Archives of Sexual Behavior
https://doi.org/10.1007/s10508-021-02205-3

ORIGINAL PAPER

Attitudes Toward Transgender People Among Future Caribbean Doctors

Michael H. Campbell[1] · Jill Gromer[2] · Maisha K. Emmanuel[1] · Arianne Harvey[1]

Received: 22 January 2020 / Revised: 23 October 2021 / Accepted: 25 October 2021

Abstract

The attitudes of medical students toward transgender people have important implications for the future quality of healthcare for Caribbean transgender patients. This paper examined the attitudes and beliefs of Caribbean medical students toward transgender people, provides psychometric evaluation of a promising instrument, and considers implications for the development of transgender curricula in Caribbean medical education. Medical students ($N = 205$; 155 women, 43 men, 7 unstated) enrolled at a publicly supported Caribbean university completed the Transgender Attitudes and Beliefs Scale (TABS; Kanamori et al., 2017). Internal consistency was strong for the total TABS ($\alpha = .93$) and more variable for the three subscales: interpersonal comfort (IC: $\alpha = .91$), sex/gender beliefs (SGB: $\alpha = .89$), and human value (HV: $\alpha = .74$). Confirmatory factor analysis demonstrated acceptable overall fit for the three-factor model. There were no significant gender differences in overall attitudes toward transgender people as measured by the total TABS score; women reported higher IC scores. Scores were not correlated with age or with year in medical school. Students reported significantly more tolerant attitudes on the HV scale than on IC or SGB scales. Psychometric findings establish measurement invariance and provide support for further use of the TABS in the Caribbean. We discuss implications for medical curriculum development, including use of the TABS as a tool for medical students to reflect on their individual attitudes and beliefs regarding transgender people.

Keywords Transgender attitudes · Transgender beliefs · Stigma · Caribbean · Medical education · Transgender

Introduction

Transgender stigma affects people whose gender identities or gender roles differ from those typically associated with the sex they were assigned at birth (American Psychological Association, 2015; Link & Phelan, 2001). Stigma occurs when individuals and institutions engage in labeling, stereotyping, and ostracizing groups of people, creating barriers to socioeconomic and political power. These barriers create disadvantages in multiple ways and at multiple levels, including discrimination, victimization, feelings of devaluation or anticipated hostility, and internalized negative belief (Herek, 2016; King et al., 2020). Attitudes toward transgender people have not been widely studied in the Caribbean, and studies validating measures of sexual prejudice in the Caribbean are few (Gromer et al., 2013; West, 2018). In the case of attitudes toward transgender persons, they are entirely lacking. The attitudes of medical students, in particular, have important implications for the future quality of healthcare for transgender patients in the Caribbean, and, more immediately, for curriculum design in medical programs producing Caribbean practitioners.

Transgender Stigma and Health

Transgender stigma contributes to negative health outcomes. The Pan American Health Organization (PAHO, 2014: p. 9) has identified five key concerns:

(1) Disproportionately high levels of exposure to verbal, emotional, and physical violence, including deadly assaults
(2) High levels of mental health problems associated with external causes
(3) Disproportionate rates of HIV and other STIs
(4) High levels of substance use, including alcohol

✉ Michael H. Campbell
michael.campbell@cavehill.uwi.edu

[1] Faculty of Medical Sciences, The University of the West Indies—Cave Hill, Bridgetown BB11000, Barbados

[2] College of Social Work, Florida State University, Tallahassee, FL, USA

Published online: 15 November 2021

(5) Negative consequences resulting from self-administered substances for body modification, as well as complications from poorly performed sex reassignment interventions

The impact of transgender stigma in the Caribbean is especially evident in sexual and mental health. HIV infection rates have declined in the Americas, but risk among transgender people remains disproportionately high (Gebre et al., 2016; PAHO et al., 2014). In Jamaica, transgender discrimination contributes to multiple risk factors for HIV (e.g., binge drinking, depressive symptoms, and abuse). Police harassment is also associated with increased risk of HIV (Logie et al., 2017a). In the Dominican Republic, transgender stigma is associated with alcohol use that contributes to risky sexual behaviors, including lower rates of condom use (Budhwani et al., 2017a, 2017b; Hearld et al., 2019). In Haiti, food insecurity, economic instability, and history of rape are associated with HIV + status in transgender women, contributing to HIV prevalence of 26.7% and viral suppression rates of only 46% (Zalla et al., 2019).

Transgender people have higher rates of depression, self-harm, and eating disorders (Connolly et al., 2016). These negative mental health outcomes are associated with abuse from childhood that results in social and physical dislocation (Alessi et al., 2016). For example, a recent study of transgender women in the Dominican Republic documented high rates of traumatic violence, including sexual abuse (24%), torture (12%), and attempted murder (20%). Each of these was associated with an approximate three-fold increase in suicide risk (Budhwani et al., 2018).

Further, transgender stigma and associated discrimination create barriers to access of healthcare services. For example, Gonzales and Henning-Smith (2017) found that transgender women were less likely to have health insurance, and transgender men were more likely to have no insurance or a usual source of medical care. Sanchez et al. (2009) assessed healthcare utilization and barriers to access among MTF transgender patients. Cost, poor access to knowledgeable providers, and poor access to specialists were barriers to care. Transgender patients with access to care were more likely to have a medical evaluation before commencing hormone therapy and to engage in risk reduction behaviors (e.g., smoking cessation, obtaining syringes from traditional sources) during the course of transition. In the Caribbean, a recent study found that lack of provider knowledge and discomfort during appointments were barriers to gender-affirming health services for transgender patients in Puerto Rico (Martinez-Velez et al., 2019).

