REVIEW



# Examining transgender health through the International Classification of Functioning, Disability, and Health's (ICF) Contextual Factors

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#### Abstract

*Purpose* For many transgender individuals, medical intervention is necessary to live as their desired gender. However, little is known about Contextual Factors (i.e., Environmental and Personal) that may act as facilitators and barriers in the health of transgender individuals. Therefore, this paper sought to examine Contextual Factors of the World Health Organization's International Classification of Functioning, Disability, and Health that may facilitate or negatively impact the physical, psychological, and social functioning of transgender individuals.

*Methods* A literature review was conducted to identify Environmental and Personal Factors that may influence transgender individuals' physical, psychological, and social functioning. Seven electronic databases were searched. In total, 154 records were reviewed, and 41 articles and other records met inclusion criteria.

*Results* Three general themes emerged for Environmental Factors: family and social networks, education, and health care. Three general themes also emerged for Personal Factors: socioeconomic status, race, and age.

*Conclusions* Transgender individuals benefit from genderaffirming services, improved family and social support systems, and competent provider care. Educational training programs, including medical curricula or workshops, might provide the greatest benefit in improving transgender health by increasing the knowledge and cultural competency of health professionals working with this population. Given the diversity of gender expression, differences in lived experiences, and potential for enduring persistent "double discrimination" due to the intersectional relationships between socioeconomic status, race, and/or age, health professionals must approach transgender health using a holistic lens such as the World Health Organization's International Classification of Functioning, Disability, and Health.

 $\label{eq:constraint} \begin{array}{l} \textbf{Keywords} \hspace{0.1cm} \text{Gender} \cdot \text{Transgender} \cdot \text{Health} \cdot \text{Psychosocial} \cdot \\ \text{ICF} \end{array}$ 

# Introduction

In Western society, biological sex exists within a binary male/female system. 'Gender' and 'sex' are often used interchangeably because of the belief that sex is congruent with one's gender. Sex is assigned at birth and is determined by the appearance of genitalia [1, 2], while gender identity reflects an individual's belief of being a man, woman, or other gender [3]. Individuals who find their gender identity to be congruent with their assigned sex are 'cisgender' [4]. Individuals who experience a disparity between their assigned sex and gender identity are known as 'transgender' [3, 5]. Bockting defined transgender people as, "a diverse group of individuals who cross or transcend culturally defined categories of gender" [3, p. 3]. This group might include, but is not limited to, individuals who transit from male to female (i.e., transgender female) or female to male (i.e., transgender male), drag kings/

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queens, crossdressers, and people who identify as both genders (i.e., genderqueer or gender fluid) [3].

Understanding what it means to be 'transgender' begins with acknowledging the various gender identities and experiences. The following terms refer to identities and experiences that exist under the transgender umbrella. 'Genderqueer' (or 'non-binary') refers to individuals who do not wish to be constrained by the male/female continuum and is often associated with the terms 'gender fluid' (i.e., gender identity shifts between male and female), 'bigender' (i.e., identity encompasses both genders), and 'agender' (i.e., genderless identity). Other terminology focuses on how individuals dress. 'Transvestite' is an outdated term that labeled individuals who dressed in the opposite sex's clothing as having a mental illness. The current term, 'crossdresser,' is no longer associated with mental health concerns. 'Drag king/queen' refers to performers who dress in clothes not associated with their assigned sex, but may (or may not) identify as transgender.

Transgender individuals are often stigmatized due to physical, psychological, and/or social changes that occur during the transition process of becoming transgender female or transgender male. This can result in neglect and violence from family and peers, as well as psychological distress [2, 6]. In addition to experiencing stigma, transgender individuals have varying medical needs. A transgender individual just beginning hormone therapy (to feminize or masculinize) has different medical needs than a transgender individual before or after sexual reassignment surgery [2]. Unfortunately, research often utilizes a biomedical approach that fails to capture the breadth of health needs of transgender individuals. To address fully the physical, psychological, and social needs of transgender individuals, a holistic lens is critical. One such lens is the World Health Organization's International Classification of Functioning, Disability, and Health (ICF) [7].

