young adults (AYAs) or clinicians and therefore does not validate the phenomenon. Additional research that includes AYAs, along with consensus among experts in the field, will be needed to determine if what is described here as rapid-onset gender dysphoria (ROGD) will become a formal diagnosis. Furthermore, the use of the term, rapid-onset gender dysphoria should be used cautiously by clinicians and parents to describe youth who appear to fall into this category. The term should not be used in a way to imply that it explains the experiences of all gender dysphoric youth nor should it be used to stigmatize vulnerable individuals. This article has been revised to better reflect that these parent reports provide information that can be used to develop hypotheses about factors that may contribute to the onset and/or expression of gender dysphoria among this demographic group.

Because this is a study of parent reports, there is some information about the AYAs that the parents would not have access to and the answers might reflect parent perspectives. Examples where parent answers reflect their perspective of the AYA include answers concerning the child's mental well-being, the parent-child relationship, and whether the child has high expectations about transitioning. However, it is also important to note that there are other survey items where the parent would have direct access to information about their child and that those answers reflect items that can be directly observed. Examples of this type include age, natal sex, diagnoses given by medical providers in the presence of the parent, directly observed behaviors of the child and the child's friend group, school performance, whether the child has dropped out or required a leave of absence from school, has been unable to hold a job, whether the child went to a clinic, or received treatment. Readers are reminded to keep in mind that this is a study of parent report and consideration of what information parents may or may not have access to is an important element of the findings.

Questions on whether the article describes adolescent-onset gender dysphoria or if it describes something new

There is some controversy over whether what is described as rapid onset of gender dysphoria, particularly in natal females, falls under the existing definition of late-onset or adolescent-onset gender dysphoria or whether it represents a new kind of development or presentation. This controversy might be a false dichotomy because both might be true. Although recent observations of adolescents and young adults who are predominantly natal female having a sudden onset of gender dysphoria symptoms beginning during or after puberty might technically fall under the existing definitions and criteria for adolescent and adult gender dysphoria [2], the substantial change in the demographics of patients presenting for care, the inversion of the sex ratio with disproportionate increase in adolescent natal females [3–5], and the new phenomenon of natal females exhibiting adolescent-onset and late-onset gender dysphoria [6–8] signal that something new may be happening as well. These changes may indicate that there are new etiologies leading to gender dysphoria and it is unclear, particularly without research about these new populations, whether gender dysphoria in this context has the same outcomes, desistence and persistence rates, and response to treatment as the gender dysphorias that have been previously studied.

Expanded discussion of qualitative analyses

Because this is a descriptive, exploratory study into a new topic with very little existing data, the addition of the qualitative analysis of two questions in addition to the quantitative analysis allowed for a greater depth of information to be used in the development of hypotheses. A grounded theory approach was selected as the strategy of choice for handling the qualitative data. There were two reviewers consisting of a professor with a PhD degree and expertise in qualitative methods (MM) [9] and the author (LL) who holds an MD and MPH degree, and has published both qualitative and quantitative research papers [10–11]. Each reviewer independently read and re-read the open-text responses in an iterative process to identify major themes arising from the data. Once each reviewer independently listed major themes and coded the open-text responses according to those themes, both reviewers compared notes to collaboratively revise and refine the major themes identified. Once an agreed-upon final list of themes was developed, attention was turned back to the data to code the open-text response with the final list of themes. After this task was completed, LL selected salient quotes to reflect each major theme, shared the quotes with MM, and both discussed collaboratively until agreement for the final list of major themes and associated quotes was reached. The incorporation of both the qualitative and quantitative analysis allowed for a more vivid picture of parent perspectives about the friendship group dynamics and behaviors and clinician interactions than could have been obtained from just one type of analysis.

Clarification of study design, methods, and related limitations

As mentioned in the article, the study design of this research falls under descriptive research: as such, it did not assign an exposure, there were no comparison groups, and the study's output was hypothesis-generating rather than hypothesis-testing [12]. Descriptive studies often represent a first inquiry into an area of research and the findings of descriptive studies are used to generate new hypotheses that can be tested in subsequent research [12–13]. Because of the known limitations of descriptive studies, claims about causal associations cannot be made [12], and there were none made in the article. The conclusions of the current study are that the findings raise certain hypotheses and that more research is needed. Simple descriptive metrics to describe the quantitative characteristics of a sample in a descriptive study are the appropriate measures to use in this study. Additionally, because the data were collected at one point in time, no claims of cause and effect can be made.

All research methods have advantages and limitations. Obtaining information from parents (and guardians) about the health and well-being of children and adolescents is an established method of research [14]. Parental report, used elsewhere and in this study, offers the advantages of collecting data from adults who are knowledgeable about the child, who are able and willing to complete research activities such as detailed surveys, and who can provide details that are not available by other methods. Limitations of parental report include information that parents may not be aware of and parental biases. Anonymous surveys, used elsewhere and in this study, are advantageous for topics that might be stigmatized and can allow participants to be more honest in their responses but introduce the limitation that the researcher cannot verify the identity and experiences of the participants. The use of targeted recruitment and convenience samples, used elsewhere and in this study, offers the benefit of connecting with hard-to-reach populations but introduces limitations associated with selection bias that can subsequently be addressed by further studies. For the current study, selection bias may have resulted in findings that are more positive or more negative than would be found in a larger and less self-selected population. Subsequent studies should address these issues.

Updated Information about recruitment

Concerns were raised that this study only posted links to the recruitment information on selected sites that are viewed as being unsupportive of transition. However, announcements about the study included requests to distribute the recruitment information and link, and because information about where the participants encountered the announcement was not collected, it is not known which populations were ultimately reached. It has come to light that a link to the recruitment information and research survey was posted on a private Facebook group perceived to have a pro-gender-affirming perspective during the first week of the recruitment period (via snowball sampling). This private Facebook group is called "Parents of Transgender Children" and has more than 8,000 members. This means that parents participating in this research may have viewed the recruitment information from one of at least four sites with varied perspectives. Specifically, three of the sites that posted recruitment information expressed cautious or negative views about medical and surgical interventions for gender dysphoric adolescents and young adults and cautious or negative views about categorizing gender dysphoric youth as transgender. And, one of the sites that posted recruitment information is perceived to be pro-gender-affirming. The rest of the Correction notice will refer to recruitment from the four sites that are known to have posted the survey in the first week of recruitment: 4thwavenow, transgendertrend, Youth Trans Critical Professionals, and Parents of Transgender Children.

Parental approaches to gender dysphoria and views on medical interventions

To oversimplify parental approaches as simply "accepting" or "rejecting" misrepresents the range of responses and complexity of approaches that parents take when addressing the needs of their gender dysphoric children. Parental approaches are complex and cover many variables. For example, one parental approach might be to affirm the child as a person, support gender nonconformity, support gender exploration, support mental health evaluation and treatment as needed, support the exploration of potential underlying causes for the dysphoria while expressing caution about medical interventions. Another approach might be to affirm the child's newly declared gender identity, support gender nonconformity, support a liberal approach to medical intervention while expressing caution about mental health evaluation and caution about the exploration of potential underlying causes for the dysphoria. To categorize the former as "rejecting" and the latter as "accepting" would be inaccurate.

This study recruited participants based on whether participants thought their child exhibited a sudden or rapid onset of gender dysphoria beginning during or after puberty and did not recruit based on parental beliefs about what types of approaches toward gender dysphoric AYAs are best. Although one of the sites posting recruitment information might be considered to hold a pro-gender affirming perspective and three sites might be considered to hold a cautious or even negative perspective about medical or surgical interventions, the site where a participant first heard about the study may not be an accurate reflection of their beliefs and whether they endorse or disagree with the content of the websites. Data about where participants first heard about this study were not collected. Future studies should seek a wider array of websites to post recruitment information, recruit from clinicians with varied approaches to gender dysphoria, and ask specific questions about parental beliefs regarding their approach to their child's gender dysphoria, including: whether parents support or don't support gender exploration, gender nonconformity, mental health

evaluation and treatment, exploration of potential underlying causes for dysphoria, non-heterosexual sexual identity, and whether they hold a liberal, cautious or negative view about the use of medical and surgical interventions for gender dysphoric youth. Exploration about what types of affirmation are endorsed by parents including affirmation of the child as a person and affirmation of the child's gender identity would also be valuable.

Expanded discussion about limitations and biases

Regarding the reporting of gender dysphoria, an absence of childhood gender dysphoria and whether the AYA was gender dysphoric at the time of survey completion were based on parent report of whether certain indicators of gender dysphoria were observed prior to puberty or at the time of the survey. These determinations were not diagnoses made by clinicians. Three of the indicators listed in the DSM-5 include information that a parent might not have access to (unless the child told them directly) [2], and therefore answers based on parent perceptions may not accurately reflect the experiences or traits of the AYAs themselves. However, the other five indicators include readily observable behaviors and preferences that would seem difficult for a parent not to notice such as: strong preference or strong resistance to wearing certain kinds of clothing; strong preference or strong rejection of specific toys, games and activities; and strong preference for playmates of the other gender [2]. It is possible that a parent could have ignored some of these indicators, though other people in the child's life may have observed them. To improve the reliability of this measure, future studies should include evaluation from clinicians with input from parents, AYAs and from third party informants such as teachers, pediatricians, mental health professionals, babysitters, and other family members who knew the youth during childhood to verify the whether the readily observable behaviors and preferences were present or absent during childhood.

For a clinician to make a diagnosis of gender dysphoria in childhood, a child would need to exhibit at least six of the eight indicators. Given that 97.6% of the participants reported 2 or fewer readily observable indicators, even if hypothetically all participants incorrectly under-reported all three of the subtler indicators, 97.6% would still have fewer than six indicators. So, although no clinical evaluation was performed and a clear presence or absence of a diagnosis cannot be verified, given the reports of the easily observed behaviors and preferences, it can be said that it would be very unlikely for these AYAs to have met criteria for childhood gender dysphoria if they had seen a clinician for an evaluation.

There is expected variation in how objective parents can be about their own children. Some individual biases may limit the objectivity of parents. This descriptive study was not designed to explore or measure the objectivity of participants. Participants may have first learned about this study from one of four (or more) sites described previously where recruitment information was posted. It is possible that exposure to websites that take a cautious or negative approach to transition during adolescence and young adulthood and exposure to websites that take a pro-gender-affirming approach might influence how parents report about their children's experiences. There have not been any studies to determine if parents who seek information from online sites in general, don't seek information from online sites, or seek information from specific online sites, including the four sites noted for this study, differ in their ability to provide objective assessments of their children. However, if there were an excess of participants who, compared to other parents who take surveys reporting on their children, were less able to be objective about their children, it could limit some of the findings of the study, particularly for findings that are more interpretive rather than the findings that are more concrete.

The research survey did not specifically ask whether parents supported their AYAs' exploration of gender identity, so whether and what numbers of participants supported their child's exploration of gender identity is unknown. However, if there were an excess of parents who did not support the exploration of gender identity, it could potentially result in higher reports of declining mental health. The parents' perception that their child's mental health and the parent-child relationship were worse after the child announced a transgender-identification could be due to several variables such as conflict between parent and child, maladaptive coping mechanisms, or worsening psychiatric issues unrelated to gender. The trajectories for adolescent-onset gender dysphoria are not well understood and additional research is desperately needed.

There are many ways that parents can provide support for their child which include: affirming them as a unique and valuable person and as a loved member of the family; supporting their emotional and financial needs; supporting them in pursuing their interests; supporting them to develop the skills needed for self-sufficiency; supporting their choices of gender nonconforming clothing and interests; supporting their exploration of their identity; and supporting them in their critical thinking skills. Parental support is multifaceted and should not be oversimplified into a binary of whether a parent agrees or disagrees with a specific medical course. This study was not designed to measure different types of support provided by parents or levels of support. If there were an excess of parents who were unsupportive of their children, it might affect some of these initial findings. The nature and extent of parental support—including the many different ways that parents can support their children in becoming healthy, self-sufficient adults—is well worth further study.

Clarification of Fig 1

The purpose of Fig 1 was to provide the reader with a quick sense of what kinds of advice can be found and shared on Reddit and Tumblr. One example includes an excerpt from a publicly available Tumblr blog that posted a list of purported indirect signs of gender dysphoria. This excerpt is indeed an example of advice that can be found on Tumblr. Note, however, that the excerpted Tumblr post itself does not reflect the full content of the original blog it refers to, nor does the excerpt in Fig 1. The original blog is titled, "'That was dysphoria?' 8 signs and symptoms of indirect gender dysphoria" [15].

Discussion of the ICD-11 change from "gender dysphoria" to "gender incongruence"

The ICD-11 will go into effect in January 2022, and, with this change, the new diagnosis of "gender incongruence" will replace "gender dysphoria." Because the current descriptive, exploratory study raises hypotheses about factors that may contribute to the onset and/or expression of gender dysphoria and concludes that more research is needed, it is unlikely that the change in diagnostic criteria will appreciably change the conclusion of the study, although the terminology may become outdated.

Supporting information

S1 File. PDF of the original article version that was published on August 16, 2018 (two figures removed due to copyright restrictions).
https://doi.org/10.1371/journal.pone.0214157.s001
(PDF)

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FORMAL COMMENT

Formal comment on: Parent reports of adolescents and young adults perceived to show signs of a rapid onset of gender dysphoria

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I have read with great attention the article by Lisa Littman published in *PLOS ONE* [1]. Further study on the forms of presentation of gender dysphoria in childhood and adolescence is imperative since we still lack consensus regarding the best diagnostic and treatment approaches for this matter. Dr. Littman's main objectives were "to (1) collect data about parents' observations, experiences, and perspectives about their AYA children showing signs of a rapid onset of gender dysphoria that began during or after puberty, and (2) develop hypotheses about factors that may contribute to the onset and/or expression of gender dysphoria among this demographic group" [1].

One possibility to address the purpose that the study originally proposes is to follow a group of gender variant young people evaluated by mental health professionals in a longitudinal way, to assess if those who persist demanding gender affirmation differ (in terms of contact and social influence, or other factors) from those who do not persist. Another (much simpler) approach could involve a cross-sectional design, in which transgender youth answered questions concerning their networks and peer influence. In contrast to those possible approaches, Dr. Littman's research provides only indirect evidence of the role of the influence of social and media contagion on young people's gender identity. Littman's article recruited parents online. Some of the websites that posted recruitment information about the study might attract parents who are more likely to question their child's gender self-identification and the current best healthcare approaches. No youth were enrolled.

Several studies have pointed out the importance of involving young people in studies of their health [2]. From a bioethical point of view, despite several dilemmas [3], this need is guided by the principle of the best interest of children and their right to be represented in the matters that affect them [4]. In this regard, with respect to medical procedures related to gender in childhood (in trans and intersex cases), the WHO among other agencies [5], already recognized the need to take children's voices into account in order to avoid coercive treatments: "the best interests of the child should always be the primary concern, giving due weight to the views of children in accordance with their age and maturity, and taking into account their evolving capacity for decision-making" (p13).

Evidence also points to a low correlation between parents' and children' self-evaluation in several domains of mental health [6]. For example, regarding quality of life, a systematic review verified that parent and children do not agree in the evaluation for children non-observable states (such as emotions) [6]. The authors point to the need for collecting information from both parts. The same seems to be true in the assessment of children's anxiety [7]. This

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discrepancy may be due to parental attribution bias in the recollection of children's medical history [8]. Furthermore, parents' biases may be enhanced in the presence of stress [9] and psychological symptoms [10]. Studies have shown that this could be the case for a good proportion of parents of gender-variant children and adolescents, who tend to present negative attitudes toward their offspring gender variation [11, 12].

The level of evidence produced by the Dr. Littman's study cannot generate a new diagnostic criterion relative to the time of presentation of the demands of medical and social gender affirmation. Several procedures still need to be adopted to generate a potential new subcategory of gender dysphoria that has not yet been clinically validated. One of these procedures is the assessment of mental health professionals trained according to the World Professional Association for Transgender Health (WPATH) [13] and the American Psychological Association (APA) [14] guidelines, interviewing not just the family, but the youth (longitudinally).

In addition, it is important to note that psychological distress, which is investigated as an outcome in the study in question, is not central to the new diagnosis of gender incongruity proposed by WHO in the new International Classification of Diseases, ICD-11. WHO removed transsexualism from the chapter of psychiatric conditions in the ICD-10 and placed gender incongruence in a chapter of general sexual health and recognizing that the psychological distress could be the result of stigmatization and maltreatment, rather than an intrinsic aspect of gender identity [15].

Parental anxiety seems to increase with the level of gender nonconformity of their children and this anxiety is associated with negative impacts on the well-being of their children [16]. It is therefore not surprising that growing up without proper healthcare and in families that do not support gender and sexual diversity may negatively impact the mental health outcomes of gender variant young people (growing-up to be trans-adults or not) [17].

In this regard, it should be noted that not all children with gender variability grow to be transgender adults and that a transgender adult does not always grow from a childhood diagnosis [18]. In the WPATH' Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People [13], one of the roles of mental health professionals working with children and adolescents with gender dysphoria is to help families to have an accepting and nurturing response to the concerns of their children. Families should be supported in managing uncertainty and anxiety; thus, helping youth to develop a positive self-concept. This does not necessarily mean consenting with an early transition. The American Psychological Association has categorically stated that healthcare professionals should be encouraged to educate themselves about the advantages and disadvantages of social transition during childhood and adolescence and discuss these factors with their youth clients and their parents. It is fundamental to emphasize to parents the importance of allowing their children to be free to return to a gender identity that is aligned with the sex assigned at birth at any point, if it is the case [14].

These developmental complexities are often neglected and deserve further investigation. Data such as those collected by Dr. Littman about parents' views and experiences with youth who show sudden signs of gender dysphoria should be further investigated and documented. The forms of presentation of gender variations in childhood are little known, the clinical management of these children is not fully established, and the refinement of the diagnostic criteria are imperative. However, we must always keep in mind the role that transphobia (still prevalent [19]) has in the negative impact that this gender variation has on society, parents, and therefore on children.

Author Contributions

Writing – original draft: Angelo Brandelli Costa.

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Psychotherapy for Unwanted Homosexual Attraction Among Youth

American College of Pediatricians – January 2016

ABSTRACT: Although there are no scientific studies which evaluate psychotherapy for unwanted homosexual attraction (UHA) among adolescents, there are four studies that examine "sexual orientation change efforts"(SOCE) among adults which have been referenced to support legislative efforts to ban minors from receiving psychotherapy for UHA. This review critically examines each of those four studies. Pediatricians, mental health providers, educators, and policy makers need to know there is no evidence that psychotherapy for UHA is any more or less harmful than the use of psychotherapy to treat any other unwanted psychological or behavioral adaptation. Therefore, science does not support laws that prohibit minors with UHA from receiving psychotherapy in accordance with their personal goals and values.

Introduction

In order to assess the claim that providing psychotherapy to minors with unwanted homosexual attraction (UHA) is substantially harmful, Dr. Christopher Rosik, past President of the Alliance for Therapeutic Choice, conducted a Medline and PsycARTICLES search of the medical and psychiatric literature.[1] Medline and PsycARTICLES are the major medical and mental health databases utilized by the medical and psychological community. Both searches revealed that there is not a single study of youth who have received psychotherapy for UHA. Instead, all claims of harm to youth in the literature are based upon one of three categories of research: anecdotal accounts of harm experienced by adults who engaged in sexual orientation change efforts (SOCE), inferences from other research domains unrelated to psychotherapy for UHA (e.g., harms from family rejection of gay youth), and citations of the pronouncements on SOCE from professional mental health and medical associations. These various sources cite one another in an almost symbiotic manner that provides no objective information regarding youth who choose psychotherapy for UHA.

SOCE: an unscientific term

In 2012 the American Psychological Association published *Guidelines for psychological practice with lesbian, gay, and bisexual clients.*[2] The third guideline (which is based upon a single adult study) states that sexual orientation change efforts have not been proven effective, and asserts that attempts to change sexual orientation "cause harm to many clients."[2] Accordingly, the guideline directs therapists to discourage patients with UHA from pursuing their goal of diminishing their homosexual attraction, and to offer those patients gay affirming therapy instead.