Barriers to care exacerbate vulnerability to HIV infection, compounding the risk presented by HIV stigma itself, which continues to drive discriminatory behavior in Caribbean healthcare settings (Landis et al., 2018). In a regional study including Barbados, transgender-based violence increased vulnerability to HIV infection and barriers to healthcare (Evens et al., 2019; Lanham et al., 2019). Hamilton et al. (2020) elucidated the contribution of stigma experienced by marginalized groups, including transgender women, to unacceptably low HIV testing uptake across the Caribbean, resulting in delayed treatment initiation and decreased survival rate. Jamaican studies have documented high HIV prevalence and sub-optimal HIV testing uptake among transgender women (Logie et al., 2016). A qualitative study in Jamaica (Logie et al., 2017b) identified a number of barriers to HIV testing for MSM and transgender women, including provider mistreatment, confidentiality breaches, and HIV-related stigma. Barriers to care persist in spite of widespread adoption of "treat all" policies and implementation of pre-exposure prophylaxis (PrEP) in some Caribbean nations, including Barbados (Luz et al., 2019). In short, transgender women are both overrepresented in the Caribbean HIV epidemic and underserved by existing healthcare systems. In the context of daunting health disparities, the role of medical training to reduce stigma and improve transdender care is crucial.

Transgender Curricula in Medical Education

The importance of physicians' moral, ethical, and social attitudes was recognized from the inception of transgender medicine (Green & Money, 1969; Green et al., 1966). More than fifty years later, transgender curriculum is lacking in many medical schools, and the quality of existing transgender curricula varies widely (Obedin-Maliver et al., 2011). A recent review (Korpaisarn & Safer, 2018) identified gaps in transgender education in both medical school and postgraduate education, including primary care, endocrinology, gynecology, urology, plastic surgery, and mental health.

The efficacy of LGBT curricular interventions has been demonstrated in small studies in the United States. Park and Safer (2018) found that students completing an elective in transgender medicine reported increases in comfort and knowledge related to treating transgender patients. Vance et al. (2017) reported improvements in knowledge and awareness among medical students, nursing students, and interns after completion of online training and clinic exposure to pediatric transgender patients. Health sciences students from several professions demonstrated increased knowledge and reported less transphobia after completing an elective comprising a series of teaching sessions and patient panels (Braun et al., 2017). Eriksson and Safer (2016) found that exposure to a single evidence-based lecture on the biological durability of gender identity produced improvements in knowledge regarding etiology of gender identity and appropriateness of hormone therapy. The University of Louisville LGBT Health Certificate Program, a medical student elective, produced encouraging knowledge outcomes in a pilot study (Sawning et al., 2017). Brown et al. (2018) recommended psychoeducation to promote a culture of alliance with the transgender

community and provide opportunities for reflective supervision in training for mental health providers. The authors call for further research on attitudinal scales to inform curriculum development for clinicians, with particular focus on understanding the latent variables underpinning reported attitudes. This need is especially pronounced in the Caribbean, where studies on transgender attitudes are few and psychometric properties of relevant measures have not been established.

Transgender Knowledge and Attitudes Among Caribbean Medical Students and Practitioners

Few studies of attitudes toward transgender people among health professionals or students exist in the Caribbean. Rambarran and Grenfell (2016) identified deficits in knowledge, training, and experience with LGBT healthcare among primary care practitioners in Barbados. Other studies have included fleeting coverage of transgender issues as part of homophobia and HIV-related stigma (e.g., Massiah et al., 2004; Rutledge & Abell, 2005). More research on transgender issues is needed to strengthen medical education and practice.

Measuring Attitudes Toward Transgender People

A number of measures of attitudes toward transgender people are present in the literature, but the evidence base for most of these instruments is lacking; see Morrison et al. (2017) for a review. Better validated measures include the Genderism and Transphobia Scale-Revised and Short Form (Tebbe et al., 2014), each of which demonstrated a two-factor structure comprising negative attitudes and propensity for violence.

The TABS is a newer instrument that measures three distinct components of attitudes: interpersonal comfort, sex and gender beliefs, and human value. The instrument has several advantages compared to previously developed measures. Following theory-driven recommendations, the TABS endeavors to measure multiple constructs to reflect a broader multidimensional conceptualization of attitudes and beliefs. Further, the authors recruited a stratified sample not limited to university students (and stratified to include adequate representation of evangelical Christians to afford evaluation of items targeting religious belief). Billard (2018) has criticized the TABS, questioning, in particular, the instrument's content validity, given that the authors "generated scale items in consultation with a Christian theology expert" (p. 2) and stratified the sample to ensure significant representation of Evangelical Christians. Although this development strategy may raise some questions about item content, these test characteristics could offer advantages in the Barbadian context, where conservative Christian voices are prominent in public discourse and policy discussions regarding LGBT issues (Church decries LGBT agenda, 2018). Vigorous debate has emerged among Barbadian church leaders, with some advocating strongly for LGBT rights (Wedderburn, 2018). Faith-based belief and dialog are important aspects of the formation and expression of public attitudes toward transgender people in Barbados. In this context, the TABS offers specific advantages.