The ICF is a biopsychosocial framework that aims to establish a universal language to describe health and health-related states. It is composed of: (a) Body Functions, (b) Body Structures, (c) Activities and Participation, and (d) Contextual Factors. While 'Body Functions' relates to the workings of a body system (e.g., hearing), 'Body Structures' relates to anatomical parts of the body (e.g., the ears) [7]. Further, 'Activities and Participation' explores the execution of life activities and level of involvement. 'Contextual Factors,' however, provides a means to understand how transgender individuals interact with their environment (i.e., 'Environmental Factors') and acknowledge how personal characteristics can influence overall health (i.e., 'Personal Factors') [7]. These factors are not formally classified within the ICF, but they affect health at any level, and therefore can assist in exploring transgender health within various life contexts [7].

While previous research has examined transgender health using the ICF (e.g., Hardy et al. [8]), there is a dearth of literature investigating the influence of Contextual Factors on transgender health. The purpose of this review, then, is to provide health professionals with a broader understanding of the Contextual Factors that may influence transgender individuals as they attempt to live their desired gender.

# Methods

A literature review was conducted to address the following research question: what Environmental and Personal Factors may influence transgender individuals' physical, psychological, and social functioning?

## **Eligibility criteria**

Eligibility articles and other records were written in English; published after 1999; involved research that was conducted in the United States of America and/or Canada; and discussed physical, psychological, and/or social functioning of transgender individuals.

## **Information sources**

Database searches were completed using PubMed, PsycNET, PsycINFO, ScienceDirect, Medline, Google Scholar, and the Nursing & Allied Health Database.

## Search

The search protocol consisted of using ICF-related keywords ("international classification of functioning disability and health" OR "ICF" OR "Contextual Factors") and transgender-related keywords ("transgender" OR "trans" OR "LGBT" OR "LGBTQ").

## Study selection

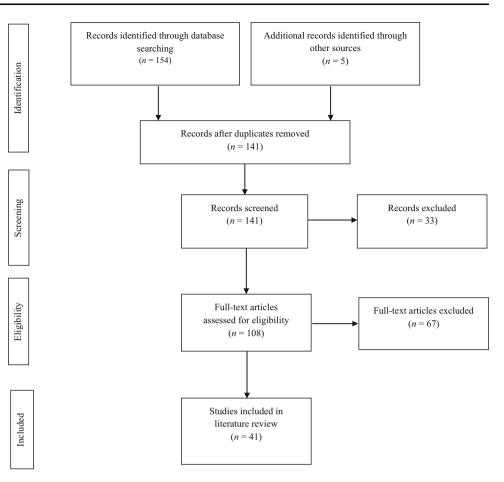
The primary author assessed article titles and abstracts according to the eligibility criteria. If titles and abstracts matched the criteria, full-text articles were reviewed. Uncertainty regarding inclusion of articles matching the eligibility criteria was resolved through selection between both authors.

#### Results

In total, 41 articles and other records were included in the literature review (Fig. 1). Table 1 summarizes the Environmental and Personal Factors extracted from the 41

Fig. 1 Summary of search

literature search



sources meeting the eligibility criteria. For Environmental Factors, three general themes emerged: (i) family and social networks, (ii) education, and (iii) health care. For Personal Factors, three general areas emerged: (i) socioeconomic status, (ii) race, and (iii) age.

# **Environmental Factors**

## Family and social networks

Family and close relationships play a significant role in the health of transgender individuals. Family and peer support can reduce risk-taking behaviors in transgender individuals. Transgender females who do not have at least one supportive family member often use condoms less consistently, which places them at a higher risk of contracting sexually transmitted diseases (STDs) [9, 10]. Transgender individuals who have strong social connections with transgender peers experience lower levels of anxiety and depression [12]. This includes support groups that offer coping methods and allow transgender individuals to discuss and validate their feelings about discrimination [12]. These social connections also serve to overcome negative self-evaluation and question the stigma received from society [13].

Transgender individuals experience, in addition to higher levels of anxiety and depression, increased suicidal behaviors when social supports are not in place [11, 14]. Research suggests that they do not attempt suicide because of their gender identity, but because of a lack of support [14]. One report found that 57% of transgender individuals attempted suicide after their families rejected them for being transgender [12]. Part of this rejection included acts of domestic abuse, which accounted for 65% of surveyed transgender individuals attempting suicide [12].