"Sexual Orientation Change Efforts" (SOCE) is a term coined by the American Psychological Association (APA) to replace terms such as reparative, ex-gay, change and conversion therapy. SOCE, however, is a dubious and problematic term. This is because "efforts" includes all forms of psychotherapy, 12 step programs, prayer meetings, unethical aversion therapies and everything in between. The following analogy illustrates why this is scientifically problematic. Imagine if physicians used the term "Alcoholic Change Efforts" (ACE) to describe all the possible ways alcoholics distressed by their unwanted alcohol attraction may pursue change. Some may enter psychodynamic therapy to learn and treat the underlying issues for which they self-medicate with alcohol; others may join Alcoholics Anonymous, some may join weekly prayer meetings for help, others may choose aversive pharmacologic therapy (e.g.: antabuse), and still others may engage in a combination of two or more of the above. All of these "efforts" attempt to work toward the goal of improved health and social function, but only one of these "efforts" is psychotherapy. Consequently, it would be inaccurate to analyze the individuals engaged in these various

"efforts" in a single study as though they were receiving the same treatment and to then make claims regarding how effective or ineffective professional psychotherapy is for alcoholics. SOCE research, as will become evident, is rife with such ambiguity and is therefore fatally flawed.

An additional problem with the term SOCE is that the APA does not define what constitutes successful "change." To continue with the previous analogy, some may argue that only alcoholics who attain a lifetime of abstinence are "changed." Yet, some alcoholics will only be able to decrease their intake and dependence upon alcohol. Both groups of individuals will have experienced a healthful "change" though their endpoints differ. In other words, professional medical and psychiatric organizations should and often do recognize that successful change occurs on a continuum; with regard to psychotherapy for UHA, however, the APA fails to acknowledge this reality.[3]

It is also crucial to understand that legislation put forth and passed by gay advocates solely bans minors with UHA from receiving professional psychotherapy. These laws leave minors with UHA no choice but to affirm what they perceive as a false sexual identity, or to pursue their desire for change under the direction of unlicensed individuals and/or religious ministries. Far from ensuring adolescent well-being, this legislation eliminates two of the greatest safeguards for patient health:(1) the right to informed consent and (2) the right to self-determination. Such hostility to patient rights is unprecedented within the mental health field and directly violates Principle E of the APA's ethics code published in 2010. The code, entitled *Respect for People's Rights and Dignity*, states "Psychologists respect the dignity and worth of all people, and the rights of individuals to privacy, confidentiality, and self-determination."[4]

Since the 1970s, psychological and psychiatric professionals have increasingly deemed aversion therapies to be unethical and have therefore abandoned them without the need for judicial or legislative intervention.[5] For example, the Alliance for Therapeutic Choice and Scientific Integrity published practice guidelines for therapists who assist clients with unwanted homosexual attractions.[6] Aversion therapy would be excluded by Guideline 6, which states that, "Clinicians are encouraged to utilize accepted psychological approaches to psychotherapeutic interventions that minimize the risk of harm when applied to clients with unwanted same-sex attraction." Aversion therapy violates the principle of this Guideline. Remarkably, gay activists in the state of Washington actually defeated bipartisan legislation which would have banned aversion therapy for UHA because the legislation still allowed ethical (non-aversive) forms of psychotherapy for UHA.[7] This opposition underscores all the more that it is the patient's right to self-determination (specifically, his or her right to choose professional help with UHA) that is under attack, not an abusive therapeutic technique.

Prior to 2002, criticism of SOCE was based solely upon theoretical arguments and anecdotal reports.[8] This changed with the publication of a survey by Drs. Ariel Shidlo and Michael Schroeder. The 2009 APA Task Force Report cited their work alone as definitive proof that "many are harmed by SOCE" and, based on it, concluded that all forms of SOCE should be discouraged.[9] The reason anti-SOCE advocates have relied primarily upon this study is that, until recently, it was the only one to provide quantitative data. Three similar surveys have since been published. This statement reviews each of the four studies and closes with a summative discussion regarding psychotherapy for UHA.

Changing sexual orientation: A consumer's report by Drs. Shidlo and Schroeder (2002)[10]

Description

Shidlo and Schroeder sought to provide empirical evidence on SOCE for individuals pursuing the goal of altering homosexual attractions. The researchers also investigated how individuals perceived their failure to change or their success in changing, and speculated how their survey results might impact ethical issues of SOCE. They studied a convenience sample of 202 individuals who reported pursuing a change

in their sexual orientation. They found that 87% of participants described themselves as failing therapy and of experiencing some form of harm. Only 13% (26 participants) perceived themselves as having been successful. Twelve of the successful clients described themselves as "successful and struggling with behavior management techniques," six identified as "successful and not struggling with behavior management techniques," and eight described themselves as experiencing a "complete heterosexual shift." Among the successful clients were also perceptions of benefits beyond a change in behavior. These included other psychological benefits such as a sense of hope, improved self-esteem, increased sense of belonging, improvement in social relationships with friends and family, and spiritual benefits. In contrast, among those who perceived the therapy to be harmful were reports of depression, suicidal ideation, decreased self-esteem, sexual dysfunction, and loss of social supports when entering and leaving the ex-gay community; some also perceived spiritual harm.

Analysis

The authors acknowledge significant limitations in their study design from the outset. Specifically, they admit to potential researcher bias (they are both openly homosexual psychologists), recruitment bias (they specifically advertised for participants who had failed therapy), recall bias (most respondents received therapy years before the survey), and self-report bias as researchers lacked any objective validation of respondents' claims and/or experience. The authors also did not differentiate results according to whether respondents had received "therapy" from trained mental health professionals, a religious ministry, another lay source, or multiple sources. Additionally, authors did not rule out pre-morbid psychological conditions including depression and suicidality. Therefore, it is possible that the reported episodes of depression, suicidality, and other distressing psychological symptoms pre-dated rather than resulted from SOCE.

To fully document the inherent sample bias, the authors included an appendix displaying the initial text used in participant recruitment, which was directed toward self-perceived treatment failures:

> *Have you gone through counseling or therapy where you were encouraged to become heterosexual or ex-gay? The National Lesbian and Gay Health Association wants to hear from you. The organization is conducting research for a project entitled "Homophobic Therapies: Documenting the Damage." The NLGHA is conducting a survey of lesbians, gay men, and bisexuals who have been in counseling that tried to change their sexual orientation. They intend to use the results to inform the public about the often harmful effects of such therapies. Participation in the survey is confidential. Persons who are interested in responding can participate either through e-mail, by telephone, or in person. No record of your name, Internet address, or any other identifying information will be kept.*[10]

After the initial 20 interviews, in which the authors received unexpected reports of positive outcomes, the recruitment verbiage was changed to be less biased against identifying positive outcomes. However, the authors continued to recruit subjects solely from pro-LGBQT (pro-gay-affirmative therapy) publications. Consequently, significant selection bias remained and was acknowledged by the authors themselves.

Evaluation

This study has anecdotal value only. The authors have documented that there are individuals who have negative experiences attempting to diminish UHA, and there are others who have positive experiences; nothing more. The authors themselves state forthrightly that the data they presented, ***"do not provide information on the incidence and prevalence of failure, success, harm, help, or ethical violations in conversion therapy" (p.250, emphasis in original).***[10] Given this admission within the body of the paper, it is dishonest for the APA and others to claim that this research proves unacceptable rates of failure or

harmful outcomes for patients who pursue their informed choice to diminish UHA under the care of a licensed mental health provider.

Sexual reorientation therapy interventions by Drs. Flentje, Heck, & Cochran (2013)[11]

Description

Flentje and colleagues set out to study "typical modalities and interventions" used to facilitate SOCE. They surveyed 38 individuals who had gone through at least one "episode" of SOCE and later reclaimed a lesbian, gay or bisexual (LGB) identity. According to the authors, the results revealed that frequently used interventions had a strong emphasis on religious practices, including negative messages about LGB individuals, and employed techniques that emphasized change over validation. Some alleged unethical practices were also noted. Among the professional and policy recommendations the authors draw from their investigation is the endorsement of legal efforts to ban the option of psychotherapy from minors with UHA.

Analysis

Sample bias

In addition to being an extremely small study with low statistical power (N=38), the sample composition was highly skewed toward males (n =31), Caucasians (n = 33), and those from a highly educated background (all but one subject having completed at least a 4-year college education). This calls into question the ability to generalize findings to individuals who are less educated, non-Whites, youth, and women.

Concerns for sample bias multiply when the authors detail the setting and type of counselor participants reported as providing their SOCE. The majority of SOCE "episodes" (56.1%) were provided by religious or pastoral counselors. Another 16.8% were administered by peer counselors. Only 34.6% of SOCE "episodes" were actually provided by a licensed mental health professional. The failure of this study to disentangle religious providers from licensed therapists is a serious limitation that makes it inappropriate to draw any definitive conclusions regarding professionally conducted SOCE.

Recruitment bias

Subjects were recruited through various "ex-ex-gay" listservs. "Ex-ex-gay" individuals are those who identified as "ex-gays" at some point during their SOCE and who at the time of the study once again identified as lesbian, gay, or bisexual (LGB). This is clearly a significant bias since persons who decide to reclaim an LGB identity following failed attempts to change their same-sex attractions and behaviors are not likely to look back on those attempts with particular favor. Moreover, participants rated themselves as being "exclusively homosexual" (n =22) or "predominately homosexual" (n = 16) both prior to engaging in SOCE and at the time of the study. This indicates the sample represented the most subjectively unalterable end of the same-sex attraction spectrum.

Recall bias and self-report bias

The authors acknowledge that participant reports were retrospective and that this may have impacted the accuracy of their accounts. It can be deduced from some of the statistics that some recollections are of SOCE that occurred at least 15 years prior to the survey. This study also suffers from self-report bias in that the authors had no way of objectively validating the participants' claims.

Failure to account for potential pre-morbid psychopathology

Ten subjects reported having attempted suicide. Of these, six subjects reported a suicide attempt prior to their SOCE, seven subjects reported 1 or 2 suicide attempts during SOCE, and only one participant

indicated 2 suicide attempts following the conclusion of their SOCE. These findings suggest a significant portion of the sample was experiencing serious emotional distress prior to their SOCE, distress which cannot be definitively attributed to their SOCE experience in the absence of longitudinal data.

Failure to clearly identify type of provider involved in unethical modalities

The authors report that ethically questionable interventions occurred during 13 different courses of therapy reported by 10 different participants. They state that nine of these 13 episodes "…included a licensed or licensable professional *as one of the providers of therapy*" (emphasis added, p. 266).[11] While the authors note in this section that the only instance of holding therapy was performed by an "ex-gay layperson" to whom the subject had been referred by his pastor, they do not specify who performed the aversive techniques in this section. The reader is left not knowing whether these were performed by licensed mental health professionals or someone else involved in the subjects' care. The likelihood that these interventions were not provided by licensed mental health professionals but by laypeople is given credence by the authors' statement in a previous section that no licensed therapist was described as utilizing aversion therapy.

Evaluation

The profound methodological flaws described above render the Flentje et al. nothing short of agenda driven research. No definitive claims about providing psychotherapy to adults or minors seeking to diminish homosexual attraction may be made based on this study. In this regard it resembles the earlier research by Shidlo and Schroeder, whose methodological shortcomings it repeats, only this time accompanied by unjustified conclusions regarding harm, lack of benefit, and professional practice.

Sexual orientation change efforts among current or former LDS church members **by Drs. Dehlin, Galliher, Bradshaw, Hyde, & Crowell (2015)[12]**

Description

This investigation employed a web-based survey to enroll 1612 current or former members of the Church of Jesus Christ of Latter-day Saints (LDS) who had engaged in an effort to understand, accept, or change their same-sex attractions. A diverse sample was sought, including participants who reported past engagement in change-oriented intervention. Results indicated that private and religious change venues were far more frequent than therapist-led or group based efforts. Interventions under the auspices of non-mental health professionals were also reported to be the most damaging and least effective. When change of orientation was identified as the goal rather than "understanding" or "accepting" one's orientation, reported effectiveness was lower.

The authors noted some outcomes (e.g., acceptance of same-sex attraction and reduction in depression and anxiety) that they described as beneficial. Despite that, they said that overall findings supported the conclusion that sexual orientation is highly resistant to explicit change attempts and that SOCE are overwhelmingly either ineffective or damaging. The most ineffective/harmful methods were individual effort, church counseling, and personal righteousness, which consisted of fasting, prayer, and scripture study. The authors concluded their findings are consistent with the APA Task Force's Report, wherein SOCE is judged as not likely to be effective, SOCE benefit is related to methods not specific to change-related intervention, and therefore only acceptance-based (i.e., gay affirmative) forms of therapy are endorsed.

Analysis

Researcher bias

Author bias against SOCE is likely since all of the investigators describe themselves as "LGBTQ allies" who "…have been active in supporting the LGBTQ community, online, and national/international engagement." Four of the five authors were raised LDS, and two remain active in the church. None disclose whether or not they once pursued any form of SOCE themselves. All, however, state that they work closely with LGBTQ Mormons in professional and/or personal roles. This raises the risk that the authors are known by some of the subjects, which increases the likelihood of subject responses in the direction investigators favor. Author bias against SOCE also increases the likelihood of groupthink and the risk of failing to recognize important alternatives, resulting in tainted conclusions and social-policy recommendations.[13, 14]

Recruitment bias

Dehlin et al. state that they worked with a diverse population sample because they recruited from LDS support groups both in favor of as well as those against psychotherapy for UHA. Since 1992, the Alliance for Therapeutic Choice and Scientific Integrity (formerly NARTH), has been the national professional organization for licensed mental health providers who assist those with UHA. However, the Alliance was not contacted as a source for soliciting participants for this study. Instead, the final sample reflected that 21% of participants were solicited through liberal online and print media (e.g., Huffington Post, Religion Dispatches.org, Salt Lake Tribune, and San Francisco Chronicle). Another 21% of the sample was obtained through LDS-affiliated LGBTQ support groups, purportedly across the spectrum of beliefs regarding SOCE. One of those groups, Evergreen International (a group more favorable to psychotherapy) refused to advertise the study, though the authors do not disclose why. Electronic social media and word of mouth led 47% of participants to involvement in the study, which, given the author affinities, cannot be assumed to be representatively divided among opponents of SOCE and those sympathetic to it. Finally, 5% of the sample was solicited through non-religiously affiliated LGBTQ support organizations.

Further sample bias

Additional sample bias is evident in that 71% of participants were either inactive with the LDS Church or separated from it. This raises concerns about the representativeness of the sample and the response bias this disaffection may have introduced against SOCE. Concerns associated with retrospective, self-report surveys and the fact that 76% were male participants further hamper the reliability and generalizability of results.

Conflated variable scale and midpoint response bias

Another outcome-biasing feature is the manner in which the authors defined their primary outcome measure. Participants were asked to rate their SOCE experiences on a 5-point scale, where 1 = highly effective, 2 = moderately effective, 3 = not effective, 4 = moderately harmful, and 5 = severely harmful. This is a highly unusual rating scale in that it is anchored by terms that define different dimensions, i.e., effectiveness and harm. The endpoint outcome measures for a scale are supposed to be opposites (e.g.: effective versus ineffective; harmful versus beneficial). An outcome scale should also include better graduated responses between the endpoints; it is typical to use a seven-point scale. Dehlin and colleagues should have provided participants with two scales. The first should have been anchored by "highly effective" on one end and "highly ineffective" on the other; the second scale should have been bracketed by "significantly beneficial" versus "significantly harmful."

In addition, the midpoint of a scale is supposed to be neutral, but Dehlin and colleagues' midpoint is "not effective." Due to the midpoint response bias, this flawed scale promotes a biasing effect toward SOCE being described as lacking effectiveness. Midpoint bias refers to the statistical likelihood that respondents tend to choose a middle response when they are pressed for time, uncertain, or lacking an opinion. Seven point scales for both effectiveness and harm that would have allowed for more nuanced responding (e.g.,

the inclusion of slightly harmful or slightly beneficial, and slightly effective or slightly ineffective options) and neutral midpoints (e.g., neither harmful nor beneficial, and neither effective nor ineffective) would have been more objectively scientific. The conflation of harm and effectiveness in the response scale used in this study creates significant uncertainties about what the results actually mean.

Ideological confounds of Rosenberg's measure of self-esteem

The authors report they failed to find significant self-esteem differences between participants who had attempted SOCE and those who did not. However, this failure to find a difference may be due to ideological bias inherent in the tool chosen to measure self-esteem. The authors chose to measure psychosexual health in part through Rosenberg's (1965) measure of self-esteem. Some scales, including Rosenberg's, define their construct in a manner that is inherently biased against religious values.[15, 16, 17] Consequently, scores may reflect differences between humanistic values and theistic beliefs rather than the construct purportedly assessed by the instrument. When the antireligious humanistic dimensions of the Rosenberg scale are statistically controlled, the self-esteem ratings of conservatively religious persons are significantly improved.[17] The implication for this study is that self-esteem levels might actually have been higher than indicated for participants who remained conservatively religious. Likewise the "Quality of Life Scale" used leaves out spiritual well-being as a measured quality.

Underrepresentation of professional psychotherapy for UHA

The authors report that religious and private forms of SOCE were far more prominent in their sample than was professional psychotherapy. Whereas 85% of participants indicated engaging in either religious or private individual SOCE methods, only 44% reported some form of therapist or group-led SOCE. Engaging in "personal righteousness" (such as prayer, fasting, studying scripture, improved relationship with Jesus) was reported twice as much as pursuing professional psychotherapy. Yet the authors report that group-related and therapist-led methods tended to be rated by participants as the more effective and least harmful forms of SOCE. Furthermore, SOCE "…methods most frequently rated as 'effective' tended to be used the least and shortest duration, while methods rated most often as 'ineffective' tended to be used most frequently and for the longest duration". The authors also contend that this "effectiveness" represented not orientation change but orientation acceptance, decreases in psychological distress, and improvement in family relationships.

The authors used a standard Kinsey scale to evaluate the participants' sexual orientation. This over-representation of purportedly ineffective/harmful individual (i.e., conducted alone by oneself) and religiously-oriented SOCE methods makes the study's findings regarding Kinsey ratings and psychosocial health inappropriate as a measure of professionally conducted SOCE. These general results summed over all SOCE forms therefore are likely to be skewed in an adverse direction, and again might conceal potential positive outcomes of professional SOCE.

Positive outcomes

In spite of the multiple design flaws which bias the study against SOCE, some SOCE methods did receive mildly positive endorsements. Interestingly, these slightly positive ratings were found for therapist-led, group therapy, group retreat, and psychiatric methods. Psychotherapy was found to have moderate or greater effectiveness by 44% of respondents who sought it, with respective effectiveness ratings of 48% for psychiatry, 39% for group therapy, and 48% for group retreats. Of contextual importance is the finding that professional SOCE methods were reported far less frequently by participants than religiously oriented methods, meaning that aggregate results concerning change in Kinsey scores and psychosexual health likely provide an unrealistically negative view of professional SOCE.

Evaluation
This investigation suffers from significant methodological flaws. As a result, it offers no generalizable conclusions regarding psychotherapy for UHA in adults or minors.

SOCE through psychotherapy for LGBQ individuals affiliated with the church of Jesus Christ of Latter-Day Saints by Bradshaw, K., Dehlin, J. P., Crowell, K. A., & Bradshaw, W. S. (2015)[18]

Description
No doubt aware of the limitations of the Dehlin et al. (2015) study regarding therapist-led SOCE, this same team of authors analyzed the subsample of respondents who reported participation in psychotherapy for their conflicts regarding same-sex attraction (SSA). This sample comprised 672 men and 194 women. The authors reported that professional counseling was largely ineffective, with less than 4% of participants reporting any modification of SSA, 42% indicating their change-oriented therapy was "not at all effective," and 37% finding it to have been moderately to severely harmful. Homosexuality-affirming psychotherapy was often found to be beneficial in reducing depression, increasing self-esteem, and improving relationships. The authors conclude that there is a "very low likelihood" of sexual orientation modification and advise highly religious persons with UHA to consider this before pursuing SOCE.

Analysis
Bradshaw et al. use the same severely flawed dataset employed by Dehlin et al. (2015). Consequently, the same methodological problems of Dehlin et al.'s original research persist, as well as some additional limitations.