Current Study

Given the stigma-related health consequences commonly experienced by transgender people, the lack of curricula specific to transgender issues in medical education, and the absence of studies examining transphobia among medical students in the Caribbean, this study addressed three primary research objectives. First, we sought to provide psychometric evaluation of the TABS and, in particular, to evaluate the factorial fit of the measure in a Caribbean population. Second, we measured the attitudes and beliefs of medical students regarding transgender people. Because age, gender, and level of education have been associated with transphobia in other cultures (e.g., Fisher et al., 2017; Garcia-Acosta et al., 2020; Morgan et al., 2020), we also examined differences in attitudes by gender, age, and year in medical school. Third, we considered the implications of our findings for development of transgender curricula in Caribbean medicine.

Method

Participants

Participants ($n = 205$) included 155 women, 43 men, and 7 people who did not specify their gender. The average age was 22, with a range of 18 to 34. Participants were mostly Barbadian ($n = 84$) or from Trinidad or Tobago ($n = 72$). Bahamians ($n = 13$) and people from other Anglophone Caribbean nations ($n = 7$) were also represented. All participants were medical students in years 1 through 5, with students in year 3 most strongly represented ($n = 108$).

Measures

The Transgender Attitudes and Beliefs Scale (TABS; Kanamori et al., 2017) is a 29-item self-report scale using a Likert response format. The TABS yields a total score and comprises three empirically derived subscales identified by exploratory factor analysis and later supported by confirmatory factor analysis with an independent sample: interpersonal comfort (IC), sex/gender beliefs (SGB), and human value (HV). All subscales demonstrated strong internal consistency ($\alpha > 0.90$) in the original scale development study. Additionally, the TABS correlated in the theoretically expected directions with several measures, providing evidence of convergent and discriminant validity.

Procedure

After providing informed consent, students completed written questionnaires including the TABS and relevant demographic items during class time.

Data Analytic Plan

After initial data screening, we evaluated the psychometric strengths of the TABS via internal consistency of scores and item analysis. Then, after imputing missing item values, we evaluated the fit of the three-factor structure reported in the original TABS study. Finally, the study examined differences in TABS scores by gender, age, and current academic year.

Results

Initial Data Screening

No more than 1.0% of data were missing for any item of the TABS, and Little's (1988) test suggested that data were missing completely at random, $\chi^2(139) = 131.14$, $p = 0.67$. Estimation maximization was used to impute individual missing data points. Data met the assumption of multivariate normality as assessed by quantile–quantile (Q–Q) and probability–probability (p–p) plots produced with SPSS 25 (IBM Corp, 2017).

Reliability and Item Analysis

Internal consistency of scores for the total TABS (Cronbach's $\alpha = 0.93$) was very good. The IC subscale (Cronbach's $\alpha = 0.91$) and the SGB subscale (Cronbach's $\alpha = 0.89$) also demonstrated good internal consistency in this sample. The HV subscale's internal consistency was adequate (Cronbach's $\alpha = 0.74$).

Item-total statistics revealed that removing any item from the total scale would either reduce internal consistency or have no effect on Cronbach's alpha. However, each subscale contained one item that would produce a very small (≤ 0.006) increase in the subscale alpha if removed. For the IC subscale, this was item 1.8 ("I would be upset if someone I'd known for a long time revealed they used to be another gender"). For the SGB subscale, this item was 2.9 ("A child born with ambiguous sex-parts should be assigned to be either male or female"), and for the HV subscale, this item was 3.3 ("I would find it highly objectionable to see a transgender person being teased or mistreated"). Because these items were conceptually relevant and did not detract from the total scale, they were retained for further evaluation with factor analysis.

The HV subscale showed a potential ceiling effect, with 60% of the sample having the highest possible score. Four of the five human value items had highly skewed distributions, as did the subscale score itself (-2.34, SE $= 0.17$). This may be a limitation, but the human value items are highly conceptually relevant and were therefore retained for further evaluation.

Factor Structure

A confirmatory factor analysis using maximum likelihood mean adjusted estimation examined the fit of the three-factor model reported in the original sample (Kanamori et al., 2017). Modification indices suggested that specifying a correlation between the residuals of items 1.3 and 1.4 would moderately improve the fit of the model, so this modification was made and the model was run again. The resulting path diagram, including factor loadings, can be found in Fig. 1. Even without including the error correlation, the overall fit of the original model was acceptable. Given the highly skewed distribution of HV scores, we calculated the scaled (mean-adjusted) chi-square recommended by Satorra and Bentler (1994) for use with non-normal data.

Three factor loadings were weaker than 0.50. These were items 1.8 (0.44, "I would be upset if someone I'd known for a long time revealed they used to be another gender"), 2.9 (0.34, "A child born with ambiguous sex-parts should be assigned to be either male or female"), and 3.3 (0.48, "I would find it highly objectionable to see a transgender person being teased or mistreated"). Further, each item detracted from the alpha of its corresponding subscale. Of these items, 2.9 had the lowest factor loading and is also of questionable conceptual relevance, given that item content addresses intersex rather than transgender people. For these reasons, the model was run again without this item. Model fit was not impacted in a meaningful way. See Table 1 for the resulting fit indices. Most of the fit indices calculated by Mplus 8.3 were within the various acceptable ranges outlined by Kline (2016) for both the original and modified models. The HV factor did not correlate as strongly as expected with the other two factors. The correlation between HV and IC was 0.33; between HV and SGB, 0.26.

Subscale, Education, Gender, and Age Comparisons

The mean TABS score for the entire sample ($n = 205$) was 147.21 (SD = 27.32), range: 69–203 (absolute range: 29 to 203). The mean subscale score for IC was 74.10 (SD = 15.25), range: 27–98 (absolute range: 14–98). For SGB, the mean score was 39.44 (SD = 13.68), range: 10–70 (absolute range: 10–70). For HV, the mean score was 33.67 (SD = 2.23), range: 20–35 (absolute range: 5–35).