Family members who express an initial desire to support transgender individuals might not follow through as a result of their lack of understanding, religious beliefs, or emotional difficulties with the transition process [12]. Research suggests that positive representation of transgender individuals in the media, in addition to research detailing risk factors affecting transgender health, can provide families with the information needed to understand and support their family member's gender identity [12]. Health professionals, researchers, and media officials are vital in disseminating accurate information to prevent

#### Table 1 Summary of Contextual Factors

Contextual Factor	Description	Health Impact	No. of articles discussed	References
Family and social networks	Supportive and accepting family network	– Facilitator	8	[9–16]
		<ul> <li>Consistent condom use, lower levels of anxiety and depression, space to develop coping mechanisms</li> </ul>		
	Unsupportive family networks stemming from domestic abuse and rejection	– Barrier		
		- Increased suicidal behaviors		
		- Loss of financial support		
Education	Unsafe environment as a result of verbal and physical harassment, discriminatory policies, unsupportive school personnel	– Barrier	7	[17–23]
		<ul> <li>Risk of physical assault, depression, anxiety, suicidal thoughts, and self-identity issues</li> </ul>		
		<ul> <li>More likely to perform poorly in school and drop out</li> </ul>		
Health Care	Lack of provider knowledge about transgender health needs	– Barrier	8	[1, 24–30]
		<ul> <li>Avoidance of preventive care inability to access safe transition- related services</li> </ul>		
Socioeconomic Status	Increased rates of unemployment and homelessness leads to sex work as a means of income	– Barrier	5	[24, 31–34]
		- Highly stigmatized		
		<ul> <li>Risk of substance abuse, sexual assault, and police violence</li> </ul>		
Race	Combined experience of racial and gender discrimination	– Barrier	5	[16, 20, 24, 35, 36]
		- Poorer health outcomes		
		- Higher rates of depression		
Age	Older transgender adults	– Barrier	6	[36-41]
		<ul> <li>Poorer health and risk of disability and depression</li> </ul>		
		– Facilitator		
		<ul> <li>More likely to seek social support from peers and 'chosen family'</li> </ul>		
	Transgender youths	– Barrier		
		<ul> <li>Less likely to express their true identity as a result of adult perceptions of gender</li> </ul>		
		– Facilitator		
		<ul> <li>More likely to form advocacy and support groups</li> </ul>		

familial rejection. This will facilitate improved physical, psychological, and social functioning, and prevent transgender individuals from turning to illegal means to support themselves (e.g., sex work or theft) [15, 16].

## Education

While schools are intended to be safe spaces, transgender students are often the targets of verbal harassment, physical violence, and discrimination from peers and school personnel [17–19]. One survey found that 37.8% of 7989 Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) students felt unsafe because of their gender expression [18]. The survey also found that 33.1% of students heard negative remarks about transgender people [18]. More than half (55.2%) of students were verbally harassed for their gender expression, and 11.4% were physically assaulted for how they expressed their gender [18].

Students have reported discriminatory policies regarding their gender expression that attempt to uphold traditional gender roles [20, 21]. One transgender woman reported that she was dismissed from school by the principal in an attempt to protect her from peers that may harass her for wearing a skirt [20]. School officials effectively negated their responsibility to ensure a safe learning environment, signaling to other students that harassment can and will be tolerated [20]. Despite facing harassment, transgender students are potentially less likely to report incidents of harassment because they feel as if nothing would remedy the mistreatment [17, 18, 21, 22].

Research also indicates that teachers and school administrators fail to take action against harassment because they typically do not have the training or knowledge of how to do so [22]. Research also suggests that LGBTO issues are rarely addressed in teachers' curricula [23]. Workshops that define LGBTQ-related terms and explore ways that harassment can be prevented in schools can assist teachers to create safe and supportive learning environments [23]. Without continued efforts to provide safe and supportive learning environments, society would be suggesting that transgender students are not inherently worth protecting [20]. Persistent marginalization within the school system can lead to transgender students receiving lower grades, dropping out, and not pursuing post-secondary education [18, 22]. When compounded by the lack of familial support, they may find themselves without employment, shelter, and food. This can result in an increased need for health services not only for transitioning, but also for overall physical and psychological health.