Additional sample bias revealed
Besides the sample bias previously noted, Bradshaw et al. (2015) observed that bisexuality was under-represented in the sample. This is a concern in that bisexuality is likely to be more responsive to change-oriented intervention than an exclusively homosexual orientation.[19] This under-representation could have reduced reports of positive SOCE outcomes in comparison to what might have been obtained with a more representative sample.

Measurement concerns
Outcomes are again measured with the problematic scale that conflates two different dimensions (harm and effectiveness). The discussion of these concerns noted in the Dehlin et al. (2015) study will not be repeated here. However, their salience can be seen in the authors' report that 42% of psychotherapy SOCE participants viewed their experience as not at all effective, 21% as moderately harmful, and 16% as severely harmful. This documentation sounds as if the results are independently derived from two different measures, as they clearly should have been. The fact that they are taken from three neighboring points on a single scale certainly creates the likelihood of a loss of important nuance in the data, thereby unduly inflating participant ratings of harm and ineffectiveness in their evaluations of professional SOCE. Again, these outcomes surely would have been different had the midpoint been defined as "not at all harmful." It should also be mentioned that the authors indicate that their survey took, on average, more than an hour to complete. This fact makes for a greater risk of significant midpoint response bias (which would bias the overall effectiveness rating of SOCE downward) since participants seek to get through an unusually long survey process as quickly as possible.

In addition, Bradshaw et al. trichotomize the goals of psychotherapy-related SOCE into change, acceptance, and understanding. Yet these are by no means mutually exclusive goals, and it is reasonable to believe that most therapists facilitating SOCE are also promoting goals of acceptance (e.g., of the reality of clients' SSA) and understanding (e.g., promoting the clients' self-discovery of the origins of

their SSA). Thus, this forced-choice categorization appears by definition to mischaracterize professional SOCE, again with a likely accompanying loss of data precision that could lend useful refinement to the study's findings.

Confounding of SOCE forms.
Another serious concern regarding this study is that participants engaged on average in 3.7 non-psychotherapy forms of SOCE interventions which were not differentiated in their overall rating scores. Open-ended responses suggested that some participants applied the outcome ratings narrowly to therapist-led SOCE, while others rated the benefit or harm of their experience across all SOCE forms utilized. Consequently, the results of this study cannot be reliably linked to professional SOCE, as they may well be adversely distorted by participants' evaluative inclusion of non-professional and unlicensed providers of SOCE in their ratings.

It is also likely that the 93 participants who reported exposure to an aversive technique in the course of their SOCE experienced this under the direction of unlicensed individuals, or engaged in it years ago when aversive treatments were common to a broad range of clinical concerns within psychology. Contemporary licensed therapists have long eschewed the use of aversive techniques when assisting those with UHA. This makes it unlikely that the aversive methodologies reported in this survey were facilitated by a licensed mental health provider in recent years.

Additional signs of bias
While not a methodological issue per se, Bradshaw et al.'s discussion of SOCE provides not so subtle indications of their partisan sentiments. For example, Bradshaw and colleagues dismiss Spitzer's 2003 research in support of change,[20] citing Spitzer's 2012 "repudiation" of his findings. However, they fail to note that several of Spitzer's participants subsequently affirmed their change of orientation and vehemently protested Spitzer's repudiation of his own 2003 results.[21] Bradshaw et al. also cite the demise of Exodus International and admissions of lack of change by its former president. This is a curious non sequitur in that Exodus was a religious ministry promoting religious forms of SOCE while the present article was supposed to critique only SOCE delivered by licensed mental health providers. Finally, the authors assert that SOCE requires disregarding the "large body of evidence" that demonstrates "a biological origin for sexual orientation." Ironically, such a definitive commitment to biological determinism is not even in keeping with the current APA opinion which states, "Many think that nature and nurture both play complex roles…."[22]

Evaluation
Bradshaw et al. conclude their article with the following statements:

"For adherents to this line of reasoning [i.e., that homosexual attraction may be diminished], the claim of a successful sexual orientation change by a few individuals is sufficient to generalize to the population at large. The clear evidence, however, is that dutiful long-term psychotherapeutic efforts to change are not successful and carry significant potential for serious harm, and that LGBQ Latter-day Saints find greater satisfaction in counseling approaches that result in acceptance or accommodation."[18]

As is evident, the authors first create a straw man argument whereby all SOCE proponents assume that change for some patients means all patients can change. They cite no literature to support this claim but then proceed to challenge this false portrayal by citing the results of their study. Clearly, this study's serious methodological weaknesses make the authors' broad generalizations scientifically unjustifiable. That Bradshaw et al. would make such unqualified conclusions places their work firmly within the realm of agenda-driven advocacy.

Conclusion

Politics has thwarted the scientific pursuit of quality research on therapy for individuals with unwanted same-sex attraction since the removal of homosexuality from the Diagnostic and Statistical Manual of Mental Disorders in 1973. It is well documented by individuals on both ends of the political spectrum that the American Psychiatric Association's declassification of homosexuality as a disorder in 1973and by the larger American Psychological Association (APA) in 1975, resulted from the imposition of a sociopolitical agenda, not from the unveiling of new supporting scientific evidence.[23, 24, 25, 26]

Nowhere is the APA's political correctness more clearly displayed than in its "Guidelines for the Prevention of Homophobic Research." In 1985 the APA's Committee on Lesbian, Gay and Bisexual Concerns established a Task Force on Non-Homophobic Research which produced detailed guidelines on avoiding research determined to be "heterosexist." The Task Force defined "heterosexist" as any proposal "conceptualizing human experience in strictly heterosexual terms and consequently ignoring, invalidating, or derogating homosexual behaviors and sexual orientation, and lesbian, gay, and bisexual relationships and lifestyles."[27] The guidelines are prominently displayed on the APA website,[28] and its contents are vigorously enforced by the LGB Concerns Committee, whose mission, in part, is "to reduce prejudice, discrimination and violence against lesbian, gay and bisexual people." As laudable as these social aims may be, it is obvious how such a norm biases the objective pursuit of knowledge regarding all matters related to non-heterosexual attractions and identities. According to Dr. Nicholas Cummings, a past President of the American Psychological Association, the result has been a political correctness that tethers the intellect and a politically correct culture that is more punitive than McCarthyism (p. xv).[26]

No therapy, whether medical, psychological, or surgical, is 100% effective. All treatments have some degree of failure. In addition, all therapies carry a degree of risk for unwanted side effects. For all forms of psychotherapy used to treat any pediatric mental health concern, there is an estimated 14%-24% deterioration rate among children and adolescents.[29] The four investigations reviewed above merely document that some adults experience various "efforts" to change UHA as ineffective and/or harmful. The question to be answered, however, is not "Do some people fail or experience harm?" but rather "Does pursuing the goal of diminishing UHA under the care of a licensed mental health professional result in disproportionate rates of harm and/or failure among minors and adults?" This question has never been scientifically addressed. It is a violation of scientific integrity for the APA, the AAP and others to claim that research proves unacceptable rates of failure or harmful outcomes occur when patients freely choose to diminish unwanted homosexual attractions under the care of a licensed mental health provider.

It is equally outrageous that legislation would be enacted to ban all forms of psychotherapy for UHA with such an absence of scientific evidence or support. Therefore, the College recommends that all such legislation be reversed and that the purview of oversight for non-aversive psychotherapy be left with medical and psychological professionals, and not in the hands of legislators. The College supports an adolescent's right to psychotherapy for UHA under the care of licensed mental health professionals. The College, together with the Alliance for Therapeutic Choice, calls for the development of an unbiased research program consisting of investigators from both sides of the sexual orientation debate to ensure that policies promoted by professional medical organizations are rooted in sound science and truly are what's best for children.

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Homosexual Parenting: A Scientific Analysis

American College of Pediatricians – May 2019

ABSTRACT: Are children reared by two individuals of the same gender as well adjusted as children reared in families with a mother and a father? Until recently the unequivocal answer to this question was "no." Within the last decade, however, professional health organizations,[1] academics, social policymakers and the media have begun asserting that prohibitions on parenting by same-sex couples should be lifted. In making such far-reaching, generation-changing assertions, any responsible advocate would rely upon supporting evidence that is comprehensive and conclusive. Not only is this not the situation, but also there is sound evidence that children exposed to the homosexual lifestyle may be at increased risk for emotional, mental, and even physical harm.

Biology matters

Over thirty years of research confirms that children fare best when reared by their two biological parents in a loving low conflict marriage. Children navigate developmental stages more easily, are more solid in their gender identity, perform better academically, have fewer emotional disorders, and become better functioning adults when reared within their natural family.[2,3,4,5,6,7,8] This is, in part, because biology contributes to parent-child bonding.[9]

While single parenthood, adoption, and remarriage are each loving responses to failure of the natural family, children reared in these settings face unique challenges.[9,10] Single parents face greater financial challenges and time constraints. Consequently, children of single mothers often spend significantly less time with both biological parents. Children within stepfamilies can experience difficulties forging a relationship with the stepparent, and be faced with a sense of divided loyalties. Every adopted child must come to terms with a sense of rejection from her biologic parents and a longing to know her roots. While not insurmountable, these challenges can have a negative impact on a child's development. Clearly, apart from rare situations, depriving a child of one or both biologic parents, as same-sex parenting requires in every case, is unhealthy.

Children need a mother and a father

There are significant innate differences between male and female that are mediated by genes and hormones and go well beyond basic anatomy. These biochemical differences are evident in the development of male and female brain anatomy, psyche, and even learning styles.[11]Consequently, mothers and fathers parent differently and make unique contributions to the overall development of the child.[11,12,13] Psychological theory of child development has always recognized the critical role that mothers play in the healthy development of children. More recent research reveals that when fathers are absent, children suffer as well. Girls without fathers perform more poorly in school, are more likely to be sexually active and become pregnant as teenagers. Boys without fathers have higher rates of delinquency, violence, and aggression.[12,13]

Gender-linked differences in child rearing styles between parents are complementary and protective for children. Erik Erikson was among the first to note that mother-love and father-love are qualitatively different. Mothers are nurturing, expressive, and more unconditional in their love for their children. Father-love, by contrast, often comes with certain expectations of achievement.[13] Subsequent research has consistently revealed that parenting is most effective when it is both highly expressive and highly demanding. This approach to parenting "provides children with a kind of communion characterized by

inclusiveness and connectedness, as well as the drive for independence and individuality [which is] virtually impossible for a man or woman alone to combine effectively."[13]

Gender differences are also reflected in the way mothers and fathers use touch with their children. Mothers frequently soothe, calm, and comfort with touch. Fathers are more likely to use touch to stimulate or excite their children during play. Mothers tend to engage with children on their level providing opportunities for children to take charge and proceed at their own pace. As fathers engage in rough and tumble play, they take on a teaching role like that of a coach. Roughhousing between fathers and sons is associated with the development of greater self-control in adolescent boys.[13]

Gender-linked diversity is also observed in parental approaches to discipline. "The disciplinary approaches of fathers tend toward firmness, relying on rules and principles. The approach of mothers tends toward more responsiveness, involving more bargaining, more adjustment toward the child's mood and context, and is more often based on an intuitive understanding of the child's needs and emotions of the moment."[13] Consequently, being reared by a mother and a father helps sons and daughters moderate their own gender-linked inclinations. Boys generally embrace reason over emotion, rules over relationships, risk-taking over caution, and standards over compassion. Girls generally place greater emphasis on emotional ties, relationships, caution, and compassion. Over time opposite-sexed parents demonstrate to their children the value of opposing tendencies.

Research on same-sex parenting

Studies that appear to indicate neutral to favorable child outcomes from same-sex parenting have critical design flaws. These include non-longitudinal design, inadequate sample size, biased sample selection, lack of proper controls, failure to account for confounding variables, and perhaps most problematic - all claim to affirm the null hypothesis.[14,15,16] Therefore, it is impossible for these studies to provide any support for the alleged safety or potential benefits to children from same-sex parenting.

Data on the long-term outcomes of children placed in same-sex households is sparse and gives reason for concern.[17] This research has revealed that children reared in same-sex households are more likely to experience sexual confusion, engage in risky sexual experimentation, and later adopt a same-sex identity.[18,19,20,21,22] This is concerning since adolescents and young adults who adopt the homosexual lifestyle are at increased risk for mental health problems, including major depression, anxiety disorders, conduct disorders, substance dependence, and especially suicidal ideation and suicide attempts.[23] Recent studies confirm that children reared by same-sex couples fare worse in a multitude of outcome categories than those reared by heterosexual, married couples.[24-27]

Risks of the homosexual lifestyle to children

Finally, research has demonstrated considerable risks to children exposed to the homosexual lifestyle. Violence between same-sex partners is two to three times more common than among married heterosexual couples.[27-32] Same-sex partnerships are significantly more prone to dissolution than heterosexual marriages with the average same-sex relationship lasting only two to three years. [33-36] Homosexual men and women are reported to be promiscuous, with serial sex partners, even within what are loosely-termed "committed relationships."[37-41] Individuals who practice a homosexual lifestyle are more likely than heterosexuals to experience mental illness,[42-44] substance abuse,[46] suicidal tendencies[46,47] and shortened life spans.[48] Although some would claim that these dysfunctions are a result of societal pressures in America, the same dysfunctions exist at inordinately high levels among homosexuals in cultures where the practice is more widely accepted.[49]

Conclusion

In summary, tradition and science agree that biological ties and dual gender parenting are protective for children. The family environment in which children are reared plays a critical role in forming a secure gender identity, positive emotional well-being, and optimal academic achievement. Decades of social science research documents that children develop optimally when reared by their two biological parents in a low conflict marriage. The limited research advocating childrearing by same-sex parents has severe

methodological limitations.[50] There is significant risk of harm inherent in exposing a child to the homosexual lifestyle. Given the current body of evidence, the American College of Pediatricians believes it is inappropriate, potentially hazardous to children, and dangerously irresponsible to change the age-old prohibition on same-sex parenting, whether by adoption, foster care, or reproductive manipulation. This position is rooted in the best available science.

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Gender Dysphoria in Children

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ABSTRACT: Gender dysphoria (GD) of childhood describes a psychological condition in which children experience a marked incongruence between their experienced gender and the gender associated with their biological sex. When this occurs in the pre-pubertal child, GD resolves in the vast majority of patients by late adolescence. Currently there is a vigorous, albeit suppressed, debate among physicians, therapists, and academics regarding what is fast becoming the new treatment standard for GD in children. This new paradigm is rooted in the assumption that GD is innate, and involves pubertal suppression with gonadotropin releasing hormone (GnRH) agonists followed by the use of cross-sex hormones—a combination that results in the sterility of minors. A review of the current literature suggests that this protocol is founded upon an unscientific gender ideology, lacks an evidence base, and violates the long-standing ethical principle of "First do no harm."

Gender Dysphoria in Children: This Debate Concerns More than Science

Gender is a term that refers to the psychological and cultural characteristics associated with biological sex.[1] It is a psychological concept and sociological term, not a biological one. Gender identity refers to an individual's awareness of being male or female and is sometimes referred to as an individual's "experienced gender." Gender dysphoria (GD) in children describes a psychological condition in which they experience marked incongruence between their experienced gender and the gender associated with their biological sex. They often express the belief that they are the opposite sex.[2] The prevalence rates of GD among children has been estimated to be less than 1%.[3] Sex differences in rate of referrals to specialty clinics vary by age. In pre-pubertal children, the ratio of boys to girls ranges from 2:1 to 4.5:1. In adolescents, the sex ratio is close to parity; in adults, the ratio of males to females range from 1:1 to 6.1:1.[2]

The debate over how to treat children with GD is primarily an ethical dispute; one that concerns physician worldview as much as science. Medicine does not occur in a moral vacuum; every therapeutic action or inaction is the result of a moral judgment of some kind that arises from the physician's philosophical worldview.

Medicine also does not occur in a political vacuum and being on the wrong side of sexual politics can have severe consequences for individuals who hold the politically incorrect view.

As an example, Dr. Kenneth Zucker, long acknowledged as a foremost authority on gender identity issues in children, has also been a lifelong advocate for gay and transgender rights. However, much to the consternation of adult transgender activists, Zucker believes that gender-dysphoric pre-pubertal children are best served by helping them align their gender identity with their anatomic sex. This view ultimately cost him his 30-year directorship of the Child Youth and Family Gender Identity Clinic (GIC) at the Center for Addiction and Mental Health in Toronto.[4,5]

Many critics of pubertal suppression hold a modernist teleological worldview. They find it self-evident that there is a purposeful design to human nature, and that cooperation with this design leads to human flourishing. Others, however, identify as post-modernists who reject teleology. What unites the two groups is a traditional interpretation of "First do no harm." For example, there is a growing online community of gay-affirming physicians, mental health professionals, and academics with a webpage entitled "First, do no harm: youth trans critical professionals." They write:

> *We are concerned about the current trend to quickly diagnose and affirm young people as transgender, often setting them down a path toward medical transition…. We feel that unnecessary surgeries and/or hormonal treatments which have not been proven safe in the long-term represent significant risks for young people. Policies that encourage—either directly or indirectly—such medical treatment for young people who may not be able to evaluate the risks and benefits are highly suspect, in our opinion.*[6]

Advocates of the medical interventionist paradigm, in contrast, are also post-modernists but hold a subjective view of "First do no harm." Dr. Johanna Olson-Kennedy, an adolescent medicine specialist at Children's Hospital Los Angeles, and leader in pediatric gender transitioning, has stated that "[First do no harm] is really subjective. [H]istorically we come from a very paternalistic perspective… [in which] doctors are really given the purview of deciding what is going to be harmful and what isn't. And that, in the world of gender, is really problematic."[7] Not only does she claim that "First do no harm" is subjective, but she later also states that it should be left to the child decide what constitutes harm based upon their own subjective thoughts and feelings.[7] Given the cognitive and experiential immaturity of the child and adolescent, the American College of Pediatricians (ACPeds) finds this highly problematic and unethical.

Gender dysphoria as the result of an innate internal sexed identity

Professor of social work, Dr. William Brennan, has written that "[t]he power of language to color one's view of reality is profound."[8] It is for this reason that linguistic engineering always precedes social engineering — even in medicine. Many hold the mistaken belief that gender once meant biological sex. Though the terms are often used interchangeably they were never truly synonymous.[9,10] Feminists of the late 1960's and 1970's used gender to refer to a "social sex" that could differ from one's "biological sex" in order to overcome unjust discrimination against women rooted in sex stereotypes. These feminists are largely responsible for mainstreaming the use of the word gender in place of sex. More recently, in an attempt to eliminate heteronormativity, queer theorists have expanded gender into an excess of 50 categories by merging the concept of a social sex with sexual attractions.[9] However, neither usage reflects the original meaning of the term.

Prior to the 1950s, gender meant male or female, but applied only to grammar not persons.[9,10] Latin based languages categorize nouns and their modifiers as masculine or feminine and for this reason are still referred to as having a gender. This changed during the 1950s and 1960s as sexologists realized that their sex reassignment agenda could not be sufficiently defended using the words sex and transsexual. From a purely scientific standpoint, human beings possess a biologically determined sex and innate sex differences. No sexologist could actually change a person's genes through hormones and surgery. Sex change is objectively impossible. Their solution was to hijack the word gender and infuse it with a new meaning that applied to persons.

John Money, PhD was among the most prominent of these sexologists who redefined gender to mean "the social performance indicative of an internal sexed identity".[10] In essence, these sexologists invented the ideological foundation necessary to justify their treatment of transsexualism with sex reassignment surgery and called it gender. It is this man-made ideology of an innate and immutable "internal sexed identity" that now dominates mainstream medicine, psychiatry and academia. This linguistic history makes it clear that gender is not and never has been a biological or scientific entity. Rather, gender is a socially and politically constructed concept.