Using responses standardized by linear transformation to equivalent Likert scores, students reported significantly more tolerant attitudes on the HV scale than on IC or SGB scales; $t(204) = 19.82$, $p < 0.001$ and $t(204) = 30.20$, $p < 0.001$,

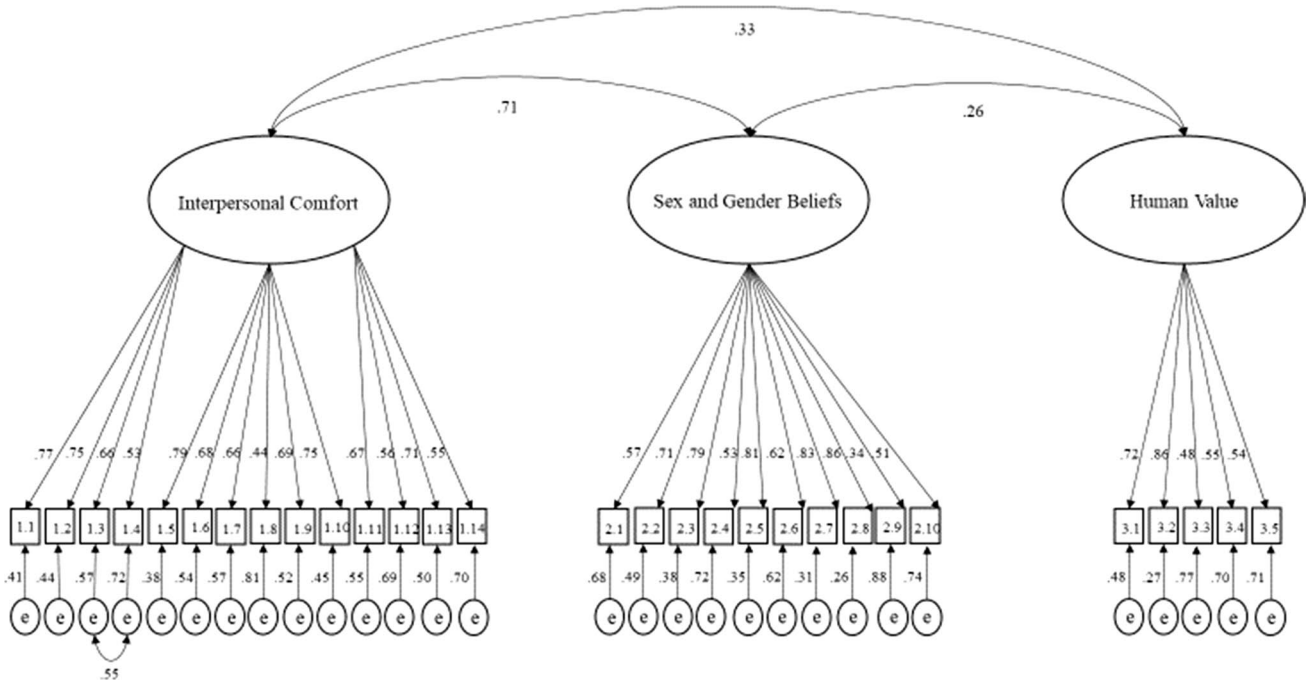

Fig. 1 Visual representation of the Transgender Attitudes and Beliefs Scale confirmatory factor analysis model

Table 1 Fit indices for the Transgender Attitudes and Beliefs Scale confirmatory factor analysis models

	χ^2	*df*	χ^2 *p* value	T_d	T_d *p* value	CFI	TLI	SRMR	RMSEA
3 Factor	574.92	374	.00	−2179.51	1.0	.92	.91	.06	.051
Modified	515.68	373	.00	−2238.75	1.0	.94	.94	.06	.043
Minus item 2.9	473.52	346	.00	−473.52	1.0	.94	.94	.06	.042
Acceptable Range	N/A	N/A	≥.05	N/A	≥.05	≥.90	≥.95	<.08	<.08

Acceptable ranges sourced from Kline (2016)

CFA confirmatory factor analysis, T_d satorra-bentler scaled chi-square difference test, *CFI* comparative fit index; *TLI* tucker-lewis index, *SRMR* standardized root mean square residual, *RMSEA* root mean square error of approximation

respectively. However, scores on the IC and SGB were above the midpoint for each scale, reflecting moderately affirming attitudes. Full and subscale scores were not correlated with year in medical school. There were no significant gender differences in overall attitudes toward transgender people as measured by the total TABS score.

Means and standard deviations of subscale scores by gender are presented in Table 2, which includes summary statistics from the normative sample obtained in the U.S. by Kanamori et al. (2017) for comparison. In the Barbadian sample, females reported significantly higher IC scores than did males; $t(204) = 2.39$, $p < 0.02$, $d = 0.39$. Although statistical comparison between Barbadian and U.S. samples is not possible, both males and females in the Barbadian sample tended to report less tolerant sex and gender beliefs (i.e., SGB scores of 39.43 vs. 51.31 for females and 40.28 vs. 46.17 for

Table 2 Mean and standard deviation of the Transgender Attitudes and Beliefs Scale subscales by gender in Barbadian and U.S. samples

Subscale	M	SD
*Interpersonal comfort (IC)**		
Male	69.76 (70.09)	15.52 (20.81)
Female	74.79 (80.67)	14.08 (19.20)
Sex/gender beliefs (SGB)		
Male	40.28 (46.17)	12.70 (15.07)
Female	39.43 (51.31)	13.70 (15.06)
Human value (HV)		
Male	33.21 (30.66)	2.41 (4.63)
Female	33.77 (32.86)	2.42 (3.40)

Values in parentheses are from the U.S. normative sample obtained by Kanamori et al. (2017)

*$p < .05$, $d = .39$

males). TABS scores were not correlated with age; however, age range was limited (18–34), and the data showed evidence of skewness (1.17, SE = 0.18), limiting conclusions about age correlations.