## Health care

Despite a wealth of literature outlining the medical needs of transgender individuals, physician incompetence has resulted in transgender individuals not receiving appropriate care or avoiding care altogether [24]. Briefly, provider incompetence refers to health care providers' general lack of knowledge about transgender health due to information being unavailable or not specific to transgender needs [1]. In the National Transgender Discrimination Survey, 50% of the individuals surveyed encountered provider incompetence and found themselves "[teaching] their provider" [24, p. 76]. One participant reported that a physician took on a "glazed, blank look" after the participant's transgender status was revealed [1, p. 254]. Provider incompetence can manifest itself in the refusal to respect and use preferred pronouns, in addition to refusal of medical treatment altogether [24, 25].

Provider incompetence is also present in speech-language pathology. The World Professional Association for Transgender Health established that voice modification is an important aspect of transitioning for transgender individuals, as it can allow them to feel more comfortable with their gender identity [2]. A study examining speech-language pathologists' (SLPs') attitudes towards members of the LGBTQ population found that SLPs tended to have more negative attitudes about transgender individuals than about lesbian, gay, and bisexual individuals [26]. Of the 267 respondents, 88% reported that their personal beliefs would not affect their ability to treat members of the LGBTQ population. However, one SLP reported that she would be uncomfortable treating someone who "prefers activity with minors," wrongly conflating LGBTQ individuals with those that demonstrate inappropriate behaviors with children [26, p. 211].

As a result of provider incompetence, 28% of transgender individuals postponed care while they were ill, and 33% avoided preventive care [24]. This trend of health care discrimination coupled with avoidance of seeking care leads to poorer health for transgender people. The Centers for Disease Control and Prevention estimated that the prevalence of the human immunodeficiency virus (HIV) in transgender women is 50 times higher than in cisgender adults. If left untreated, HIV can progress to AIDS, which can ultimately lead to infections and death. Despite HIV having been reclassified as a treatable chronic condition, many transgender individuals may not have or be able to access the HIV specialty care they need and thus needlessly experience health consequences associated with untreated HIV.

When unable to receive appropriate care, transgender individuals may be unable to access transition-related services such as counseling, hormone therapy, and genderaffirming corrective surgery. This can result in transgender women receiving black market hormones and silicone injections into the buttocks, breasts, and hips to feminize their appearance [27, 28]. These risky procedures are typically performed by unlicensed individuals and can result in blood clots, respiratory distress, and even death [28].

Fortunately, there has been a great effort to increase competence in health professionals through training programs. One study hypothesized that a lecture dedicated to exploring gender identity and treatment within a mandatory pathophysiology class would increase student willingness and comfort to treat transgender individuals [29]. Before the course, 38% of 74 2nd year medical students expressed discomfort with treating transgender individuals. Afterward, only 3% of students still found themselves uncomfortable [29]. Similarly, Rhodes Medical College physicians found themselves better prepared to treat transgender clients after an LGBTQ training seminar [30]. This seminar included historical treatment of members of the LGBTQ community, discussions related to barriers to health care for LGBTQ community members, unique health care issues for the LGBTQ population, and case discussions [30].

## **Personal Factors**

#### Socioeconomic status

Transgender individuals in the United States are often economically marginalized due to higher unemployment rates, workplace discrimination, and incomes lower than \$10,000 [24]. Because of this economic instability, transgender individuals may find themselves in precarious housing situations. Homelessness is correlated to high amounts of mental illness in all individuals, and, when compared to their gender-conforming peers, transgender youths experience poorer mental health outcomes [24, 31].

When no other housing options are available, transgender youths reported 'survival sex' as a means to obtain food, clothes, or shelter [31, p. 231]. One participant described how exchanging sex for basic necessities negatively affected her self-esteem. Another participant described how she would turn to prostitution for basic necessities and use drugs and alcohol to cope [31]. Many transgender women feel that sex work might be their only source of income [32]; reportedly four of every ten LGBTQ youth resort to sex work for economic survival [31, 33]. Sex work is linked to high-risk circumstances, such as substance abuse, unprotected sex, STDs (including HIV), and sexual and physical violence [34]. Sex work also carries high amounts of stigma and predisposes transgender individuals to an increased risk for violence from "Johns" (i.e., individuals who solicit sexual services) who may or may not know that they are transgender until engaging in sexual activity. Although transgender individuals are less likely to face violence from police than from Johns, one individual feared police interaction because it often entailed, "going to central booking or the nearest hospital" [32, p. 174].