In their "Overview of Gender Development and Gender Nonconformity in Children and Adolescents," Forcier and Olson-Kennedy dismiss the binary model of human sexuality as "ideology" and present an "alternate perspective" of "innate gender identity" that presents along a "gender continuum." They recommend that pediatricians tell parents that a child's "real gender" is what he or she feels it to be because "a child's brain and body may not be on the same page."[11]

Forcier and Olson-Kennedy's claim of an innate discordance between a child's brain and the rest of the body derives from diffusion-weighted MRI scans that demonstrate the pubertal testosterone surge in boys increases

white matter volume, as well as from brain studies of adults who identify as transgender. A study by Rametti and colleagues found that the white matter microstructure of the brains of female-to-male (FtM) transsexual adults, who had not begun testosterone treatment, more closely resembled that of men than that of women.[12] Other diffusion-weighted MRI studies have concluded that the white matter microstructure in both FtM and male-to-female (MtF) transsexuals falls halfway between that of genetic females and males.[13] These and more recent studies, however, fail to prove causation due to several design flaws. A properly designed brain difference study needs to be prospective and longitudinal; it would require a large randomly selected population based sample of a fixed set of individuals, would follow them with serial brain imaging from infancy through adulthood, and would have to be replicated. Not one brain study to date meets a single one of these requirements to be considered rigorous research design. Even if they did, causation would not be certain due to neuroplasticity.

Neuroplasticity

Neuroplasticity is the well-established phenomenon in which thinking and behavior alters brain microstructure. There is no evidence that people are born with brain microstructures that are forever unalterable, but there is significant evidence that experience changes brain microstructure.[14] Therefore, if scientifically rigorous studies ever do identify transgender brain differences, these differences will still more likely be the result of transgender behavior rather than its cause.

More importantly, however, is the fact that the brains of all male infants are masculinized prenatally by their own endogenous testosterone, which is secreted from their testes beginning at approximately eight weeks' gestation. Female infants, of course, lack testes, and therefore, do not have their brains masculinized by endogenous testosterone.[15,16,17] For this reason, barring maternal exposure to androgens or one of the rare disorders of sex development (DSDs), boys are not born with feminized brains, and girls are not born with masculinized brains.

Genetic Determinism

Might gender identity be genetically determined? Behavior geneticists have known for decades that while genes *influence* behavior, they do not hard-wire a person to think, feel, or behave in a particular way. The science of epigenetics has established that genes are not analogous to rigid "blueprints" for behavior. Rather, humans "develop traits through the dynamic process of gene-environment interaction… [genes alone] don't determine who we are."[18] Regarding the etiology of transgenderism, twin studies of adult transsexuals prove definitively that genetic influence is far less than that of environmental factors.

Twin studies are instrumental in elucidating whether genes or environmental factors contribute more significantly to a particular trait. Since monozygotic twins are conceived with exactly the same DNA, and spontaneous mutations before birth are rare, traits that are solely determined by genes, will manifest in both identical twins close to if not exactly 100 percent of the time. Skin color is an example of a trait that identical twins share virtually 100 percent of the time because it is solely determined by genes.

The largest transsexual twin study to date examines 110 twin pairs and was published by Dr. Milton Diamond in the May 2013 issue of the International Journal of Transgenderism.[19] Table 5 documents that the number of monozygotic twin pairs concordant for transsexualism is greater than that of dizygotic twin pairs. This suggests a possible biological predisposition for gender dysphoria. The most significant data entry, however, is the low number of concordant monozygotic twin pairs. Only 21 monozygotic twin pairs out of a total of 74 monozygotic pairs, or 28 percent, were concordant for transsexualism; the remaining 72 percent of identical twins were discordant for transsexualism.

This means that environmental factors trump any biological predisposition. Environmental factors account for nearly 75 percent of what causes transsexualism in one twin and not in the other; and since identical twins develop in the same uterus, non-shared post-birth experiences are likely to have a greater influence than the prenatal environment. A high 72 percent discordance rate among identical twins proves that no one is born pre-determined to have gender dysphoria let alone pre-determined to identify as transgender or transsexual.

This is what would be expected given the dramatic rates of resolution of gender dysphoria documented among children when they are not encouraged to impersonate the opposite sex. The low concordance rate also supports the theory that persistent GD is due predominantly to the impact of non-shared environmental influences upon certain biologically vulnerable children. To be clear, twin studies alone establish that the "alternative perspective" of an "innate gender identity" trapped in the wrong body is in fact an ideological belief that has no basis in rigorous science.

A teleological binary view of human sexuality, in contrast, is compatible with biological reality. The norm for human design is to be conceived either male or female. Sex chromosome pairs "XY" and "XX" are genetic determinants of sex, male and female, respectively. They are not genetic markers of a disordered body or birth defect. Human sexuality is binary by design with the purpose being the reproduction of our species. This principle is self-evident. Barring one of the rare disorders of sex development (DSD), no infant is "assigned" a sex or a gender at birth. Sex declares itself anatomically in utero and is clearly evident and acknowledged at birth.

Disorders of sex development (DSDs), including but not limited to androgen insensitivity syndrome and congenital adrenal hyperplasia, affect less than 0.02 percent of the population.[20] These disorders are all medically identifiable deviations from the human binary sexual norm. Unlike individuals with a normal genotype and hormonal axis who identify as "transgender," those with DSDs have an innate biological condition. Sex assignment in individuals with DSDs can be complex and depends on a variety of genetic, hormonal, and physical factors. Nevertheless, the 2006 consensus statement of the Intersex Society of North America did not endorse DSD as a third sex.[21]

Post-natal Factors Predominate in the Development and Persistence of GD

Identical twin studies demonstrate that environmental factors, especially post-natal non-shared events, predominate in the development and persistence of gender dysphoria. This is not surprising since it is well accepted that a child's emotional and psychological development is impacted by positive and negative experiences from infancy forward. Family and peer relationships, one's school and neighborhood, the experience of any form of abuse, media exposure, chronic illness, war, and natural disasters are all examples of environmental factors that impact an individual's emotional, social, and psychological development. *There is no single family dynamic, social situation, adverse event, or combination thereof that has been found to destine any child to develop GD.* This fact, together with twin studies, suggests that there are many paths that may lead to GD in certain predisposed children.

The literature regarding the etiology and psychotherapeutic treatment of childhood GD is heavily based upon clinical case studies. These studies suggest that social reinforcement, parental psychopathology, family dynamics, and social contagion -facilitated by mainstream and social media, all contribute to the development and/or persistence of GD in some vulnerable children. There may be other as yet unrecognized contributing factors as well.

Most parents of children with GD recall their initial reactions to their child's cross-sex dressing and other cross-sex behaviors to have been tolerance and/or encouragement. Sometimes parental psychopathology is at the root of the social reinforcement. For example, among mothers of boys with GD who had desired daughters, a small subgroup experienced what has been termed "pathologic gender mourning." Within this subgroup the mother's desire for a daughter was acted out by the mother actively cross-dressing her son as a girl. These mothers typically suffered from severe depression that was relieved when their sons dressed and acted in a feminine manner.[22]

A large body of clinical literature documents that fathers of feminine boys report spending less time with their sons between the ages of two and five as compared with fathers of control boys. This is consistent with data that shows feminine boys feel closer to their mothers than to their fathers. In his clinical studies of boys with GD, Stoller observed that most had an overly close relationship with their mother and a distant, peripheral relationship with their father. He postulated that GD in boys was a "developmental arrest … in which an excessively close and gratifying mother-infant symbiosis, undisturbed by father's presence, prevents a boy from adequately separating himself from his mother's female body and feminine behavior."[22]

It has also been found that among children with GD, the rate of maternal psychopathology, particularly depression and bipolar disorder is "high by any standard." Additionally, a majority of the fathers of GD boys are easily threatened, exhibit difficulty with affect regulation, and possess an inner sense of inadequacy. These fathers typically deal with their conflicts by overwork or otherwise distance themselves from their families. Most often, the parents fail to support one another, and have difficulty resolving marital conflicts. This produces an intensified air of conflict and hostility. In this situation, the boy becomes increasingly unsure about his own self-value because of the mother's withdrawal or anger and the father's failure to intercede. The boy's anxiety and insecurity intensify, as does his anger, which may all result in his inability to identify with his biological sex.[23]

Systematic studies regarding girls with GD and the parent-child relationship have not been conducted. However, clinical observations suggest that the relationship between mother and daughter is most often distant and marked by conflict, which may lead the daughter to disidentify from the mother. In other cases, masculinity is praised while femininity is devalued by the parents. Furthermore, there have been cases in which girls are afraid of their fathers who may exhibit volatile anger up to and including abuse toward the mother. A girl may perceive being female as unsafe, and psychologically defend against this by feeling that she is really a boy; subconsciously believing that if she were a boy she would be safe from and loved by her father.[22]

There is evidence that psychopathology and/or developmental diversity may precipitate GD in adolescents, particularly among young women. Recent research has documented increasing numbers of adolescents who present to adolescent gender identity clinics and request sex reassignment (SR). Kaltiala-Heino and colleagues sought to describe the adolescent applicants for legal and medical sex reassignment during the first two years of an adolescent gender identity clinic in Finland, in terms of sociodemographic, psychiatric, and gender identity related factors and adolescent development. They conducted a structured quantitative retrospective chart review and qualitative analysis of case files of all adolescent SR applicants who entered the assessment by the end of 2013. They found that the number of referrals exceeded expectations in light of epidemiological knowledge.

Natal girls were markedly overrepresented among applicants. Severe psychopathology preceding the onset of GD was common. Many youth were on the autism spectrum. These findings do not fit the commonly accepted image of a gender dysphoric child. The researchers conclude that treatment guidelines need to consider GD in minors in the context of severe psychopathology and developmental difficulties.[24]

A recent study has documented an increasing trend among adolescents to self-diagnose as transgender after binges on social media sites such as Tumblr, Reddit, and YouTube.[25] This suggests that social contagion may be at play. In many schools and communities, there are entire peer groups "coming out" as trans at the same time.[25] Finally, strong consideration should be given to investigating a causal association between adverse childhood events, including sexual abuse, and transgenderism. The overlap between childhood gender discordance and an adult homosexual orientation has long been acknowledged.[26] There is also a large body of literature documenting a significantly greater prevalence of childhood adverse events and sexual abuse among homosexual adults as compared to heterosexual adults. Andrea Roberts and colleagues' published a study in 2013 that found "half to all of the elevated risk of childhood abuse among persons with same-sex sexuality compared to heterosexuals was due to the effects of abuse on sexuality."[27] It is therefore possible that some individuals develop GD and later claim a transgender identity as a result of childhood maltreatment and/or sexual abuse. This is an area in need of research.

GD as an Objective Mental Disorder

Psychology has increasingly rejected the concept of norms for mental health, focusing instead on emotional distress. The American Psychiatric Association (APA), for example, explains in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) that GD is listed therein not due to the discrepancy between the individual's thoughts and physical reality, but due to the presence of emotional distress that hampers social functioning. The DSM-5 also notes that a diagnosis is required for insurance companies to pay for cross-sex hormones and sex reassignment surgery (SRS) to alleviate the emotional distress of GD. Once the distress is relieved, GD is no longer considered a disorder.[2]

There are problems with this reasoning. Consider the following examples: a girl with anorexia nervosa has the persistent mistaken belief that she is obese; a person with body dysmorphic disorder (BDD) harbors the erroneous conviction that she is ugly; a person with body integrity identity disorder (BIID) identifies as a disabled person and feels trapped in a fully functional body. Individuals with BIID are often so distressed by their fully capable bodies that they seek surgical amputation of healthy limbs or the surgical severing of their spinal cord.[28] Dr. Anne Lawrence, who is transgender, has argued that BIID has many parallels with GD.[29] The aforementioned false beliefs, like GD, are not merely emotionally distressing for the individuals but also life-

threatening. In each case, surgery to "affirm" the false assumption (liposuction for anorexia, cosmetic surgery for BDD, amputation or surgically induced paraplegia for BIID, sex reassignment surgery for GD) may very well alleviate the patient's emotional distress, but will do nothing to address the underlying psychological problem, and may result in the patient's death. Completely removed from physical reality, the art of psychotherapy will diminish as the field of psychology increasingly devolves into a medical interventionist specialty, with devastating results for patients.

Alternatively, a minimal standard could be sought. Normality has been defined as "that which functions according to its design."[30] One of the chief functions of the brain is to perceive physical reality. Thoughts that are in accordance with physical reality are normal. Thoughts that deviate from physical reality are abnormal—as well as potentially harmful to the individual or to others. This is true whether or not the individual who possesses the abnormal thoughts feels distress. A person's belief that he is something or someone he is not is, at best, a sign of confused thinking; at worst, it is a delusion. Just because a person thinks or feels something does not make it so. This would be true even if abnormal thoughts were biologically "hardwired."

The norm for human development is for an individual's thoughts to align with physical reality; for an individual's gender identity to align with biologic sex. People who identify as "feeling like the opposite sex" or "somewhere in between" or some other category do not comprise a third sex. They remain biological men or biological women. GD is a problem that resides in the mind not in the body. Children with GD do not have a disordered body—even though they feel as if they do. Similarly, a child's distress over developing secondary sex characteristics does not mean that puberty should be treated as a disease to be halted, because puberty is not, in fact, a disease. Likewise, although many men with GD express the belief that they are a "feminine essence" trapped in a male body, this belief has no scientific basis.

Until recently, the prevailing worldview with respect to childhood GD was that it reflected abnormal thinking or confusion on the part of the child that may or may not be transient. Consequently, the standard approach was either watchful waiting or pursuit of family and individual psychotherapy.[1,2] The goals of therapy were to address familial pathology if it was present, treat any psychosocial morbidities in the child, and aid the child in aligning gender identity with biological sex.[22,23] Experts on both sides of the pubertal suppression debate agree that within this context, 80 percent to 95 percent of children with GD accepted their biological sex by late adolescence.[31] This worldview began to shift, however, as adult transgender activists increasingly promoted the "feminine essence" narrative to secure social acceptance.[10] In 2007, the same year that Boston Children's Hospital opened the nation's first pediatric gender clinic, Dr. J. Michael Bailey wrote:

> *Currently the predominant cultural understanding of male-to-female transsexualism is that all male-to-female (MtF) transsexuals are, essentially, women trapped in men's bodies. This understanding has little scientific basis, however, and is inconsistent with clinical observations. Ray Blanchard has shown that there are two distinct subtypes of MtF transsexuals. Members of one subtype, homosexual transsexuals, are best understood as a type of homosexual male. The other subtype, autogynephilic transsexuals, are (sic) motivated by the erotic desire to become women. The persistence of the predominant cultural understanding, while explicable, is damaging to science and to many transsexuals.*[32]

As the "feminine essence" view persisted, the suffering of transgender adults was invoked to argue for the urgent rescue of children from the same fate by early identification, affirmation, and pubertal suppression. It is now alleged that discrimination, violence, psychopathology, and suicide are the direct and inevitable consequences of withholding social affirmation and puberty blockers or cross-sex hormones from a gender dysphoric child.[33] Yet, the fact that 80 percent to 95 percent of gender-dysphoric youth emerge physically and psychologically intact after passing through puberty without social affirmation refutes this claim.[31] Furthermore, over 90 percent of people who die of suicide have a diagnosed mental disorder.[34] There is no evidence that gender-dysphoric children who commit suicide are any different. Therefore, the cornerstone for suicide prevention should be the same for them as for all children: early identification and treatment of psychological co-morbidities.

Nevertheless, there are now 40 gender clinics across the United States that promote the use of pubertal suppression and cross-sex hormones in children. The rationale for suppression is to allow the gender-dysphoric child time to explore gender identity free from the emotional distress triggered by the onset of secondary sex characteristics. The standards followed in these clinics are based on "expert opinion." There is not a single large, randomized, controlled study that documents the alleged benefits and potential harms to gender-dysphoric children from pubertal suppression and decades of cross-sex hormone use. Nor is there a single long-term, large, randomized, controlled study that compares the outcomes of various psychotherapeutic interventions for childhood GD with those of pubertal suppression followed by decades of toxic synthetic steroids. In today's age of "evidence-based medicine," this should give everyone pause. Of greater concern is that pubertal suppression at Tanner Stage 2 (usually 11 years of age) followed by the use of cross-sex hormones will leave these children sterile and without gonadal tissue or gametes available for cryo-preservation.[35,36,37]

Neuroscience clearly documents that the adolescent brain is cognitively immature and lacks the adult capacity needed for risk assessment prior to the early to mid-twenties.[38] There is a serious ethical problem with allowing

irreversible, life-changing procedures to be performed on minors who are too young to give valid consent themselves. This ethical requirement of informed consent is fundamental to the practice of medicine, as emphasized by the U.S. Department of Health & Human Services website: "The voluntary consent of the human subject is absolutely essential."[39] Moreover, when an individual is sterilized, even as a secondary outcome of therapy, lacking full, free, and informed consent, it is a violation of international law.[40]

Transgender-Affirming Protocol: What Is the Evidence Base?

Over the past two decades, Hayes, Inc. has grown to become an internationally recognized research and consulting firm that evaluates a wide range of medical technologies to determine the impact on patient safety, health outcomes, and resource utilization. This corporation conducted a comprehensive review and evaluation of the scientific literature regarding the treatment of GD in adults and children in 2014. It concluded that although "evidence suggests positive benefits" to the practice of using sex reassignment surgery in gender dysphoric adults, "serious limitations [inherent to the research] permit only weak conclusions."[41] Similarly, Hayes, Inc. found the practice of using cross-sex hormones for gender dysphoric adults to be based on "very low" quality of evidence:

> *Statistically significant improvements have not been consistently demonstrated by multiple studies for most outcomes. Evidence regarding quality of life 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.*[42]

Regarding treatment of children with GD using gonadotropin releasing hormone (GnRH) agonists and cross-sex hormones, Hayes, Inc. awarded its lowest rating indicating that the literature is "too sparse and the studies [that exist are] too limited to suggest conclusions."[42]

Gender Clinics Proliferate Across United States Despite Lack of Medical Evidence

In 2007 Dr. Norman Spack, a pediatric endocrinologist and founder of the nation's first gender clinic at Boston Children's Hospital, launched the pubertal suppression paradigm in the United States.[43] It consists of first affirming the child's false self-concept by instituting name and pronoun changes, and facilitating the impersonation of the opposite sex within and outside of the home. Next, puberty is suppressed via GnRH agonists as early as age 11 years, and then finally, patients may graduate to cross-sex hormones at age 16 in

preparation for sex-reassignment surgery as an older adolescent or adult.[44] Endocrine Society guidelines currently prohibit the use of cross-sex hormones before age 16 but this prohibition is being reconsidered.[45] Some gender specialists are already bypassing pubertal suppression and instead putting children as young as 11 years old directly onto cross-sex hormones.[46] The rationale is that the child will experience the pubertal development of the desired sex and thereby avoid the iatrogenic emotional distress from maintaining a pre-pubertal appearance as peers progress along their natural pubertal trajectory.

In 2014 there were 24 gender clinics clustered chiefly along the East Coast and in California; one year later there were 40 across the nation. Dr. Ximena Lopez, a pediatric endocrinologist at Children's Medical Center Dallas, and a member of that program's GENder Education and Care, Interdisciplinary Support program (Genecis) stated, "[Use of this protocol is] growing really fast. And the main reason is [that] parents are demanding it and bringing patients to the door of pediatric endocrinologists because they know this is available."[47] Notice, the *main* reason for the protocol's increased use is parent demand; not evidence-based medicine.

Risks of GnRH Agonists

The GnRH agonists used for pubertal suppression in gender dysphoric children include two that are approved for the treatment of precocious puberty: leuprolide by intramuscular injection with monthly or once every three month dosing formulations, and histrelin, a subcutaneous implant with yearly dosing.[36] In addition to preventing the development of secondary sex characteristics, GnRH agonists arrest bone growth, decrease bone accretion, prevent the sex-steroid dependent organization and maturation of the adolescent brain, and inhibit fertility by preventing the development of gonadal tissue and mature gametes for the duration of treatment. If the child discontinues the GnRH agonists, puberty will ensue.[36,44] Consequently, the Endocrine Society maintains that GnRH agonists, as well as living socially as the opposite sex, are fully reversible interventions that carry no risk of permanent harm to children.[44] However, social learning theory, neuroscience, and the single long-term follow-up study of adolescents who have received pubertal suppression described below challenge this claim.

In a follow-up study of their first 70 pre-pubertal candidates to receive puberty suppression, de Vries and colleagues documented that all subjects eventually embraced a transgender identity and requested cross-sex hormones.[48] This is cause for concern. Normally, 80 percent to 95 percent of pre-pubertal youth with GD do not persist in their GD. To have 100 percent of pre-pubertal children choose cross-sex hormones suggests that the protocol itself inevitably leads the individual to identify as transgender.