Discussion

The psychometric strengths established in this study support further use of the TABS for teaching and research in the Caribbean. Although specific standards for demonstrating measurement invariance are evolving, the importance of establishing construct equivalence for comparative research is an emerging theme in the psychometric literature (Putnick & Bornstein, 2016). Attitudinal research in the Caribbean frequently employs measures developed elsewhere and too infrequently examines cross-cultural construal of relevant constructs in reporting findings. Our study established measurement invariance of the TABS in comparison with the U.S., setting the stage for further cross-cultural research, as well as highlighting potentially important differences in response patterns among Caribbean students.

For instance, female students reported greater interpersonal comfort with transgender people than did their male counterparts, which is consistent with findings in the U.S. normative sample for the TABS. Global and individual scale scores were not correlated with age or year in medical school. The lack of association between age and attitudes is possibly attributable to a small age range (18–34) among participants. However, one recent U.S. study found that age was correlated with stigma, even in a typical-aged undergraduate student population (Stafford, 2018). The lack of fundings in this study could be attributable to restriction of range.

It is of particular interest that although the present results supported a three-factor structure of the TABS, the HV subscale showed a ceiling effect, with 60% of the sample having the highest possible score. Four of the five HV items, and the subscale itself, had highly skewed distributions. Further, the HV factor did not correlate as strongly as expected with the other two factors. Student responses reflected strong endorsement of the human value but less affirming (although mid-range) sex and gender beliefs and levels of comfort with transgender people. The nearly universal endorsement of items reflecting human value both evidences an important attitudinal characteristic of Caribbean medical students and limits the utility of the HV subscale to distinguish among students in the Caribbean setting. This variation in component scale scores reflects the multidimensional nature of stigma and is important to address in developing effective transgender education for Caribbean medical students and health care providers.

As Kanamori et al. (2017) highlight in their original paper, the affirmation of human value more strongly than other supportive attitudes toward transgender people is associated with conservative Christian beliefs in the U.S. The same dynamic is present in the Caribbean. Importantly, abstract endorsement of human value has not translated to practical changes in Caribbean policy or legal frameworks affecting sexual minorities (Malta et al., 2019). Effective transgender curriculum content needs to build from the ethics of respect for persons to include more targeted coverage of evidence-based knowledge, both clinical and sociocultural, of transgender issues. Further, these findings suggest an effective curriculum should include an experiential component to help medical students work with greater levels of comfort when treating transgender patients. Medical educators (e.g., Noonan et al., 2018) have emphasized the growing necessity of transgender-specific curricula, and our findings suggest that increasing personal comfort among medical students should be a part of such curricula in the Caribbean.

Our findings also support the recommendations of Brown et al. (2018), who advocate education for practitioners with a focus on empathic understanding, as well as reflective supervision affording the opportunity for clinicians to examine their attitudes and beliefs. The TABS can play a practical role in this educational process as a self-assessment tool for practitioners in training as they prepare to serve transgender and other sexual minority populations. Further, the TABS may be used in any educational activities that encourage students to examine their internalized attitudes toward marginalized patient populations.

Broadly, we recognize that medical education is a cornerstone of responsive health policy. Kirk and Huish (2018, p. 215) described the Cuban case of approaching "sexuality and sexual identity not as rights-based issues but rather as health-based challenges." The fundamental question Kirk and Huish raise has resonance for Barbados and the broader Anglophone Caribbean: Can other health systems in the Americas benefit from approaching transgender issues as health issues? This health-focused approach emphasizes the importance of evidence-based policy and practice. In that context, the attitudes of future practitioners have exceptional importance to inform medical training, on which the design of gender-affirming health systems and the quality of transgender care provided by future doctors are predicated. These efforts support emerging inclusion of transgender needs in comprehensive national health policy frameworks, for example in Jamaica (UNAIDS, 2021). The need for competent and caring healthcare providers for transgender patients is clear, and efforts to train skilled and compassionate clinicians are urgently needed.

Author contributions All authors contributed to the study conception and design. Material preparation and data collection were performed by Michael Campbell, Maisha Emmanuel, and Arianne Harvey. Data analysis was performed by Jill Gromer and Michael Campbell. The first draft of the manuscript was written by Michael Campbell and Jill Gromer, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

Funding This research was unfunded.

Declarations

Conflicts of interest The authors declare that they have no conflicts of interest. This study received prior approval from national Research Ethics Committee with jurisdiction and was conducted in accordance with Declaration of Helsinki and subsequent amendments. Informed consent was obtained from all individual participants included in this study.