Transgender individuals who are unable to obtain secure employment and housing may be forced into high-risk situations to survive. This can further isolate them as they endure abuse from authority figures. However, understanding transgender health in this context is aided by discussions examining the intersection of socioeconomic status and race. This is especially true when considering the potential 'double discrimination' that transgender individuals face if they belong to a visible minority group while seeking employment and housing.

#### Race

There is currently a lack of research exploring the intersection of race and gender identity. However, it is wellknown that transgender people of color experience layers of discrimination as they navigate Western society [20]. In the United States, racial and ethnic minorities are often subject to disproportionate discrimination. Among the most marginalized, Black and Hispanic transgender individuals experience heightened forms of discrimination in the prison system [20, 24]. Black, Latino, and mixed ethnicity transgender women reported experiencing more violence in prison than their Asian/Pacific Islander and Alaskan Native counterparts [16]. These findings suggest that transgender persons of color experience compounded negative effects as a result of being dually marginalized.

'Double discrimination' might account for poorer health outcomes reported among transgender people of color. Research suggests that 20% of Black and 8.4% of Latino transgender people reported being HIV-positive, in addition to having higher rates of being denied health care due to provider bias [24]. Higher rates of depression were also reported among transgender people of color due to the potential for double discrimination related to transphobia and racism [35]. For transgender youths, the intersection of race and gender serves an important role in cultivating their identity [36]. For example, transgender youths are often unable to separate their racial and gender identity [36]. One participant described himself as neither Chicano nor transgender, but rather a transgender Chicano. Another participant described that being Black and transgender was more important than being either genderqueer or Black [36].

#### Age

Transgender individuals' age can influence experienced discrimination and the formation of social supports. Transgender adults who are 50 years old and older were more likely to experience poorer health, disability, depression, and high stress levels than their LGBTQ counterparts [37]. This is partly attributed to older transgender individuals being less likely to reveal their gender identity to physicians, resulting in misdiagnosis or failure to diagnose serious illness. Among this, age demographic's concerns are culturally competent care and the knowledge needed about the long-term effects of different therapies [37].

The aging transgender population is noted for seeking social supports from peers rather than family. These peers often make up the 'chosen family' [38, p. 80], and research suggests that many transgender individuals receive care and support from the chosen family [38]. Chosen families provide assistance across life circumstances, from running errands, to emergencies, to personal matters [39]. These supportive social networks result in higher levels of self-reported happiness among older transgender individuals, in addition to a positive sense of identity, compared to transgender peers without social networks [39, 40].

Contrarily, Singh described how transgender youths face 'adultism,' referring to a system where adults hold power in a youth's life [36]. Transgender youths find that they are not taken seriously by adults and are often told to "wait until [she or he] grew up" [36, p. 702]. One transgender participant discussed how his mother's overbearing desires prevented him from expressing himself freely [41]. The participant indicated that he had to validate his own desires and not his mother's [41]. In this way, being transgender may be viewed by others as a phase [41].

Despite adultism, transgender youths have discovered alternative sources of support. This support is partly due to the increasing opportunities transgender youths have to connect with other transgender people. There has been an increase in the visibility of the LGBTO community, and this has resulted in more readily available role models and information sources for transgender youths [42]. For example, transgender youths have reported using social media platforms to learn about gender-affirming perspectives [36]. When discussing his experiences with social media, one participant stated, "I'm not always strong even though I feel like I have to be. And that's when I will get on one of those YouTube channels." [36, p. 698]. Being exposed to multiple perspectives allows transgender youths to incorporate these new ideas into their worldviews. As a result, these youths are able to find new ways to feel comfortable with their identity and may discover new methods of confronting and coping with potential racism and gender discrimination [36].

More transgender youths are also joining LGBTQ organizations and support groups because they feel valued for their identity [36]. These venues provide an opportunity to discuss transgender-specific issues and assist in skill development necessary for self-advocacy [36, 41]. Group members often assume leadership positions in LGBTQ organizations, advocate for transgender-friendly policies, and confront transphobic attitudes [36]. One participant discussed his success in collaborating with his organization to create a gender-neutral bathroom in his school. Another participant discussed transgender issues within the residence hall with the Dean of Students [36]. Both of these experiences highlight the importance of schools providing safe spaces in which they could openly express themselves [36].