There is an obvious self-fulfilling nature to encouraging a young child with GD to socially impersonate the opposite sex and then institute pubertal suppression. Purely from a social learning point of view, the repeated behavior of impersonating and being treated as the opposite sex will make identity alignment with the child's biologic sex less likely. This, together with the suppression of puberty that prevents further endogenous masculinization or feminization of the entire body and brain, causes the child to remain either a gender non-conforming pre-pubertal boy disguised as a pre-pubertal girl, or the reverse. Since their peers develop normally into young men or young women, these children are left psychosocially isolated. They will be less able to identify as being the biological male or female they actually are. A protocol of impersonation and pubertal suppression that sets into motion a single inevitable outcome (transgender identification) that requires lifelong use of toxic synthetic hormones, resulting in infertility, is neither fully reversible nor harmless.

GnRH Agonists, Cross-sex Hormones, and Infertility

Since GnRH agonists prevent the maturation of gonadal tissue and gametes in both sexes, youth who graduate from pubertal suppression at Tanner Stage 2 to cross-sex hormones will be rendered infertile without any possibility of having genetic offspring in the future because they will lack gonadal tissue and gametes for cryo-preservation. The same outcome will occur if pre-pubertal children are placed directly upon cross-sex hormones. Older adolescents who declined pubertal suppression are advised to consider cryo-preservation of gametes prior to beginning cross-sex hormones. This will allow them to conceive genetic offspring in the future via artificial reproductive technology. While there are documented cases of transgendered adults who stopped their cross-sex hormones in order to allow their bodies to produce gametes, conceive, and have a child, there is no absolute guarantee that this is a viable option in the long term. Moreover, transgendered individuals who undergo sex reassignment surgery and have their reproductive organs removed are rendered permanently infertile.[36,37,38]

Additional Health Risks Associated with Cross-sex Hormones

Potential risks from cross-sex hormones to children with GD are based on the adult literature. Recall that regarding the adult literature, the Hayes report states: "There are potentially long-term safety risks associated with hormone therapy but none have been proven or conclusively ruled out."[42] For example, most experts agree that there is an increased risk of coronary artery disease among MtF adults when placed on oral ethinyl estradiol; therefore, alternative estrogen formulations are recommended. However, there is one study of MtF adults using alternative preparations that found a similar increased risk. Therefore, this risk is neither established nor ruled out.[49,50,51] Children who transition will require these hormones for a significantly greater length of time than their adult counterparts. Consequently, they may be more likely to experience physiologically theoretical though rarely observed morbidities in adults. With these caveats, it is most accurate

to say that oral estrogen administration to boys *may* place them at risk for experiencing: thrombosis/thromboembolism; cardiovascular disease; weight gain; hypertrigyceridemia; elevated blood pressure; decreased glucose tolerance; gallbladder disease; prolactinoma; and breast cancer.[49,50,51] Similarly, girls who receive testosterone *may* experience an elevated risk for: low HDL and elevated triglycerides; increased homocysteine levels; hepatotoxicity; polycythemia; increased risk of sleep apnea; insulin resistance; and unknown effects on breast, endometrial and ovarian tissues.[49,50,51] In addition, girls may legally obtain a mastectomy as early as 16 years of age after receiving testosterone therapy for at least one year; this surgery carries its own set of irreversible risks.[36]

The Post-Pubertal Adolescent with GD

As previously noted, 80 percent to 95 percent of pre-pubertal children with GD will experience resolution by late adolescence if not exposed to social affirmation and medical intervention. This means that 5 percent to 20 percent will persist in their GD as young adults. Currently, there is no medical or psychological test to determine which children will persist in their GD as young adults. Pre-pubertal children with GD who persist in their GD beyond puberty are more likely to also persist into adulthood. The Endocrine Society and others, including Dr. Zucker, therefore regard it reasonable to affirm children who persist in their GD beyond puberty, as well as those who present after puberty, and to proceed with cross-sex hormones at age 16 years.[44]

ACPeds disagrees for the following reasons. First, not all adolescents with GD inevitably go on to trans-identification, but cross-sex hormones inevitably result in irreversible changes for all patients. Second, adolescents are not sufficiently mature to make significant irreversible medical decisions. The adolescent brain does not achieve the capacity for full risk assessment until the early to mid-twenties. There is a serious ethical problem with allowing minors to receive life-altering medical interventions including cross-sex hormones and, in the case of natal girls, bilateral mastectomy, when they are incapable of providing informed consent for themselves.

As stated earlier, ACPeds is also concerned about an increasing trend among adolescents to self-diagnose as transgender after binges on social media sites. While many of these adolescents will seek out a therapist after self-identifying, many states have been forced by non-scientific political pressure to ban therapists from asking why an adolescent believes he or she is transgender. In these states therapists may not explore underlying mental health issues; cannot consider the symbolic nature of the gender dysphoria; and may not look at possible confounding issues such as social media use or social contagion.[6]

Impact of sex reassignment in adults as it relates to risk in children

Surveys suggest that transgender adults initially express a sense of "relief" and "satisfaction" following the use of hormones and sex reassignment surgery (SRS). In the long term, however, SRS does not result in a level of health equivalent to that of the general population.[52] For example, a 2001 study of 392 male-to-female and 123 female-to-male transgender persons found that 62 percent of the male-to-female (MtF) and 55 percent of the female-to-male (FtM) transgender persons were depressed. Nearly one third (32 percent) of each population had attempted suicide.[53] Similarly, in 2009, Kuhn and colleagues found considerably lower general health and general life satisfaction among 52 MtF and 3 FtM transsexuals fifteen years after SRS when compared with controls.[54] Finally, a thirty-year follow-up study of post-operative transgender patients from Sweden found that thirty years out from surgery, the rate of suicide among post-operative transgender adults was nearly twenty times greater than that of the general population.

To be clear, this does not prove that sex reassignment causes an increased risk of suicide or other psychological morbidities. Rather, it indicates that sex reassignment alone does not provide the individual with a level of mental health on par with the general population. The authors of the Swedish study summarized their findings as follows:

> Persons with transsexualism, after sex reassignment, have considerably higher risks for mortality, suicidal behaviour, and psychiatric morbidity than the general population. Our findings suggest that sex reassignment, though alleviating gender dysphoria, may not suffice as treatment for transsexualism, and should inspire improved psychiatric and somatic care after sex reassignment for this patient group.[52]

It is noteworthy that these mental health disparities are observed in one of the most lesbian, gay, bisexual and transgender (LGBT) affirming nations of the world. It suggests that these health differences are not due primarily to social prejudice, but rather due to underlying trauma that also induced transgender belief, and/or the adult transgender condition or lifestyle. This is also consistent with an American study published in the *Journal of LGBT Health* in 2008 that found discrimination did not account for the mental health discrepancies between LGBT-identified individuals and the heterosexual population.[55]

Absent hormonal and surgical intervention, only 5-20 percent of pre-pubertal children with GD will face a transgender adulthood which seems to predispose them to certain morbidities and an increased risk of early death. In contrast, the single study of pre-pubertal children with GD who received pubertal suppression makes clear that as many as 100 percent of these children will face a transgender adulthood. Therefore, the current transgender affirming interventions at pediatric gender clinics will statistically yield this outcome for the

remaining 80 to 95 percent of pre-pubertal children with GD who otherwise would have identified with their biological sex by adulthood.

Recommendations for research

Identical twin studies establish that post-natal environmental factors exert a significant influence over the development of GD and transgenderism. Data also reflects a greater than 80% resolution rate among pre-pubertal children with GD. Consequently, identification of the various environmental factors and pathways that trigger GD in biologically vulnerable children should be one focus of research. Particular attention should be given to the impact of childhood adverse events and social contagion. Another area of much needed research is within psychotherapy. Large long term longitudinal studies in which children with GD and their families are randomized to treatment with various therapeutic modalities and assessed across multiple measures of physical and social emotional health are desperately needed and should have been launched long ago. In addition, long term follow-up studies that assess objective measures of physical and mental health of post-surgical transsexual adults must include a matched control group consisting of transgender individuals who do not undergo SRS. This is the only way to test the hypothesis that SRS itself may cause more harm to individuals than they otherwise would experience with psychotherapy alone.

Conclusion

Gender dysphoria (GD) in children is a term used to describe a psychological condition in which a child experiences marked incongruence between his or her experienced gender and the gender associated with the child's biological sex. Twin studies demonstrate that GD is not an innate trait. Moreover, barring pre-pubertal affirmation and hormone intervention for GD, 80 percent to 95 percent of children with GD will accept the reality of their biological sex by late adolescence.

The treatment of GD in childhood with hormones effectively amounts to mass experimentation on, and sterilization of, youth who are cognitively incapable of providing informed consent. There is a serious ethical problem with allowing irreversible, life-changing procedures to be performed on minors who are too young to give valid consent themselves; adolescents cannot understand the magnitude of such decisions.

Ethics alone demands an end to the use of pubertal suppression with GnRH agonists, cross-sex hormones, and sex reassignment surgeries in children and adolescents. The American College of Pediatricians recommends an immediate cessation of these interventions, as well as an end to promoting gender ideology via school curricula and legislative policies. Healthcare, school curricula and legislation must remain anchored to physical reality. Scientific research should focus upon better understanding the psychological underpinnings of this disorder,

optimal family and individual therapies, as well as delineating the differences among children who resolve with watchful waiting versus those who resolve with therapy and those who persist despite therapy.

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The American College of Pediatricians is a national medical association of licensed physicians and healthcare professionals who specialize in the care of infants, children, and adolescents. The mission of ACPeds is to enable all children to reach their optimal, physical and emotional health and well-being.

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AAP Voices Blog

Why We Stand Up for Transgender Children and Teens

Moira Szilagyi, MD, PhD, FAAP

August 10, 2022

As I reflect on the recent AAP Leadership Conference, where pediatricians from across the country gathered in person for the first time in three years, I feel a tremendous sense of pride. Pediatricians are guided by our values. We believe in the inherent worth of all children.... that

each and every one deserves optimal health and the highest quality care. We stand on science and keep children front and center. While we know everyone cares about children, especially their own children, the AAP cares about all children, each and every one. This includes children and youth who are transgender.

During the conference, pediatricians spoke up in support of a resolution on the need to expand education and training on gender-affirming care, and I was reminded of a patient encounter from when I was a freshly minted pediatrician.

I was seeing a 16-year-old girl, dressed in black from head to toe, who came in for a well visit. She was in foster care, the landing place for so many LGBTQ+ youth rejected by their biological families, especially when I was first starting my career. She was pretty noncommunicative. At the end of the visit, she said: "If you knew me, you would hate me."

A couple of additional visits followed over the course of several weeks, and she eventually disclosed that she was a lesbian. It was an opportunity for me to reassure her that I admired her, supported her and certainly did not hate her. Her mood changed instantly, and she opened up to me about the struggles she had endured and would face moving forward in a world that would not always be accepting.

The emotional and psychological trauma of rejection, whether by family, friends, society, or lawmakers, can leave scars that never heal. When we fail to accept people for who they are, we pass painful judgements on them and create so much unnecessary emotional and psychological pain.

The emotional and psychological trauma of rejection, whether by family, friends, society, or lawmakers, can leave scars that never heal. When we fail to accept people for who they are, we pass painful judgements on them and create so much unnecessary emotional and psychological pain.

I cannot tell you how many similar conversations I have had over the years with young LGBTQ+ patients. They are all, just like any teen, trying to find their way in life. Our duty to them as doctors is to support them on that journey--to help them become the best person they can be. This is the approach our gender-affirming care policy is grounded in.

There is strong consensus among the most prominent medical organizations worldwide that evidence-based, gender-affirming care for transgender children and adolescents is medically necessary and appropriate. It can even be lifesaving. The decision of whether and when to start gender-affirming treatment, which does not necessarily lead to hormone therapy or surgery, is personal and involves careful consideration by each patient and their family.

At this year's Leadership Conference, there was a second resolution on transgender youth, offered by five pediatricians who disagree with the Academy's approach to gender-affirming care. These pediatricians were unable to recruit a sponsor, which meant no one was willing to support their proposal. During our meeting, this resolution did not advance because it did not receive a second vote on the floor. Much like other formal democratic processes, the AAP Leadership Conference follows a set of standard parliamentary procedures to structure our discussions.

The conference serves to connect AAP state chapters, our national committees, councils and sections and the AAP Board of Directors, which is the policy-making body of the Academy. Part of this meeting involves debate and voting on resolutions, when AAP members have the opportunity to provide input on the Academy's efforts to address important child health issues. Other topics at the Leadership Conference ranged from expanding children's health insurance to reducing child poverty. The resolution process is important, because it keeps AAP leaders apprised of the issues and concerns of our members across the country.

However, we don't need a formal resolution to look at the evidence around the care of transgender young people. Evaluating the evidence behind our recommendations, which the unsponsored resolution called for, is a routine part of the Academy's policy-writing process. Critics of our gender-affirming care policy mischaracterize it as pushing medical or surgical treatments on youth; in fact, the policy calls for the opposite: a holistic, collaborative, compassionate approach to care with no end goal or agenda. The AAP Section on LGBTQ Health and Wellness, as well as other groups within AAP's membership, are engaged in numerous conversations about transgender care and we expect those discussions to continue. It is an important conversation, and one the AAP is eager to lead.

Gender-affirming care is a top issue of concern for pediatricians, and in fact, one of the top ten resolutions receiving the most support at the meeting was the one on expanding education and training for pediatricians on gender-affirming care. I was heartened to see this resolution pass with such broad support.

Yet outside of our organization, there is a dangerous movement taking place, led by extremists, targeting youth who are receiving gender-affirming care, and vilifying the

pediatricians providing their care. The result has been rampant disinformation about what this care is and real threats of violence against some of our members.

In some states, efforts are underway to restrict access to gender-affirming care and criminalize the pediatricians who provide it. This has already had a chilling effect on access to care in these communities, and other efforts across the country are focused on doing the same. The people who suffer the most from this discrimination are of course the children and teens just trying to live their lives as their true selves. Pediatricians will not stay silent as these lies are waged against our patients and our peers.

I am proud to lead the American Academy of Pediatrics, proud to stand alongside pediatricians providing gender-affirming care, and proud to support all children.

The views expressed in this article are those of the author, and not necessarily those of the American Academy of Pediatrics.

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AAP News™

AAP continues to support care of transgender youths as more states push restrictions

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Alyson Sulaski Wyckoff, Associate Editor

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Topics: Adolescent Health/Medicine, Diversity, equity and inclusion, Legislation, Psychosocial Issues

As a record number of state bills targeting the rights of transgender youths were introduced in 2021, the AAP and other medical groups have stepped up efforts to protect them.

States introduced legislation to ban transgender youths from participating on athletic teams according to their gender identity, restrict access to school restrooms that align with students' gender identity and prohibit health care professionals from providing or referring patients for gender-affirming care. Bills also seek to ban changes to birth certificates and uphold the right of religious refusal — allowing providers to refuse care based on claims of religious or moral beliefs.

The AAP has partnered with chapters and other entities to file amicus briefs in support of legal challenges brought by the American Civil Liberties Union (ACLU) in several states. AAP members and leaders also have been reaching out to state lawmakers to express concerns about harmful legislation.

"It is critically important for every child to have access to quality, comprehensive and evidence-based care — transgender and gender-diverse youth are no exception," said AAP Immediate Past President Lee Savio Beers, M.D., FAAP. "As pediatricians, we will continue to speak up and advocate for our patients. We also want transgender and gender-diverse youth to know that not only do we care for them, we care about them, we value them and we will do all we can to ensure they have access to the care they need and deserve."

Here is a look at state legislation on gender-affirming care bans and sports participation bans in 2021.

Gender-affirming care

Last April, Arkansas became the first state to pass a bill banning gender-affirming care for transgender youths and prohibiting health care providers from referring them for gender-affirming care. The law also prohibits public funding for such services and the state Medicaid program from covering it for those under age 18 years; private insurers could refuse to cover gender-affirming care for any youth.

The state legislature overrode the governor's veto of this bill.

Pl. Trial Ex. 115

EXHIBIT 3

In May, the ACLU filed suit challenging the law, followed by a request for a preliminary injunction. The AAP's amicus brief with 18 medical, mental health and educational organizations supported the injunction request. After a federal judge granted the injunction on July 21 halting implementation of the law, the state appealed.

The AAP and partners plan to submit a second amicus brief later this month.

Legislation in several states is being carried over to 2022 legislative sessions, and new bills have been filed in additional states.

In Texas, the governor requested and received a determination from the commissioner of its Department of Family and Protective Services that gender-affirming surgery for youth constitutes child abuse and neglect.

The AAP's 2018 policy statement *Ensuring Comprehensive Care and Support for Transgender and Gender-Diverse Children and Adolescents* defines gender affirmation as developmentally appropriate, nonjudgmental, supportive care provided in a safe clinical space.

The policy states that pediatric providers, often the first medical professionals to discover a child's gender identity concerns, have a special role in caring for these patients who have a high risk of depression, anxiety and suicide.

The care model is not one-size-fits-all, said Brittany Allen, M.D., FAAP, a member of the AAP Section on LGBTQ Executive Committee. It recognizes the wide spectrum of normal, healthy gender identities.

"As I often tell families, gender-affirming care is creating space for children to be able to tell us their gender story, rather than filling in the end of the story for them. In that journey, gender-affirming care may draw on evidence-based medical tools — such as puberty blockers or hormone therapy — at developmentally appropriate ages. These tools have been shown to help reduce gender dysphoria and improve mental health for many transgender, nonbinary and gender-diverse youth.

"In my care of more than 200 transgender youth, I've seen the incredible relief and affirmation that these tools can provide," said Dr. Allen, associate professor of pediatrics at University of Wisconsin School of Medicine and Public Health and co-director of a transgender clinic at American Family Children's Hospital.

In 2021, a pediatrician submitted a resolution as part of the annual AAP Leadership Conference titled "Addressing Alternatives to the Use of Hormone Therapies for Gender Dysphoric Youth." It was not endorsed by any chapter, committee, council, section or district.

While any member can submit a resolution and any member can comment on submitted resolutions, only 57 out of the AAP's 67,000 members commented in support of the resolution. Ultimately, the resolution was soundly defeated by the voting members at the AAP Leadership Conference.

Unfortunately, some reports inaccurately reported this as reflecting "80% of the AAP membership," and this figure is cited by proponents of the Arkansas law and similar efforts to ban gender-affirming care.

Debbie Greenhouse, M.D., FAAP, oversaw the resolution process as chair of the Chapter Forum Management Committee. She said that after discussion, the resolution "was overwhelmingly voted down in a clear statement that the majority of AAP leaders and experts believe that gender-affirming care is evidence-based, medically necessary care."

Sports participation bans

Eight states enacted legislation to prohibit transgender youths from participating on athletic teams according to their gender identity in 2021. Laws in Alabama, Tennessee and Texas apply only to interscholastic athletics, while those in Arkansas, Florida, Mississippi, Montana and West Virginia apply to both interscholastic and collegiate athletics.

In South Dakota, the governor issued executive orders prohibiting transgender youths from participating on athletic teams according to their gender identity at the interscholastic level and recommending that only cisgender females play on female athletic teams at the collegiate level.

Idaho enacted a law in 2020 that banned transgender girls from playing on girls' and women's sports teams. The law has been on hold since the ACLU filed a legal challenge, which the AAP and other groups supported in an amicus brief.

The ACLU challenged a sports participation restriction law in West Virginia and a preliminary injunction was granted.

Laws also are being challenged in Florida, Montana and Tennessee.

In addition, pending legislation is being carried over in several states while new legislation has been introduced in other states.

Medical groups collaborate

In a March 2021 news release, Dr. Beers spoke out about how these bills threaten the health and well-being of transgender patients and interfere in the physician-patient-family relationship. She said the bills are dangerous, could leave transgender teens in certain areas without health care and criminalize pediatricians who try to care for them.

A joint statement in April 2021 from six major medical associations including the AAP noted the following: "Our organizations are strongly opposed to any legislation or regulation that would interfere with the provision of evidence-based patient care for any patient, affirming our commitment to patient safety."

The patchwork nature of current laws protecting LGBTQ people leaves many youths subject to uncertainty and potential discrimination that impacts their safety, their families and their day-to-day lives, according to experts.