Data Availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

References

Alessi, E. J., Kahn, S., & Chatterji, S. (2016). "The darkest times of my life": Recollections of child abuse among forced migrants persecuted because of their sexual orientation and gender identity. *Child Abuse & Neglect, 51*, 93–105. https://doi.org/10.1016/j.chiabu.2015.10.030

American Psychological Association. (2015). Guidelines for psychological practice with transgender and gender nonconforming people. *American Psychologist, 70*(9), 832–864. https://doi.org/10.1037/a0039906

Billard, T. J. (2018). Attitudes toward transgender men and women: Development and validation of a new measure. *Frontiers in Psychology, 9*, 387. https://doi.org/10.3389/fpsyg.2018.0038

Braun, H. M., Garcia-Grossman, I. R., Quiñones-Rivera, A., & Deutsch, M. B. (2017). Outcome and impact evaluation of a transgender health course for health profession students. *LGBT Health, 4*(1), 55–61. https://doi.org/10.1089/lgbt.2016.0119

Brown, S., Kucharska, J., & Marczak, M. (2018). Mental health practitioners' attitudes towards transgender people: A systematic review of the literature. *International Journal of Transgenderism, 19*(1), 4–24. https://doi.org/10.1080/15532739.2017.1374227

Budhwani, H., Hearld, K. R., Hasbun, J., Charow, R., Rosario, S., Tillotson, L., McGlaughlin, E., & Waters, J. (2017a). Transgender female sex workers' HIV knowledge, experienced stigma, and condom use in the Dominican Republic. *PLoS ONE, 12*(11), e0186457. https://doi.org/10.1371/journal.pone.0186457

Budhwani, H., Hearld, K. R., Milner, A. N., Charow, R., McGlaughlin, E. M., Rodriguez-Lauzurique, M., & Paulino-Ramirez, R. (2018). Transgender women's experiences with stigma, trauma, and attempted suicide in the Dominican Republic. *Suicide & Life-Threatening Behaviour, 48*(6), 788–796. https://doi.org/10.1111/sltb.12400

Budhwani, H., Hearld, K. R., Milner, A. N., McGlaughlin, E., Charow, R., Rodriguez-Lauzurique, R. M., Rosario, S., & Paulino-Ramirez, R. (2017b). Transgender women's drug use in the Dominican Republic. *Transgender Health, 2*(1), 188–194. https://doi.org/10.1089/trgh.2017.0032

Church decries LGBT agenda. (2018). *Barbados Advocate.* https://www.barbadosadvocate.com/news/church-decries-lgbt-agenda

Connolly, M. D., Zervos, M. J., Barone, C. J., Johnson, C. C., & Joseph, C. L. (2016). The mental health of transgender youth: Advances in understanding. *Journal of Adolescent Health, 59*(5), 489–495. https://doi.org/10.1016/j.jadohealth.2016.06.012

Eriksson, E. S., & Safer, J. (2016). Evidence-based curricular content improves student knowledge and changes attitude towards transgender medicine. *Endocrine Practice, 22*(7), 837–841. https://doi.org/10.4158/EP151141.OR

Evens, E., Lanham, M., Santi, K., Cooke, J., Ridgeway, K., Morales, G., Parker, C., Brennan, C., de Bruin, M., Desrosiers, P. C., Diaz, X., Drago, M., McLean, R., Mendizabal, M., Davis, D., Hershow, R. B., & Dayton, R. (2019). Experiences of gender-based violence among female sex workers, men who have sex with men, and transgender women in Latin America and the Caribbean: A qualitative study to inform HIV programming. *BMC International Health and Human Rights, 19*(1), 9. https://doi.org/10.1186/s12914-019-0187-5

Fisher, A. D., Castellini, G., Ristori, J., Casale, H., Giovanardi, G., Carone, N., Fanni, E., Mosconi, M., Ciocca, G., Jannini, E. A., Ricca, V., Lingiardi, V., & Maggi, M. (2017). Who has the worst attitudes toward sexual minorities? Comparison of transphobia and homophobia levels in gender dysphoric individuals, the general population and health care providers. *Journal of Endocrinological Investigation, 40*(3), 263–273. https://doi.org/10.1007/s40618-016-0552-3

García-Acosta, J. M., Castro-Peraza, M. E., Perestelo-Pérez, L., Rivero-Santana, A., Arias-Rodríguez, Á., & Lorenzo-Rocha, N. D. (2020). Measuring prejudice and transphobia in nursing students and professionals. *Nursing Reports, 10*(2), 48–55. https://doi.org/10.3390/nursrep10020008

Gebre, Y., Forbes, N. M., & Peters, A. (2016). Review of HIV treatment progress, gaps, and challenges in the Caribbean, 2005–2015. *Revista Panamericana de Salud Pública., 40*(6), 468–473. https://iris.paho.org/handle/10665.2/33667

Gonzales, G., & Henning-Smith, C. (2017). Barriers to care among transgender and gender nonconforming adults. *Milbank Quarterly, 95*(4), 726–748. https://doi.org/10.1111/1468-0009.12297

Green, R., & Money, J. (Eds.). (1969). *Transsexualism and sex reassignment*. The Johns Hopkins University Press.