The increase in transgender youths seeking support in a variety of contexts, including the Internet and LGBTQ organizations, highlights the positive interactions between social support and age. Organizational membership can lead to improved physical, psychological, and social functioning, which can educate, instill confidence, and provide transgender youths the freedom to discuss relevant issues and facilitate advocacy for others who identify as transgender.

#### Discussion

This literature review sought to examine transgender health through the ICF's Contextual Factors. While the ICF provides a holistic lens with which to view health and healthrelated states, the ICF's Contextual Factors permit an understanding of the intersectional relationships that exist within (and among) transgender individuals' personal characteristics and surrounding environments. Consistent with our objectives, this review identified several important Personal and Environmental Factors that may act as facilitators or barriers to transgender health.

Environmental Factors, such as a lack of support, abuse, and isolation from family and peers, were found to increase rates of depression, anxiety, and suicide [14, 28]. Their negative impact on psychological functioning was often accompanied by a sense of hopelessness that the situation would remain unchanged [20]. This is further evidenced in a larger societal context (i.e., the health care system), where many transgender individuals experience provider incompetence [24]. Provider incompetence might serve as a barrier for transgender individuals as they seek medical and genderaffirming care. Curricula changes in medical schools might facilitate better transgender health care by increasing physician comfort when treating transgender individuals, thus facilitating competent care [29, 30]. However, in the absence of appropriate medical education, transgender individuals may avoid seeking professional care and turn to illegal and dangerous alternatives [24, 27, 28], placing them at a greater risk for poor health or even death.

Health outcomes may be worsened due to transgender individuals' Personal Factors of socioeconomic status (e.g., tenuous housing and employment) and race [24, 31]. Many transgender individuals may turn to sex work and become vulnerable to community, sexual, and/or police violence, increased stigma, and risk for HIV [32–34]. Persistent 'double discrimination' can also heighten feelings of depression and levels of transphobia. Moreover, while transgender Black and Latino individuals report higher incidences of HIV, they also report higher rates of being denied health care [24, 35].

Fortunately, research suggests that transgender youths reduce risk-taking behavior when surrounded by supportive family members and have better psychosocial functioning as a result. For example, they use condoms more consistently and are less likely to attempt suicide [11, 28]. Even older transgender individuals, who are vulnerable to higher rates of depression, reported increased happiness because of their close relationships with a chosen family [37–40]. LGBTQ organizations act to facilitate the development of the self-advocacy skills required to ensure that the surrounding environment is inclusive [36]. The transition

process can also be made easier when others who can empathize and provide support are available. Current literature also highlights the importance of workshops provided to teacher candidates, which successfully educated soon-to-be school professionals on LGBTQ issues as a means to confront discrimination [23]. Supportive relationships assist transgender individuals to cope effectively with and combat discrimination through sharing personal experiences [12, 28]. Overall, a positive family social network can lend strength and allow transgender individuals to navigate successfully a social system that is fraught with challenges [36].

# Conclusion

Based on the results of this review, examination of transgender health using the ICF framework has the potential to provide a unique and rich perspective for health professionals working with this population. It appears that the (albeit limited) information concerning the Contextual Factors that can impact transgender health might assist in understanding the rules, expectations, and interactions within various life contexts. More specifically, Environmental Factors permit an understanding of how the context in which transgender individuals live might impact their health, while Personal Factors can be used to explain how individual characteristics are unique and can contribute toward health.

The present review suggests that transgender individuals benefit from gender-affirming services, in addition to improved family and social support systems and competent provider care. Familial and social supports are vital to the physical, psychological, and social functioning of transgender individuals before, during, and after transition. Further, educational training programs (e.g., school curricula or workshops) might provide the greatest benefit toward improving transgender health by increasing the knowledge and cultural competency of professionals working with this population. Given the diversity of gender expression, differences in lived experiences, and potential for enduring persistent 'double discrimination,' health professionals must be able to approach transgender health using a holistic lens. Such a lens is possible through the ICF; it captures not only the physical changes a transgender individual may experience, but also facilitates understanding the psychological and social effects through the intersection of Contextual Factors as well.

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#### Compliance with ethical standards

**Conflict of interest** Melissa Jacob declares that she has no conflict of interest. Steven Cox declares that he has no conflict of interest.

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent Not applicable.

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