To address this, the Equality Act would provide explicit, permanent protections for LGBTQ people under the nation's existing civil rights laws with regard to housing, education, federally funded programs and more. Such protections will help to protect LGBTQ youth from discrimination that threatens their health and well-being. The legislation passed the House of Representatives in spring 2021 and is currently awaiting a vote in the U.S. Senate.

The AAP led a sign-on letter of 140 organizations in support of the Equality Act and submitted testimony for the record supporting the legislation.

Ad Hoc Committee on Homosexuality and Scientific Research | Tuesday, 22 May 2007

Facts, not flattery, about same-sex attraction

Blithe assertions about the gay lifestyle are seldom backed up by scientific studies -- and when they are, the studies are weak.

Who helps you: someone who fails to tell you the truth or someone who does tell you the truth? The former may make you feel better; they may soothe and flatter, but the truth is more loving. It will help you live a healthier, happier and more fulfilled life.

Defenders and promoters of homosexuality try to cover up the scientifically documented serious promiscuity, inability to maintain sexual fidelity, partner abuse and psychological and medical illnesses associated with the lifestyle. Also, they tell persons with same-sex attractions (SSA) that "It's genetic," "You were born that way," or worse "God made you gay."

If homosexuality were genetically predetermined, then identical twins would virtually always have the same sexual orientation. Francis S. Collins, MD, PhD, the Director of National Human Genome Research Institute, NIH, has stated that the likelihood that the identical twin of a homosexual male will also be homosexual is about 20 per cent, indicating that whatever genes are involved represent predispositions, not predeterminations.(1) One major study's analysis of data from the Australian twins registry found that if one male identical twin had SSA there was only an 11 per cent chance that the other would too.(2)

> Numerous studies have found that same-sex attraction is not a stable condition. The majority of those who experience SSA during adolescence find the problem has disappeared by the time they reach 25 without any intervention.

Persons with SSA are told that there is no hope of change and that trying to change will make them worse. Numerous studies have found that SSA is not a stable condition. The majority of those who experience SSA during adolescence find the problem has disappeared by the time they reach 25 without any intervention.(3) Those who seek therapy or spiritual counseling can achieve various levels of freedom from SSA.

Research has documented the benefits of therapy.(4) In fact, a study specifically designed to document the damage done by therapy directed at resolving SSA found that a number of subjects reported being helped by the therapy.(5)

Adolescents with SSA are told that "coming out" will solve their problems. In fact, it puts them at risk. In spite of intensive AIDS education, young men of any age who have sex with men are at extremely high risk for infection with STDs, including HIV/AIDS, involvement with alcohol and drugs, in particular crystal meth, and depression.(6) Condom education with this population has been a failure. While condoms properly used provide some protection against certain STDs, research shows that those most at risk do not use condoms with every sexual contact. The combination of drugs and high risk sex has reignited an STD/HIV epidemic among men having sex with men (MSM).(7)

While homosexuality is claimed to be a normal variant of human sexuality and that persons with SSA are as psychologically healthy as the rest of the population, research refutes this generalization. Four recent, well-designed studies have found that persons with SSA have significantly higher rates of psychological disorders, substance abuse problems, and suicidal ideation than the general public.(8)

Gay activists insist that all these problems are caused by society's negative attitudes, but the problems are just as prevalent in extremely tolerant countries, such as the Netherlands and New Zealand.(9) Thus it should be no surprise that when we live in accordance with our designed natures, we are happier and healthier. Blaming society for the myriad difficulties faced by persons with SSA prevents self-knowledge and healing.

Research shows that gender identity disorder in childhood puts a child on the path to SSA, but defenders and promoters of homosexuality oppose treatment of these children, even though that intervention can eliminate childhood isolation, anxiety, and depression.(10)

Public school teachers in many areas of the country are teaching children that homosexual behaviors are genetically determined and are as healthy as heterosexual and marital relationships. While advocating the homosexual lifestyle, these teachers fail to provide the scientific truths, and school administrators/counselors not only fail to correct these inaccuracies, but also fail to provide factual information to the students about the numerous psychological and medical dangers in the lifestyle. Recently, high school students have been disciplined by school administrators for refusing to attend/support homosexual promoting events, such as a day of silence, while at the same time being refused permission to conduct heterosexual support events. (11)

Promoters of "gay marriage" claim that same-sex relationships are just like marriages and therefore deserve all the benefits of marriage, but research shows -- and activists admit -- that it is unrealistic to expect male couples to be faithful.(12)

Homosexual marriage promoters also tell judges or legislators that research proves there are no differences between children raised by same-sex couples and those raised by their biological married mother and father. The studies they reference are, virtually without exception, internally and externally invalid.(13) In many cases the authors have misreported their own findings. Given the extensive literature on the damage done to children through father or mother absence, it is deceitful to suggest that purposely and premeditatedly depriving a child of a mother or a father will not have consequences for that child.(14)

Gay activists have references to support their other claims, but those who read this material find that the majority of their "research" suffers from serious methodological errors, and the rest actually contradict the gay activists' claims.(15) If SSA were healthy and normal, defenders and promoters of homosexuality wouldn't have to distort the truth.

While truth can stand on its own, distortions must be protected with further distortions. Homosexual activists make false accusations of "hate" and distort religious teachings. They ignore the truth about anger and "hate". For example published research demonstrates a high prevalence of partner abuse in homosexual relationships (16), but instead of addressing this serious problem, activists are attempting to use hate crimes legislation to harass and punish those who challenge the ethics of their behavior, sexual and otherwise.

Who really helps people with SSA, children and families: those who speak the truth to them or those who attempt to distort the truth?

Signatories

Dean Byrd, PhD
President elect of the National Association for Research & Therapy of Homosexuality (NARTH)

Michelle A. Cretella, MD
Board of Directors, American College of Pediatricians

Joseph Nicolosi, PhD
President of NARTH

Richard Fitzgibbons, MD
Scientific Advisory Committee, NARTH

Dale O'Leary, author of *The Gender Agenda,* co-author of *Homosexuality and Hope* and a soon to be published book on marriage.

George A. Rekers, PhD
Distinguished Professor of Neuropsychiatry & Behavioral Science Emeritus
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Robert Saxer, MD
President, Catholic Medical Association

Philip M. Sutton, PhD
Scientific Advisory Committee, NARTH

Gerard van den Aardweg, PhD Netherlands
Scientific Advisory Committee, NARTH.

Joseph Zanga, MD, FAAP, FCP
Past President, American College of Pediatricians

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Comments to **Facts, not flattery, about same-sex attraction** have been closed. Thanks to everyone who contributed to the discussion.

Moderator said... United States | Wed, 1 Aug 2007 at 5:46 pm

Hi All,
Thankyou for your contribution. Comments to this article have now closed.

Please continue to read and comment on MercatorNet as we dish up more hot-button issues.

Kind Regards,
Moderator :-)

Granny said... -- | Tue, 31 Jul 2007 at 9:30 am

I just read on http://www.lifesite.com that a Gay Pride Parade organizer contacted a young boy on the internet.. for sex.
His mother contacted the police and a sting was set up. The person who e-mailed the police, thinking they were this young boy...sent naked photos of himself..and a rendezvous was set up. He of course was arrested ... His explanation from what I remember, please check it out yourself...was that he is Native American..and they have FIVE GENDERS...male/male
male/female, female/female, female/male and the fifth gender can be anything or go with any gender...He said that all people have these five genders...but that Christianity is the only belief system that is intolerant to their five genders

Sadly, our bodies don't recognize his belief system. Just as a transplant patient tries to get a donor that is a close relative.. or a close match.. in order to avoid "rejection"
so also our bodies reject the unhygienic practices that are used by homosexuals and heterosexuals.

Melody said... United States | Tue, 31 Jul 2007 at 6:49 am

Why would homosexuals WANT to acquire a disease that drastically shortens their life span? Does that make sense to you? It doesn't to me. I do not believe such groups exist and think you are misinformed, or that the truth has been distorted somehow. It's rather amusing how often that tends to happen, isn't it? My question is this... why is this society supposed to be growing tolerance for homosexuals yet completely tolerant towards heterosexuals? You are a person and I am a person. We are made of the same basic body structure. I do not understand why hate crimes must be committed against any group of people. And remember, the minority is the majority. I just wish enough peoples of minority would draw upon this knowledge and strength.

Marty said... -- | Mon, 30 Jul 2007 at 10:24 am

Melody said:

"you refuse to admit the TRUTH which science has proved- homosexuality CAN be genetic."

Okay—then show me the test. Tell me where I can have an anonymous tissue sample tested for whether it comes from a gay, straight, or bi-sexual person. Hint: there IS NO TEST—there is NO PROOF.

"At what age did you discover your sexual preference?"

Actually, I was 21 when I made up my mind for good.

"The same goes for homo- & bisexuals as well as transgendered people. "

If you say so...

Granny said... -- | Mon, 30 Jul 2007 at 1:59 am

There is no ONE approach to getting the Truth out... Sadly, there are homosexuals who WANT to have AIDS.... They have parties for those who want to become H.I.V Pos. so this madness is suicidal... Again, suicide is not the big taboo that it used to be. People beg for assisted suicide. Logic is only useful if people are logical.

Melody said... United States | Sun, 29 Jul 2007 at 9:56 pm

This article truly horrified me. You, the authors, are a group of misinformed individuals. You speak of distorted and actual truths, yet like all Bible-pushing monsters, you refuse to admit the TRUTH which science has proved- homosexuality CAN be genetic. You seem horrified at the "blasphemous" statement of "God made me gay." I ask you, the authors and the supporters this: if God chose to "make" you heterosexual, why wouldn't He choose to "make" other people gay? Why did God choose to bless your family genetics with health & someone else's with disease? Preaching God through supposed "scientific" articles is oxymoronic and impossible- it is impossible to prove or deny the existence of a God. In addition, indulging in sexual intercourse is dangerous & risky for all parties involved whether it is man with man, man with woman, or woman with woman. Proper protection must be put in place in order to decrease the risk of attaining any STD. Although some countries may be more tolerant of homosexuality, that does not mean that the people living in that country are. Here in America, we believe in freedom and liberty & a number of other virtues- but how many of us citizens actually demonstrate and execute these virtues?
By saying it is unrealistic to expect males to remain faithful, are you encouraging women to marry other women? Or for men to not marry at all? Are you implying that the idea of marriage is ridiculous, because statistics show men cheat? Women cheat just as much, if not more, than men do. Your statement is confusing and misleading.
You speak of Same-Sex Attraction (SSA) (Homosexuality) as if it were some disease.
"gender identity disorder in childhood puts a child on the path to SSA"
At what age did you discover your sexual preference? The same goes for homo- & bisexuals as well as transgendered people.

Rich said... United Kingdom | Sun, 29 Jul 2007 at 12:29 am

Whether homosexuality is morally right or wrong isnt important here. Society is teaching our children that it is safe and acceptable to live homosexual lifestyles. Homosexuality IS NOT safe. Many pro-gays nowadays class the "gay-aids" issue as simply being homophobic and not true. However due to the nature of gay sex (anal or fellatio) AIDS risk is ten times higher than that of vaginal sex (due to higher white blood cells in the anus). Using a condom is not enough. Also a recent study of tens of thousands of deaths showed that gay life expectancy was up to 25 years shorter than that of a heterosexual. Its about time the truth was made known. If people choose not to live as a homosexual, in order to stay healthy then they should be supported, not uncategorized as being in "denial" or having internalised homophobia". They are making a very rational decision.

Granny said... -- | Thu, 26 Jul 2007 at 1:23 am

The mother's role is very important.. She nurtures in and out of the womb. Her "nest" is her home. She is the one who bonds with the child in the beginning...and then helps the boy to separate and bond with his father and hopefully in adulthood the young man is bonded with both parents as a unit

Little girls seem to want to bond with their fathers early on, apart from breastfeeding... even infant girls seem to take to Daddy in a special way. A girl instinctively knows how to be a mommy, play house etc. but she needs her mother as a role model in how to be treated by men, just as she needs her daddy to show her how men treat women.

I agree that Religion has played a big role in the confusion that is out there, myself included. However, it is people who twist the teachings according to their culture or the environment they are living in. So mixed messages passed on to other generations, makes for a big hodge podge of opinions. If we believe there is ONE GOD...and that God created everything and we can see that there is ORDER in creation, yet we are unlike the rest of creation in that we can operate on choices, not just instincts etc. then it must be that we are the ones that make wrong choices...not God who created us.

I do believe that God understands all the things we don't know that contribute to SSA therefore we must not play God
That doesn't mean we can't see that it is a disorder and so we must try to work towards order if we want to be the best we can be.

Matt said... United States | Wed, 25 Jul 2007 at 6:35 pm

Granny, you make a sweeping generalization in saying that all homosexual relationships have a "man" and a "woman". By your logic, there are relationships like that that exist but it also shows how narrow you view gender roles. If a boy needs a man to show him how to be a "man", then where does the mother come in? Do women have no place in a boy's life other than to cook for him? A majority of my friends have come from divorced homes or from single mothers and 100% of them are heterosexual. I also know a few homosexual couples and they don't impose any imaginary gender roles onto their relationship. In my opinion, it is gender roles (usually created by religious doctrine) that creates so much inequality towards women.

Kenneth Simmons said... Canada | Wed, 25 Jul 2007 at 2:38 pm

Suzie Q, never mind what I THINK; what my God SAID about sexual immorality (including bestiality, incest, adultery and homosexual practice) can be paraphrased simply as "I hate it when people behave like that!" (Leviticus 18:22, 20:13)

Being Asian or black is not a matter of choice. Engaging in homosexual acts is a matter of personal choice. The whole "Love Thy Neighbour" thing demands that I deliver the message of forgiveness through faith and repentance.

Granny said... -- | Wed, 25 Jul 2007 at 12:58 pm

"Love Thy Neighbor... as thyself"... How do we know we love ourselves... Love begets love... love and life go together.
To love is to help yourself be the best you can be, were made to be. Men were made to be fathers, Women were made to be mothers. All men are called to Fatherhood and all women are called to Motherhood. That means that using the means for procreation, while blocking the action is not love. How can you communicate to someone if you muffle your voice or put your fingers in your ears. Every part of everyone should be used as it was designed to be used... "I lay before you Life and Death...choose you therefore LIFE"... Our bodies were designed for LIFE!!!! Adoption is wonderful..but you still need to use your fertility to have children, unless nature or accident has rendered it sterile.. not man made deliberate sterility... that is stealing from God. Those who choose not to use their fertility should refrain from using their bodies in such a way that would tell a lie to themselves or others. So yes we must love our neighbors as ourselves...in honesty and in truth we must be all that we can be.

Susie Q said... United States | Wed, 25 Jul 2007 at 5:57 am

People who support this are sick.
Next thing you know you're going to provide therapy to help people not be Asian or black.
Do you think your God will hate people for being gay or we hill He or She condemn you for being so hateful.
I guess the whole " Love Thy Neighbor" thing went above your heads.

Kenneth Simmons said... -- | Mon, 25 Jun 2007 at 9:27 pm

My apologies, Marty ... yes, it was Mark's comment I was addressing.

Marty said... -- | Sun, 24 Jun 2007 at 11:35 pm

Kenneth, that quote was from Mark on June 13—not me.

I agree with you 100%.

Granny said... United States | Sun, 24 Jun 2007 at 1:56 pm

I just read somewhere, that the root of homosexuality is narcissism. It seems that the individual is so "into themself" that they want to make love to their "mirror image".... It is something to think about...and if it holds any truth...what would the solution be?

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Pediatricians' Groups Differ On Attitudes Toward Homosexual Parenting

A new group is formed to counterbalance the AAP's social activism.

By Roy Waller and Linda Nicolosi

Joseph Zanga, M.D.

In February 2003, the American Academy of Pediatrics (AAP) issued a policy statement declaring its support for homosexual parenting. The statement urges the states to extend the status of legal parent to same-sex partners, as well as marriage-equivalent status to homosexual and lesbian couples.

However, a new group--the American College of Pediatrics, a Tennessee-based alternative organization headed by Dr. Joseph Zanga--has just responded by requesting that its fellow organization reverse its stand.

Zanga's group was formed by 100 dissenting members of the AAP. His organization disagrees with the AAP's point of view on gay parenting, as well as numerous other social issues.

In a recent interview with NARTH, Dr. Zanga said that the policy statement did not have the support of the AAP membership as a whole. In fact, the position paper--entitled "Co-Parent or Second Parent Adoption by Same-Sex Parents" -- was released to the public despite the objections of one-third of the committee which drafted it, he noted.

Zanga is still an active member of the larger AAP. In fact, he chairs its Bioethics Committee, which, he says, objected to the release of the position paper, citing what it felt were numerous flaws in the research and its foundation in "very weak science."

Because there was considerable opposition within AAP membership ranks to the pro-homosexual stance of the policy, Zanga says, the AAP commissioned a "technical report" to investigate its decision, authored by Boston pediatrician Ellen Perrin.

In that report, Perrin herself questioned the reliability of the studies used by her organization to measure the effects of same-sex couples raising either biological or adopted children, saying "The small and non-representative sample [of children raised by same-sex couples] studied,"

she said, "and the relatively young age of most of the children, suggest some reserve [concerning the policy statement]."

Although most ACP members retain their membership in the larger pediatrics group, Dr. Zanga said he and his fellow ACP members "do not want the media, the government, or the public to think that all pediatricians agree with the AAP's policies on controversial issues."

"We are essentially a Judeo-Christian, traditional-values organization," he noted, "open to membership for pediatric medical professionals of all religions who hold to our core beliefs." Those beliefs, he said, are that "life begins at conception, and that the traditional family unit, headed by an opposite-sex couple, poses far fewer risk factors in the adoption and raising of children."

The chief purpose of his organization, Zanga commented, is to see to it that children and adolescents receive optimal healthcare, with children's needs coming first, taking precedence over the political aims of socio-political activists.

Zanga's group defends its support for the traditional family unit, citing the Carnegie Report of the early 1990s, which found increased risks for children raised in alternative family situations. They also endorse recommendations by the Centers for Disease Control to incorporate HIV testing into standard prenatal care. (In 2001, an estimated 175 newborns contracted HIV from their mothers).

Future activities on his group's agenda include sponsorship of research, writing opinion pieces for the media, and providing scientific information to physicians and other medical professionals. The group hopes to contact state and national political leaders, to increase their current 100-physician membership, and to develop a professional journal.

(An article on this new organization may be read at - www.cultureandfamily.org/articledisplay asp?id=4053&department;=CFI&categoryid;=cfreport)

Updated: 17 July 2003

Candidates Who Support the Best for Children

Elect Candidates Who Support the Best for Children

American College of Pediatricians – October 2018

The American College of Pediatricians (ACPeds) is concerned that political candidates often ignore the health and well-being of children. While it is not unusual for politicians to "kiss babies" during the campaign and then "kiss them off" after the election, it is worrisome when some 'kiss them off' even before their election.

In 1973, the US Supreme Court invented a "right" to unrestricted abortion from an implied right to privacy that ignored the more fundamental one – the right to life – which is the first right enumerated in the Declaration of Independence. Since then, millions of unborn children have been killed. Candidates on both national and state levels have far different responses to abortion, from no restrictions, taxpayer financing, and no protection for children born alive after a failed abortion attempt on one hand, to urging the protection of all innocent human life from conception on the other. Any politician who does not value the life of our smallest and most vulnerable children cannot be expected to support what is best for all children.

A more recent threat to children is the insistence that the rights of transgender – identified adults should supersede the rights of all others. This is especially true with candidate support for children deciding their perceived gender and then subjecting themselves to treatments both emotionally and physically harmful; treatments including what amounts to chemical castration that can render them permanently sterile. There is no rigorous science to suggest that a child's failure to identify with his or her biological sex requires anything more than patience, and, in some cases, counseling. Over 80% of pre-pubertal children distressed by their biological sex will cease to feel this way by late adolescence or early adulthood. To encourage, or worse, to begin a sex change during childhood, is blatant child abuse as the ACPeds has noted and does not take into account the ongoing developmental changes occurring in the brain of the adolescent and young adult.[1]

In addition, when candidates refuse to acknowledge the decades of social science that has established the natural family as the optimal setting in which to nurture children, their misguided decisions harm the emotional and physical health of all children. When the institution of the natural family is respected, and the marriage of biological parents is advocated and protected, children thrive, and rates of adult illness and disability decline. More healthy marriages will save the U.S. economy hundreds of billions of dollars annually. Our society once

insisted that divorce and single parenting were harmless to children. The Carnegie Report,[2] late in the last century, put those claims to rest noting that children in these circumstances were proven to be at risk. We should not repeat our prior mistakes in our zeal for "political correctness." These are our children, the future of our nation, not test cases in unregulated social experimentation.