Green, R., Stoller, R. J., & MacAndrew, C. (1966). Attitudes toward sex transformation procedures. *Archives of General Psychiatry, 15*(2), 178–182. https://doi.org/10.1001/archpsyc.1966.01730140066011

Gromer, J., Campbell, M. H., Gomory, T., & Maynard, D.-M.B. (2013). Sexual prejudice among Barbadian university students. *Journal of Gay and Lesbian Social Services, 25*(4), 399–419. https://doi.org/10.1080/10538720.2013.834808

Hamilton, A., Shin, S., Taggart, T., Whembolua, G. L., Martin, I., Budhwani, H., & Conserve, D. (2020). HIV testing barriers and intervention strategies among men, transgender women, female sex workers and incarcerated persons in the Caribbean: A systematic review. *BMJ Sexually Transmitted Infections, 96*, 189–196. https://doi.org/10.1136/sextrans-2018-053932

Hearld, K. R., Milner, A. N., Budhwani, H., Abreau, N., Rodriguez-Lauzurique, R. M., Charow, R., & Paulino-Ramirez, R. (2019). Alcohol use, high risk behaviors, and experiences of discrimination among transgender women in the Dominican Republic. *Substance Use & Misuse, 54*(10), 1725–1733. https://doi.org/10.1080/10826084.2019.1608253

Herek, G. (2016). A nuanced view of stigma for understanding and addressing sexual and gender minority health disparities. *LGBT Health, 3*(6), 212–222. https://doi.org/10.1089/lgbt.2016.0154

IBM Corp. (2017). *IBM SPSS statistics for windows, version 25.0*. IBM Corp.

Kanamori, Y., Cornelius-White, J. H. D., Pegors, T. K., Daniel, T., & Hulgus, J. (2017). Development and validation of the Transgender Attitudes and Beliefs Scale. *Archives of Sexual Behavior, 46*, 1503–1515. https://doi.org/10.1007/s10508-016-0840-1

King, W. M., Hughto, J. M. W., & Operario, D. (2020). Transgender stigma: A critical scoping review of definitions, domains and measures used in empirical research. *Social Science & Medicine, 250*, 112867. https://doi.org/10.1016/j.socscimed.2020.112867

Kirk, E. J., & Huish, R. (2018). Transsexuals' right to health? A Cuban case study. *Health and Human Rights, 20*(2), 215–222.

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.

Korpaisarn, S., & Safer, J. D. (2018). Gaps in transgender medical education among healthcare providers: A major barrier to care for transgender persons. *Reviews in Endocrine and Metabolic Disorders, 19*, 271–275. https://doi.org/10.1007/s11154-018-9452-5

Landis, R. C., Abayomi, E. A., Bain, B. C., Greene, E., Janossy, G., Joseph, P., Kerrigan, D., McCoy, J. P., Nunez, C., O'Gorman, M., Pastoors, A., Parekh, B. S., Quimby, K. R., Robertson, K. R., Thomas, R., van Gorp, E., Vermund, S. H., & Wilson, V. (2018). Shifting the HIV paradigm from care to cure: Proceedings from the Caribbean expert summit in Barbados, August 2017. *AIDS Research and Human Retroviruses, 34*(7), 561–569. https://doi.org/10.1089/aid.2017.0310

Lanham, M., Ridgeway, K., Dayton, R., Castillo, B. M., Brennan, C., Davis, D. A., Emmanuel, D., Morales, G. J., Cheririser, C., Rodriguez, B., Cooke, J., Santi, K., & Evens, E. (2019). "We're going to leave you for last, because of how you are": Transgender women's experiences of gender-based violence in healthcare, education, and police encounters in Latin America and the Caribbean. *Violence and Gender, 6*(1), 37–46. https://doi.org/10.1089/vio.2018.0015

Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology, 27*, 363–385. https://doi.org/10.1146/annurev.soc.27.1.363

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association, 83*(404), 1198–1202. https://doi.org/10.1080/01621459.1988.10478722

Logie, C. H., Lacombe-Duncan, A., Brien, N., Jones, N., Lee-Foon, N., Levermore, K., Marshall, A., Nyblade, L., & Newman, P. A. (2017a). Barriers and facilitators to HIV testing among young men who have sex with men and transgender women in Kingston, Jamaica: A qualitative study. *Journal of the International AIDS Society, 20*(1), 21385. https://doi.org/10.7448/IAS.20.1.21385

Logie, C. H., Lacombe-Duncan, A., Kenny, K. S., Levermore, K., Jones, N., Marshall, A., & Newman, P. A. (2017b). Associations between police harassment and HIV vulnerabilities among men who have sex with men and transgender women in Jamaica. *Health and Human Rights, 19*(2), 147–154.

Logie, C. H., Lacombe-Duncan, A., Wang, Y., Jones, N., Levermore, K., Neil, A., Ellis, T., Bryan, N., Harker, S., Marshall, A., & Newman, P. A. (2016). Prevalence and correlates of HIV infection and HIV testing among transgender women in Jamaica. *AIDS Patient Care and STDs, 30*(9), 416–424. https://doi.org/10.1089/apc.2016.0145

Luz, P. M., Veloso, V. G., & Ginsztejn, B. (2019). The HIV epidemic in Latin America: Accomplishments and challenges on treatment and prevention. *Current Opinion in HIV and AIDS, 14*(5), 366–373. https://doi.org/10.1097/COH.0000000000000564

Malta, M., Cardoso, R., Montenegro, L., de Jesus, J. G., Seixas, M., Benevides, B., das DoresSilva, M., LeGrand, S., & Whetten, K. (2019). Sexual and gender minorities rights in Latin America and the Caribbean: A multi-country evaluation. *BMC International Health and Human Rights, 19*(1), 31. https://doi.org/10.1186/s12914-019-0217-3

Martinez-Velez, J. J., Melin, K., & Rodriguez-Diaz, C. E. (2019). A preliminary assessment of selected social determinants of health in a sample of transgender and gender nonconforming individuals in Puerto Rico. *Transgender Health, 4*(1), 9–17. https://doi.org/10.1089/trgh.2018.0045

Massiah, E., Roach, T. C., Jacobs, C., St. John, A. M., Inniss, V., Walcott, J., & Blackwood, C. (2004). Stigma, discrimination, and HIV/AIDS knowledge among physicians in Barbados. *Revista Panamericana de Salud Pública, 16*(6), 395–401. https://doi.org/10.1590/s1020-49892004001200005

Morgan, H., Lamprinakou, C., Fuller, E., & Albakri, M. (2020). *Attitudes to transgender people* [White paper]. Equality and Human Rights Commission.