Government spending of money we do not have burdens our children and future generations with debt. Candidates should promote fiscal responsibility to assure a healthy tomorrow for our children. In addition, candidates should respect our Constitution and Bill of Rights, and commit to appointing judges who will do likewise.

Though the focus of the nation is on the Congress, elections for state legislatures, city and county councils, and school boards are also critical to the welfare of children. In today's society, these are important not only for the general education of our children, but also for preserving their right to privacy and modesty through safe locker rooms and bathrooms.

The ACPeds also strongly encourages candidates to support sexual risk avoidance programs rather than sexual risk reduction programs. Risk avoidance programs provide health education that encourages adolescents to avoid any and all behaviors that might cause physical, emotional, or financial harm. Risk reduction programs, however, attempt only to decrease risk rather than eliminate it – such as the promotion of condoms to decrease pregnancy and sexually transmitted disease. This is the equivalent of an anti-tobacco education program promoting the use of filtered low tar cigarettes rather than avoiding tobacco products.

Providing the best for children is embodied in medicine's ancient principle of "First do no harm," which is inextricably linked to moral conscience. Medical and scientific debate is not immune to political influences. For this reason and others, freedom of conscience is an integral and necessary component of quality medical care. Yet, freedom of conscience is increasingly under attack today. In some states healthcare professionals, including pharmacists, cannot refuse to do harm because of laws that disregard the First Amendment's guarantee of Freedom of Religion and Conscience. No healthcare professional should be forced to perform a procedure, prescribe or dispense a medication, or refer for a procedure that violates his or her conscience. Candidates must reaffirm and support our Bill of Rights.

When political candidates, and ultimately legislators and leaders, ignore the needs of children, society suffers, and these consequences are felt for generations to come. Cast your vote to elect candidates who support the best for children.

Primary author Joseph Zanga, MD, FCP
Updated October 2018
Updated September 2016
Updated May 2008
Originally posted May 2003

Click here for a PDF version of the statement.

The American College of Pediatricians is a national medical association of licensed physicians and healthcare professionals who specialize in the care of infants, children, and adolescents. The mission of the College is to enable all children to reach their optimal physical and emotional health and well-being.

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International clinical practice guidelines for gender minority/trans people: systematic review and quality assessment

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ABSTRACT

Objectives To identify and critically appraise published clinical practice guidelines (CPGs) regarding healthcare of gender minority/trans people.

Design Systematic review and quality appraisal using AGREE II (Appraisal of Guidelines for Research and Evaluation tool), including stakeholder domain prioritisation.

Setting Six databases and six CPG websites were searched, and international key opinion leaders approached.

Participants CPGs relating to adults and/or children who are gender minority/trans with no exclusions due to comorbidities, except differences in sex development.

Intervention Any health-related intervention connected to the care of gender minority/trans people.

Main outcome measures Number and quality of international CPGs addressing the health of gender minority/trans people, information on estimated changes in mortality or quality of life (QoL), consistency of recommended interventions across CPGs, and appraisal of key messages for patients.

Results Twelve international CPGs address gender minority/trans people's healthcare as complete (n=5), partial (n=4) or marginal (n=3) focus of guidance. The quality scores have a wide range and heterogeneity whichever AGREE II domain is prioritised. Five higher-quality CPGs focus on HIV and other blood-borne infections (overall assessment scores 69%–94%). Six lower-quality CPGs concern transition-specific interventions (overall assessment scores 11%–56%). None deal with primary care, mental health or longer-term medical issues. Sparse information on estimated changes in mortality and QoL is conflicting. Consistency between CPGs could not be examined due to unclear recommendations within the World Professional Association for Transgender Health Standards of Care Version 7 and a lack of overlap between other CPGs. None provide key messages for patients.

Conclusions A paucity of high-quality guidance for gender minority/trans people exists, largely limited to HIV and transition, but not wider aspects of healthcare, mortality or QoL. Reference to AGREE II, use of systematic reviews, independent external review, stakeholder participation and patient facing material might improve future CPG quality.

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Strengths and limitations of this study

- First systematic review to identify and use a validated quality appraisal instrument to assess all international clinical practice guidelines (CPGs) addressing gender minority/trans health.
- International CPGs were studied due to their influential status in gender minority/trans health, though further research is needed on national and local CPGs.
- An innovative prioritisation exercise was performed to elicit stakeholders' priorities and inform the setting of AGREE II (Appraisal of Guidelines for Research and Evaluation tool) quality thresholds, however these stakeholder priorities may not be applicable outside the UK.
- An inclusive approach using wide criteria, extensive searches and approaching key opinion leaders should have allowed the study to identify all relevant international CPGs, however it is possible some may have been missed.

INTRODUCTION

Assessing the quality of clinical practice guidelines

Evidence-based practice integrates best available research with clinical expertise and the patient's unique values and circumstances. High-quality clinical practice guidelines (CPGs) support high-quality healthcare delivery. They can guide clinicians and policymakers to improve care, reduce variation in clinical practice, thereby affecting patient safety and outcomes. The Institute of Medicine defines CPGs as: 'statements that include recommendations intended to optimise patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options',[1] although other definitions exist.[2] Recommendations are used alongside professional judgement, directly or within decision aids, in training and practice. CPGs are important but have limitations [illegible]tion and

development processes.[3] Grading of Recommendations, Assessment, Development and Evaluation (GRADE) was developed to address the evidence that is selected and appraised during CPG development.[4–6] Using a systematic approach and transparent framework for developing and presenting summaries of evidence, GRADE is the most widely adopted tool worldwide for grading the quality of evidence and making recommendations,[7] but does not alone ensure a CPG is high quality. Strength of evidence is only one component of what makes a 'good' CPG; factors such as transparency, rigour, independence, multidisciplinary input, patient and public involvement, avoidance of commercial influences and rapidity[8 9] should also be considered. Broader domains of CPG quality are included in the Appraisal of Guidelines for Research and Evaluation instrument AGREE II.[10–12] Despite widely recognised principles and methods for developing sound CPGs, current research shows that guidelines on various topics lack appropriate uptake of systematic review methodologies in their development,[13] give recommendations that conflict with scientific evidence[14] or do not adequately take into account existing CPG quality and reporting assessment tools.[15] This emphasises the ongoing need to appraise guidelines to ensure evidence-informed care.

Healthcare for gender minority/trans people

'Trans' is an umbrella term for individuals whose inner sense of self (gender identity) or how they present themselves using visual or behavioural cues (gender expression) differs from the expected stereotypes (gender) culturally assigned to their biological sex.[16] 'Gender minority' is an often-used alternative population description. Some gender minority/trans people may seek medical transition, which involves interventions such as hormones or surgery that alter physical characteristics and align appearance with gender identity. Patient numbers referred to UK gender identity clinics and length of waiting lists have increased in the last decade, particularly for adolescents,[17] a phenomenon seen elsewhere.[18] Gender minority/trans people may have continuing, sometimes complex, life-long healthcare needs whether they undergo medical transition or not. Gender minority/trans people may experience more mental health issues such as mood and anxiety disorders,[19] substance use[20] and higher rates of suicidal ideation.[21] They may seek assistance with sexual health, mental health,[22] substance use disorders,[23] prevention and/or management of HIV[24] as well as usual general health enquiries. However, they may encounter difficulties in accessing healthcare,[25] reporting negative healthcare experiences,[26] discrimination and stigma.[27 28] Like all individuals, gender minority/trans people require high-quality evidence-based healthcare[25 29] addressing general and specific needs.

Guidelines used internationally and in the UK

The quality of current guidelines on gender minority/trans health is unclear. The World Professional Association for Transgender Health (WPATH) Standards of Care Version 7 (SOCv7)[30] represent normative standards for clinical care, acting as a benchmark in this field.[31] Globally, many national and local guidelines[32–35] are adaptations of, acknowledge being influenced by, or are intended to complement WPATH SOCv7,[30] despite expressed reservations that WPATH SOCv7[30] is based on lower-quality primary research, the opinions of experts and lacks grading of evidence.[36]

In the UK, an advocacy group worked to incorporate WPATH SOCv7[30] into national practice.[37] WPATH SOCv7[30] informs National Health Service (NHS) gender identity clinics[38] and guidelines produced by the Royal College of Psychiatrists (without use of GRADE).[39] No CPGs were available from the National Institute for Health and Care Excellence (NICE), Scottish Intercollegiate Guidelines Network (SIGN), British Association of Gender Identity Specialists, or medical Royal Colleges, although the Royal College of General Practitioners issued a position statement on gender minority/trans healthcare in 2019.[40] Assessing quality of international CPGs such as WPATH SOCv7[30] has practice implications for the NHS[38] and private sector. CPGs with international scope may present additional challenges (eg, the implementability of key recommendations might not be easily translated among different contexts) but they seem to influence discourse around gender minority/trans health.[36] No prior study has investigated the number and quality of guidelines to support the care and wellbeing of gender minority/trans people. The purpose of this research was to identify and critically appraise all published international CPGs relating to the healthcare of gender minority/trans people.

METHODS

Approach/research design

The rationale was to identify the key CPGs available to healthcare practitioners in this field of clinical practice. Following preliminary searches, we chose international CPGs in view of WPATH's influence within the UK and elsewhere, and to avoid 'double-counting'. We considered AGREE II[10–12] the most appropriate tool; it is the most comprehensively validated and evaluated instrument available for assessing CPGs,[41 42] designed for use by non-expert stakeholders[10] such as healthcare providers, practicing clinicians and educators.[11] It benefits from clear instructions and prompts regarding scoring and several people applying the criteria independently (a minimum of two reviewers, but four are recommended). AGREE II synthesis calculates quality scores from 23 appraisal criteria organised into six key domains (scope and purpose, stakeholder involvement, rigour of development, clarity of presentation, applicability, editorial independence) and an overall assessment of 'Recommend for use?' (answer options; yes, no, yes if modified). This systematic review was conducted according to a prespecified PROSPERO protocol https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=154361

uploaded 19 December 2019. The MEDLINE strategy was straightforward; although not formally processed,[43] it was peer-reviewed by an information specialist.

Inclusion and exclusion criteria

We defined a CPG as a systematically developed set of recommendations that assist practitioners and patients in the provision of healthcare in specific circumstances, produced after review and assessment of available clinical evidence.[1 2 44–46] CPGs published after 1 January 2010 were eligible if they (or part thereof) specifically targeted patients/population with gender minority/trans status and/or gender dysphoria, were evidence-based, with some documentation of development methodology, had international scope (more than one country, defined as a Member State of the United Nations) and were an original source. We chose the time frame to focus on the most recent guidelines, currently applicable to practice and to include WPATH SOCv7.[30] CPGs were eligible if they met the following inclusion criteria: participants/population was adults and/or children who are gender minority/trans with no exclusion due to comorbidities or age although differences/disorders in sex development (intersex) were excluded; exposure/intervention was any health intervention related to gender dysphoria or gender affirmation, or health concerns of gender minority/trans people, including screening, assessment, referral, diagnosis and interventions. We excluded previous versions of the same CPG. We used broad criteria because terminology has been in flux with changes made in both International Classification of Diseases and Diagnostic and Statistical Manual of Mental Disorders diagnostic criteria.[16] There were no restrictions on setting or language.

Search strategy and guideline selection

We conducted the searches up to 11 June 2020 (CM), using search terms and appropriate synonyms (as Medical Subject Heading (MeSH) terms and text words) that we developed based on population and exposures (online supplemental table 1). We searched six databases (Embase, MEDLINE, Web of Science, PsycINFO, CINAHL, LILACS) and six CPG websites (Agency for Healthcare Research and Quality National Guideline Clearinghouse (NGC), eGuidelines and Guidelines, NICE National Library for Health, SIGN, EBSCO DynaMed Plus, Guidelines International Network Library) and the World Health Organization (WHO). The NGC closed in 2017 but CM hand-searched the archive. In addition to protocol, individual reviewers (IA, DC and MHJ) hand-searched four specialty journals (International Journal of Transgender Health, Transgender Health, LGBT Health, Journal of Homosexuality) to ensure key subject-relevant sources of abstracts were thoroughly checked. In order to find potential grey literature CPGs outwith the scholarly literature, two reviewers (IA and SD) independently performed four separate Google searches (not Google Scholar as misstated in the protocol) by using one generic (clinical practice guidelines) plus one specific term (transgender, gender dysphoria, trans health or gender minority) and examining the first 100 hits. We identified International Key Opinion Leaders (n=24) via publications known to reviewers (DC and SD) and contacted them via email, with one reminder, to identify further guidelines. Reference lists of relevant reviews and all full-text studies were hand-searched to identify any relevant papers or CPGs not found by database searching. Two reviewers (SB and SD) independently read all titles and abstracts and assessed for inclusion. If there was uncertainty or disagreement, or reasonable suspicion that the full-text might lead to another relevant CPG, the full-text was obtained. Non-English abstracts were Google-translated but if a possible CPG could not be reliably excluded, the full-text paper was obtained and translated. Where full-text publications could not be accessed, we contacted authors directly. Two reviewers (SB and either DC/MHJ) independently carried out full-text assessment to determine inclusion or exclusion from the systematic review based on the above criteria, and noted reasons for excluding full-texts. The whole team discussed uncertainties and disagreements to achieve consensus, with voting and final adjudication by the senior author (CM).

Data extraction

Two reviewers (SB and SD) independently collected formal descriptive data of included CPGs. All ambiguities or discrepancies were referred to the team for discussion and to re-examine original texts and extract data. Information collected was title, author, year of publication, number of countries covered, originating organisation, audience, methods used, page and reference numbers (excluding accompanying materials) and funding. Key recommendations were extracted for comparison between CPGs. We searched for all text mentions of mortality or any measures of quality of life (QoL), and noted if accompanied by a citation. All patient facing material was extracted. In addition, we extracted data about publication outlet (journal/website), and whether the quantity of information pertaining to the health of gender minority/trans people represented a complete, partial or marginal proportion of recommendations in the CPG.

Outcomes

Outcomes were: the number and quality assessment scores (using AGREE II) of international CPGs addressing the health of gender minority/trans people; analysis and comparison of the presence or absence of information on estimated changes in mortality or QoL (any measure) following any specific recommended intervention, over any time interval; the consistency (or lack thereof) of recommendations across the CPGs; and the presence (or absence) of key messages for patients.

Quality assessment

All authors completed AGREE II video training, a practice assessment and two pilots whose results were discussed. The six reviewers (IA, SB, DC, SD, MHJ and CM) independently and anonymously completed quality scoring on every CPG by rating each of the items using the standard proforma on the My AGREE PLUS online platform (AGREE enterprise website),[11] which also calculated group appraisal scores.

Patient and public involvement

The AGREE II instrument generates quality scores but does not set specific parameters for what constitutes high quality, recommending that decisions about defining such thresholds should be made prior to performing appraisals, considering relevant stakeholders and the context in which the CPG is used.[11] To help set quality thresholds, we conducted an AGREE II domain prioritisation exercise in January 2020 via email, with one reminder. It was considered impossible to ensure comprehensive representation of international stakeholders. We chose the UK for feasibility, although validity might be limited to UK-based clinicians. Fifty-two UK service-user stakeholder groups and gender minority/trans advocacy organisations, identified via reviewer knowledge and internet searches (IA, SB, DC, SD, MHJ and CM), were informed about the study. They were invited to participate in a stakeholder prioritisation of the AGREE II domains, created using SurveyMonkey and with an option to remain anonymous (https://www.surveymonkey.co.uk/r/WLZ55NQ gives invitation wording, links to resources and protocol). The reviewer team performed an anonymous prioritisation for comparison.

Strategy for data and statistical analyses

Simple frequencies were used to present the stakeholder and reviewer priorities, and outcomes. Following team discussion of the prioritisation exercise results, no prespecified quality threshold score was used to define high or low quality, although colour was superimposed (≤30%, 31%–69% and ≥70%) on the final scores table to aid visual comparisons and interpretation.

RESULTS

Search results

Figure 1 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow chart[47]) shows that 1815 citations were identified, of which 134 full-text publications were read (all available, three supplied by authors) and 122 excluded (online supplemental table W2 with reasons).

Data extraction

Table 1 shows the characteristics of the CPGs. Online supplemental tables W3 and W4 show raw data of key recommendations and mortality and QoL evidence.

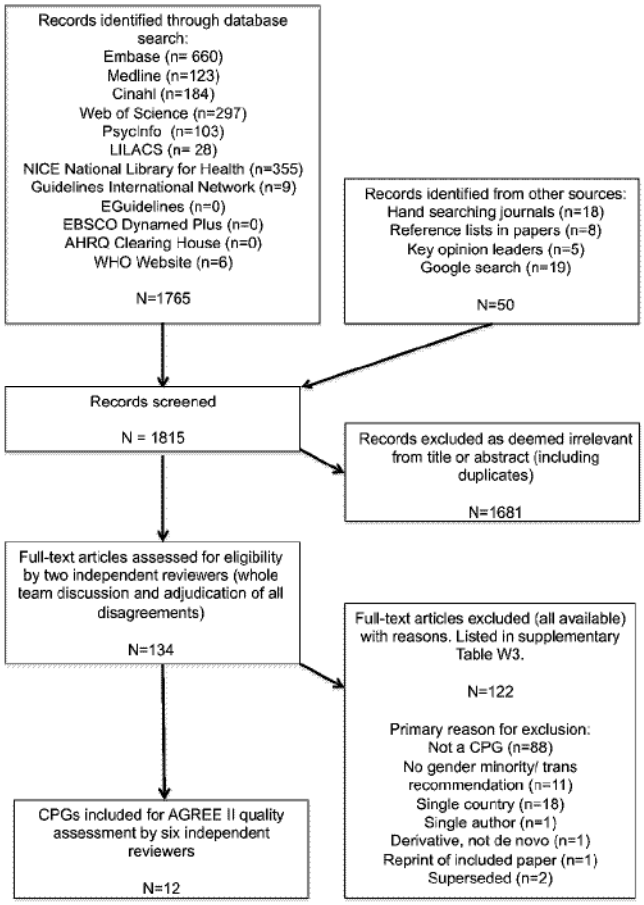

Figure 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram. AGREE II, Appraisal of Guidelines for Research and Evaluation tool; CPG, clinical practice guideline; NICE, National Institute for Health and Care Excellence.