Morrison, M. A., Bishop, C. J., Gazzola, S. B., McCutcheon, J. M., Parker, K., & Morrison, T. (2017). Systematic review of the psychometric properties of transphobia scales. *International Journal of Transgenderism, 18*(4), 395–410. https://doi.org/10.1080/15532739.2017.1332535

Noonan, E. J., Sawning, S., Combs, R., Weingartner, L. A., Martin, L. J., Jones, V. F., & Holthauser, A. (2018). Engaging the transgender community to improve medical education and prioritize healthcare initiatives. *Teaching and Learning in Medicine, 30*(2), 119–132. https://doi.org/10.1080/10401334.2017.1365718

Obedin-Maliver, J., Goldsmith, E. S., Stewart, L., White, W., Tran, E., Brenman, S., Wells, M., Fetterman, D. M., Garcia, G., & Lunn, M. R. (2011). Lesbian, gay, bisexual, and transgender–related content in undergraduate medical education. *Journal of the American Medical Association, 306*(9), 971–977. https://doi.org/10.1001/jama.2011.1255

Pan American Health Organization [PAHO], John Snow, Inc., World Professional Association for Transgender Health, et al. (2014). *Blueprint for the provision of comprehensive care for trans persons and their communities in the Caribbean and other Anglophone countries.* Arlington, VA: John Snow, Inc. https://iris.paho.org/handle/10665.2/31360

Park, J. A., & Safer, J. D. (2018). Clinical exposure to transgender medicine improves students' preparedness above levels seen with didactic teaching alone: A key addition to the Boston University Model for teaching transgender healthcare. *Transgender Health, 3*(1), 10–16. https://doi.org/10.1089/trgh.2017.0047

Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review, 41*, 71–90. https://doi.org/10.1016/j.dr.2016.06.004

Rambarran, N., & Grenfell, P. (2016). An exploration of the perspectives and experiences of general practitioners in Barbados in relation to lesbian, gay, bisexual, and transgender (LGBT) patients in Barbados. *International Journal of Sexual Health, 28*(4), 325–331. https://doi.org/10.1080/19317611.2016.1223255

Rutledge, S. E., & Abell, N. (2005). Awareness, acceptance, and action: An emerging framework for understanding AIDS stigmatizing attitudes among community leaders in Barbados. *AIDS Patient Care and STDs*, *19*, 186–199. https://doi.org/10.1089/apc.2005.19.186

Sanchez, N. F., Sanchez, J. P., & Danoff, A. (2009). Health care utilization, barriers to care, and hormone usage among male-to-female transgender persons in New York City. *American Journal of Public Health, 99*(4), 713–719. https://doi.org/10.2105/AJPH.2007.132035

Satorra, A., & Bentler, P. M. (1994). Corrections to test statistics and standard errors in covariance structure analysis. In A. von Eye & C. C. Clogg (Eds.), *Latent variables analysis: Applications for developmental research* (pp. 399–419). Sage.

Sawning, S., Steinbock, S., Croley, R., Combs, R., Shaw, A., & Ganzel, T. (2017). A first step in addressing medical education curriculum gaps in lesbian-, gay-, bisexual-, and transgender-related content: The University of Louisville Lesbian, Gay, Bisexual, and Transgender Health Certificate Program. *Education for Health, 30*(2), 108–114. https://doi.org/10.4103/efh.EfH_78_16

Stafford, M. (2018). *Millennial attitudes toward transgender individuals* [Paper presentation]. UNC Asheville Undergraduate Neuroscience Research Symposium, Asheville, NC. https://doi.org/10.13140/RG.2.2.24107.18724

Tebbe, E. A., Moradi, B., & Ege, E. (2014). Revised and abbreviated forms of the Genderism and Transphobia Scale: Tools for assessing anti-trans prejudice. *Journal of Counseling Psychology, 61*(4), 581–592. https://doi.org/10.1037/cou0000043

UNAIDS. (2021). *First-ever Jamaica transgender strategy looks beyond health.* https://www.unaids.org/en/resources/presscentre/featurestories/2021/january/20210108_first-ever-jamaica-transgender-strategy-looks-beyond-health

Vance, S., Deutsch, M., Rosenthal, S., & Buckelew, S. (2017). Enhancing pediatric trainees' and students' knowledge in providing care to transgender youth. *Journal of Adolescent Health, 60*(4), 425–430. https://doi.org/10.1016/j.jadohealth.2016.11.020

Wedderburn, F. (2018). Time to stop the discrimination against LGBT, Anglican cleric says. *Barbados Today*. Retrieved from http://barbadostoday.bb

West, K. (2018). Understanding and reducing sexual prejudice in Jamaica: Theoretical and practical insights from a severely anti-gay society. *Journal of Sex Research, 55*(4/5), 472–485. https://doi.org/10.1080/00224499.2017.1416055

Zalla, L. C., Herce, M. E., Edwards, J. K., Michel, J., & Weir, S. S. (2019). The burden of HIV among female sex workers, men who have sex with men and transgender women in Haiti: Results from the 2016 Priorities for Local AIDS Control Efforts (PLACE) study. *Journal of the International AIDS Society, 22*(7), e25281. https://doi.org/10.1002/jia2.25281