Number and characteristics of clinical practice guidelines

Twelve CPGs (table 1) originated from: WHO (n=3),[48–50] WPATH (n=2),[30 51] professional specialist/special-interest societies (n=4),[52–55] small groups of experts (n=2)[56 57] and one consortium.[58] All were published in English, in journals,[51–57] the organisation's website[48–50 58] or both.[30] Guideline development methodology was variable, including use of systematic reviews (table 1). Ten CPGs had no external review, eight had no update plans. Gender minority/trans health recommendations made up complete (n=5),[30 51 53 55 57] partial (n=4)[48–50 56] or marginal (n=3)[52 54 58] focus of content. CPGs contained 10 to 155 pages, and 20 to 505 references. Funding sources were wide-ranging and sometimes multiple, from government agencies, professional societies, charities and private donations. Two CPGs provided no funding details.[52 56]

A 13th CPG was excluded post-scoring as it had been superseded by a 2020 version without recommendations for gender minority/trans people.[59] It was arguable if four included CPGs did meet criteria: one had not been withdrawn[48]; one contained minimal relevant content[52]; one might not have been intended as a CPG[30] (although

Table 1 General characteristics of included clinical practice guidelines (n=12)

Number	Author (year)	Full title	Countries covered	Origin	Primary audience	Design (systematic review, SR, used and methods thereafter)	Planned update given	Funding
1	Coleman *et al* (2012)[49]	Standards of care for the health of transsexual, transgender and gender non-conforming people V.7	Global	WPATH	Health professionals	Work groups submit manuscripts based on prior literature reviews, no explicit links of recommendations to evidence, expert consensus. No independent external review	No	Tawani Foundation and gift from anonymous donor
2	Davies *et al* (2015)[51]	Voice and communication change for gender non-conforming individuals: giving voice to the person inside	Global	WPATH	Speech-language therapists	Review of evidence. Expert consensus. No independent external review	No	Transgender Health Information Program of British Columbia Canada
3	ECDC (2018)[56]	Public health guidance on HIV, hepatitis B and C testing in the EU/EEA	EU/EEA	ECDC consortium CHIP, PHE, SSAT and EATG	Member states' public health professionals who coordinate the development of national guidelines or programmes for HBV, HCV and HIV testing	Four SRs, SIGN, NICE and AXIS checklists. Ad hoc internal and external expert panel, independent chair, expert consensus. No independent external review	No	Commissioned by ECDC, contractor Rigshospitalet CHIP
4	Gilligan *et al* (2017)[52]	Patient-clinician communication: American Society of Clinical Oncology consensus guideline	USA and others	ASCO	Clinicians who care for adults with cancer	Nine questions (one SR), expert consensus and a Delphi exercise. No independent external review	Regular review 3-year check	None declared
5	Hembree *et al* (2017)[53]	Endocrine treatment of gender-dysphoric/ gender-incongruent persons: an Endocrine Society clinical practice guideline	Global	Endocrine Society	Endocrinologists, trained mental health professionals and trained physicians	Two SRs and GRADE, rest expert consensus. No independent external review	No	Endocrine Society
6	IAPHCCO (2015)[54]	IAPAC guidelines for optimising the HIV care continuum for adults and adolescents	Global	IAPAC	Care providers, programme managers, policymakers, affected communities, organisations, and health systems involved with implementing HIV programmes and/ or delivering HIV care	A systematic search of CDC database, expert consensus. No independent external review	No	IAPAC, US NIH and Office of AIDS Research
7	Ralph *et al* (2010)[58]	Trauma, gender reassignment and penile augmentation	Not specified (international publication)	Author group	Not stated (urological surgeons)	No SR. Unclear if literature review. Leading experts' consensus opinion. No independent external review	No	None declared
8	Strang *et al* (2018)[57]	Initial clinical guidelines for co-occurring autism spectrum disorder and gender dysphoria or incongruence in adolescents	Not specified (international publication)	Author group	Clinicians	No SR or literature review. Two-stage Delphi consensus. No independent external review	No	Isadore and Bertha Gudelsky Family Foundation
9	T'Sjoen *et al* (2020)[55]	ESSM Position Statement 'Assessment and hormonal management in adolescent and adult trans people, with attention for sexual function and satisfaction'	Europe	ESSM	European clinicians working in transgender health, sexologists and other healthcare professionals	No SR. Leading experts' consensus opinion. No independent external review	No	ESSM
10	WHO (2011)[48]	Prevention and treatment of HIV and other sexually transmitted infections among men who have sex with men and transgender people. Recommendations for a public health approach	Global	WHO	National public health officials and managers of HIV/AIDS and STI programmes, NGOs including community and civil society organisations, and health workers	13 SRs for PICOs and GRADE, external GDG, and independent external review	Yes in 2015	BMZ and PEPFAR through CDC and USAID
11	WHO (2012)[49]	Guidance on oral pre-exposure prophylaxis for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV. Recommendations for use in the context of demonstration projects	Global	WHO	Countries/member states	Four SRs (including values and preferences reviews) and GRADE, external GDG and independent external review group	Yes in 2015	Bill & Melinda Gates Foundation

Continued

Table 1 Continued

Number	Author (year)	Full title	Countries covered	Origin	Primary audience	Design (systematic review, SR, used and methods thereafter)	Planned update given	Funding
12	WHO (2016)[50]	Consolidated guidelines on HIV prevention, diagnosis, treatment and care for key populations. 2016 update	Global	WHO	National HIV programme managers and other decision-makers within ministries of health and those responsible for health policies, programmes and services in prisons	Two new SRs in revised guidance, GRADE, external GDGs and 79 independent external peer reviewers	Regular updates; no detail	UNAIDS, PEPFAR, Global Fund

AACE, American Association of Clinical Endocrinologists; ASA, American Society of Andrology; ASCO, American Society of Clinical Oncology; ASD, autism spectrum disorder; AXIS, Appraisal Tool for Cross-Sectional Studies; BMZ, German Federal Ministry for Economic Cooperation and Development; CDC, the Centers for Disease Control and Prevention; CHIP, CHIP/Region H, Rigshospitalet, University of Copenhagen; CPG, clinical practice guideline; EATG, European AIDS Treatment Group; EAU, European Association of Urology; ECDC, European Centre for Disease Prevention and Control; ESE, European Society of Endocrinology; ESPE, European Society for Pediatric Endocrinology; ESSM, European Society for Sexual Medicine; EU/EEA, European Union/European Economic Area; GDG, guideline development group; Global Fund, Global Fund to Fight AIDS, Tuberculosis and Malaria; GRADE, Grading of Recommendations, Assessment, Development and Evaluation; HBV, hepatitis B virus; HCV, hepatitis C virus; IAPAC, International Association of Providers of AIDS Care; IAPHCCO, International Advisory Panel on HIV Care Continuum Optimization; NGO, non-governmental organisations; NICE, National Institute of Health and Care Excellence; NIH, National Institutes of Health; PEPFAR, US President's Emergency Plan for AIDS Relief; PES, Pediatric Endocrine Society; PHE, Public Health England; PICO, Participants/patients, Intervention, Comparators, Outcomes; SIGN, Scottish Intercollegiate Guidelines Network; SR, systematic review; SSAT, St Stephen's AIDS Trust; STI, sexually transmitted infection; UNAIDS, The Unified Budget, Results and Accountability Framework of the Joint United Nations Programme on HIV/AIDS; USAID, US Agency for International Development; WPATH, World Professional Association for Transgender Health.

WPATH SOCv7's stated overall goal is 'to provide clinical guidance for health professionals'[30] it contains no list of key recommendations nor auditable quality standards, yet is widely used to compare procedures covered by US providers[60 61]); one variously described itself as 'position statement' and 'position study' (stating it did 'not aim to provide detailed clinical guidelines for professionals such as… [named]'[30 53], but evidence was obviously linked to key recommendations for clinicians[55]). After discussion it was decided not to exclude these borderline CPGs, as the definition of CPG in the protocol was intended to favour an inclusive approach.

Quality prioritisation and assessment

Results of the domain prioritisation by stakeholders (n=19 replies, response rate 39% excluding 3 'undeliverable') and reviewers (n=6) showed that stakeholders prioritised stakeholder involvement, whereas the reviewer team prioritised methodological rigour (online supplementary table W5). No stakeholder asked for clarification or more information.

Table 2 shows AGREE II scores by domain (8%–94%), and overall (11%–94%). The quality scores have a wide range and heterogeneity. Five CPGs focused on trans people as a key population for HIV and other blood-borne infections (overall assessment scores 69%–94%). Six CPGs concerned transition-specific interventions (overall assessment scores 11%–56%). Transition-related CPGs tended to lack methodological rigour and rely on patchier, lower-quality primary research. The two prioritised domain scores were usually comparable with the overall AGREE II quality assessment (ranges; stakeholder involvement 14%–93%, methodological rigour 17%–87%). Four CPGs obtained a majority opinion 'recommend for use',[48–50 58] five CPGs had unanimous 'do not recommend'[30 51 55–57] and three had minority support with division about the extent of 'yes, if modified'[52–54] (table 2). Despite wide variation there was a pattern; HIV and blood-borne infection guidelines[48–50 54 58] were higher quality, and those focusing on transition were lower quality.[30 53 55–57]

Content

Four CPGs concerning HIV prevention, transmission and care[48–50 54] and one public health guideline on population screening for blood-borne viruses,[58] contained recommendations for gender minority/trans people as a 'key population'. Three CPGs were devoted to overall transition care for all gender minority/trans people,[30 53 55] two to an aspect of transition[51 56] and one to transition in a specific group.[57] One oncology communication guideline contained a single recommendation relating to gender minority/trans people.[52] No international guidelines were found that addressed primary care, psychological support/mental health interventions, or general medical/chronic disease care (such as cardiovascular, cancer or elderly care).

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Table 2 AGREE II (Appraisal of Guidelines for Research and Evaluation tool) domain percentages and overall assessment of included guidelines, and summary of mortality/quality of life measures (n=12)

Number	Author (year)	Scope and purpose	Stakeholder involvement	Rigour of development	Clarity and presentation	Applicability	Editorial independence	Overall assessment	Recommendation to use	Mortality	Quality of life	Mortality (any comment) and quality of life (any formal measure)
1	Coleman *et al* (2012)[30]	83%	47%	20%	37%	16%	15%	31%	Yes **0** No **5** If modified **1**	Y	Y	M: Higher in post SRS vs matched no SRS, and both pre and post SRS vs gen popn. QoL: FtM<gen popn, FtM post breast/chest surgery >not surgery, mixed results at 15 years.
2	Davies *et al* (2015)[51]	62%	38%	17%	61%	28%	14%	28%	Yes **0** No **3** If modified **3**	N	Y	QoL: A voice-related TG QoL measure correlated with own and others' perception.
3	ECDC (2018)[58]	94%	56%	55%	76%	68%	38%	69%	Yes **4** No **0** If modified **2**	Y	Y	M: Reduced by early diagnosis. QoL: Cost/QALY in anti-HCV birth cohort screening is acceptable. Universal offer HIV testing in hospital settings is highly cost effective.
4	Gilligan *et al* (2017)[52]	84%	67%	66%	81%	47%	61%	78%	Yes **2** No **0** If modified **4**	N	N	
5	Hembree *et al* (2017)[53]	65%	40%	41%	73%	29%	65%	56%	Yes **1** No **2** If modified **3**	Y	Y	M: TW/TM's CV mortality same ('insufficient very low quality data' for TM) and younger age at death after SRS. QoL: long-term psychological and psychiatric issues post SRS.
6	IAPHCCO (2015)[54]	85%	56%	61%	87%	40%	63%	81%	Yes **3** No **0** If modified **3**	Y	Y	M: Lower if early ART, easy access, immediate ART, and community distribution. QoL: ART preserves QoL, and stigma and mental health impact on QoL.
7	Ralph *et al* (2010)[56]	45%	14%	19%	64%	5%	32%	28%	Yes **0** No **5** If modified **1**	N	N	
8	Strang *et al*[57] (2018)57	57%	33%	19%	39%	8%	25%	11%	Yes **0** No **6** If modified **0**	N	N	
9	T'Sjoen *et al* (2020)[55]	59%	37%	35%	58%	15%	33%	42%	Yes **0** No **4** If modified **2**	N	Y	QoL: Sexual life improves after GAMI, but not to non-TG levels.
10	WHO (2011)[48]	94%	89%	87%	86%	64%	82%	83%	Yes **5** No **0** If modified **1**	Y	Y	M: Looked for mortality evidence but none found. QoL: Positive QALYs if HIV averted.
11	WHO (2012)[49]	85%	60%	81%	76%	41%	72%	72%	Yes **4** No **0** If modified **2**	N	Y	QoL: Positive QALYs modelled if PrEP.
12	WHO (2016)[50]	94%	93%	81%	89%	84%	65%	94%	Yes **5** No **0** If modified **1**	Y	N	M: Better if access and if adhere to OST, and at prison release; if early ART and completed TB Rx, HBV/ HCV managed; and access to post-abortion care. Worse if food insecure, poor nutrition, low body mass index.

Colours to aid interpretation (not thresholds) ≤30 RED, 31–69 AMBER, ≥70 GREEN.
ART, antiretroviral therapy; CV, cardiovascular; ECDC, European Centre for Disease Prevention and Control; FtM, female-to-male; GAMI, gender affirming medical intervention; gen popn, general population; HBV, hepatitis B virus; HCV, hepatitis C virus; HIV, human immunodeficiency virus; IAPHCCO, International advisory panel on HIV care continuum optimization; M, mortality; OST, opiate substitute therapy; PrEP, pre-exposure prophylaxis; QALY, quality adjusted life year; QoL, Quality of life; Rx, treatment; SR, systematic review; SRS, sex reassignment surgery; TB, tuberculosis; TG, trans people/gender-minority; TM, trans man; TW, trans woman.

Mortality and quality of life

Six CPGs referred to mortality[30 48 50 53 54 58] and eight to QoL[30 48 49 51 53–55 58] (table 2). Online supplemental table W4 shows all extractions of sentences relating to mortality or morbidity, associated references and which CPGs included no such data. More robust evidence was linked to the recommendations in the HIV and blood-borne virus CPGs whereas there was little, inconsistent data and poorer linking to evidence in transition-related CPGs.

Consistency of recommendations across the CPGs

Online supplemental table W5 contains all extracted key recommendations where these could be distinguished. It shows little overlap of topic content across the CPGs. Many recommendations in WHO 2011[48] and 2016[50] were similar, but not identical, the former not being stood down after the latter was published. No statements were highlighted by the WPATH SOCv7[30] authors as key recommendations, and it proved impossible for all six reviewers independently performing data extraction to identify them. The total number of extracted recommendations ranged between 0 and 168 with little consistency or agreement on what passages were selected. Some extracted statements might have been intended as recommendations or standards, but many were flexible, disconnected from evidence and could not be used by individuals or services to benchmark practice. After discussion of this incoherence within WPATH SOCv7[30] and our inability therefore to compare recommendations across all CPGs, it was decided not to revisit inclusions post hoc but to abandon this protocol aim.

Patient facing material

No patient-facing material was found in any guideline.

DISCUSSION

Statement of principal findings

Variable quality international CPGs regarding gender minority/trans people's healthcare contain little, conflicting information on mortality and QoL, no patient facing messages and inconsistent use of systematic reviews in generating recommendations. A major finding is that the scope of the guidelines is confined to HIV/STI prevention or management of transition with an absence of guidelines relating to other medical issues. WPATH SOCv7[30] cannot be considered 'gold standard'.

Strengths and weaknesses of this study

Strengths include protocol preregistration, stakeholder involvement, piloting all stages, an extensive systematic search without language restriction for any relevant current guidelines, wide inclusion criteria including grey literature, use of key opinion leaders, close attention to avoidance of bias, double full-text reading and data entry and careful presentation of results. Six trained reviewers, exceeding AGREE II recommendations,[11] compensated for expected variation in scoring. Extensive searches should have mitigated loss of CPGs. Limitations include some uncertainty about stakeholder understanding despite a good response rate, and generalisability of the prioritisation only to the UK; stakeholders elsewhere might have different priorities. Focusing only on international CPGs might have missed higher quality national and local CPGs derived from them or written de novo. The social acceptance and consequent healthcare system coverage of gender minority/trans health related interventions vary among different countries, which may limit the space for international and multinational guidelines. While the search strategy yielded an oncology communication CPG with a single recommendation for gender minority/trans people,[52] other general health CPGs with similar solo statements might have been missed.

Comparison with other studies, discussing important differences in results

This is the first systematic review using a validated quality appraisal instrument of international CPGs addressing gender minority/trans health. It may act as a benchmark to monitor and improve population healthcare. CPG quality results correspond with, and quantitatively confirm, previously noted concerns about the evidence-base[36 62 63] and variable use of quality assessment in systematic reviews,[64–66] in a healthcare field with unknown or unclear longitudinal outcomes.[17] AGREE II has been applied to CPGs in other medical areas, including cancer,[67] diabetes,[68] pregnancy[69] and depression.[70] These exercises tend to show room for improvement. Developers have been criticised for not using methodological rigour when writing reliable evidence-based guidelines,[71] as well as not implementing high-quality CPGs.[72] Thus, finding poor quality CPGs is not confined to this area of healthcare.[73] Improvement messages are generalisable to other specialties.

Meaning of the study: possible explanations

The finding of higher-quality, but narrow, focus on gender minority/trans people's healthcare for blood-borne infections may relate to the global HIV pandemic and the WHO applying twin lenses of public health and human rights (ie, the population as 'means' and 'ends'). The lower-quality CPGs focus on transition. WPATH SOCv7[30] originated nearly a decade ago from a special-interest association; diagnostic criteria and CPG methodology have since changed. Although HIV and transition are important, it is puzzling to have found so little else, maybe suggesting CPGs for gender minority/trans people have been driven by provider-interests rather than healthcare needs. Including gender minority/trans people in guidelines can be considered a matter of health equity, where CPGs have a role to play.[74] GRADE suggests CPG developers may consider equity at various stages in creating guidelines, such as deciding guideline questions, evidence searching and assembly of the guideline group.[75] How CPGs may impact more vulnerable members of

society should be reflected-upon during guideline development,[76] and implementation.[77]

Implications for clinicians, UK and international policymakers and patients

Clinicians should be made aware that gender minority/trans health CPGs outside of HIV-related topics are linked to a weak evidence base, with variations in methodological rigour and lack of stakeholder involvement. While patient care plans ought to take into account the individual needs of each gender minority/trans person, a gap appears to exist between clinical practice and research in this field.[78] Clinicians should proceed with caution, explain uncertainties to patients and recruit to research.

Policymakers ought to invest in both primary research and high-quality systematic reviews in areas relevant for CPG and service development. Organisations producing guidelines and aspiring to higher-level quality could use more robust methods, handling of competing interests[79 80] and quality assessment. CPG developers should label key recommendations clearly. Although editorial independence was lowest priority for stakeholders, independent external review is important to avoid biases and bad practices, examine use of resources, resist commercial interests and gain widespread credibility outside the field.

The UK is fortunate in being familiar with developing priority-setting partnerships (eg, James Lind Initiative[81]) and generating suites of clinical questions that might cover all steps in patient pathways (eg, in partnership with Cochrane Collaboration[82]). These could underpin multidisciplinary and funded research priorities whose results feed into future better evidence-based CPGs. Implications for UK education and curricular content (eg, new gender identity healthcare credentials[83]), should be carefully scrutinised.

Internationally, CPG development and implementation will vary depending on local country contexts and available resources. Those countries with quality assurance agencies might use them for external assurance. Countries might reconsider the wisdom of adapting low-quality 'off the shelf' international CPGs without due assessment of the evidence for recommendations (eg, using the GRADE-ADOLOPMENT framework[84]). WHO demonstrates how CPGs can achieve high quality.

Patients should be positively encouraged to engage with CPG development as stakeholders. The lack of patient-facing material should be addressed, especially as medical and non-medical online material contains jargon, is unreliable and potentially misleading.[85] Future CPGs should be populated with patient-facing decision aids (eg, fact boxes[86] and icon arrays[87]) that explain sizes of benefits and harms to support informed patient choice. Patients and carers will benefit from a more focused approach to throughout-life healthcare. As the figures for gender minority/trans patients increase within the NHS and internationally, so does the need for consistent guidance to clinicians across specialisms on specific risks to, and means of treating, this population. Current patients should be welcomed to contribute, where they are comfortable, to any research being undertaken by their clinicians, in order to improve data and future practice for gender minority/trans health.

Unanswered questions and future research

This study should be replicated as new iterations of international CPGs become available. It can be applied to national guidelines and countries should perform their own stakeholder prioritisation. When 'best available evidence' is poor, quality improvement can be driven both from inside and outside the field. International guideline developers require more primary research for this population, and impetus from clinicians and scientists to build a better evidence base using robust data from randomised controlled trials and long-term observational cohort studies, especially regarding chronic diseases, health behaviours, substance use, screening and how interventions (eg, hormones) might impact on long-term health (eg, risk of cardiovascular and thromboembolic disease). Mortality and QoL data are required to address questions of clinical and cost-effectiveness.

CONCLUSION

Gender minority/trans health in current international CPGs seems limited to a focus on HIV or transition-related interventions. WPATH SOCv7[30] is due for updating and this study should be used positively to accelerate improvement. Future guideline developers might better address the holistic healthcare needs of gender minority/trans people by enhancing the evidence-base, upgrading the quality of CPGs and increasing the breadth of health topics wherein this population is considered.

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Gold LH, Frierson RL, editors. The American Psychiatric Textbook of Suicide Risk Assessment and Management, Third Edition. Washington DC: American Psychiatric Association Publishing; 2020

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Symposium:
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Newspaper article:
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Film:
Kurosawa A. Rashomon [motion picture]. Kurosawa A, director. Japan: Daiei Film; 1950

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