ABSTRACT

Objective The number of transgender and gender non-conforming children is on the rise. For these children, the timing of medical intervention is crucial, yet transgender children report poorer overall physical and mental health outcomes compared with their cisgender peers. We aim to describe how paediatricians perceive transgender people.

Setting The ‘Transgender Attitudes and Beliefs Scale’, which consists of 29 items in three domains—human value, interpersonal comfort and sex/gender beliefs—was administered to 391 senior and resident paediatricians in Israel. The responses on a 7-point Likert scale were collapsed into two categories: a mean score of ≥6 for each domain was a ‘Favourable’ perception and <6 ‘Unfavourable’.

Results Of 355 respondents (91% response rate), 221 (62%) were females, 132 (37%) were males and 2 identified as ‘other’; 290 (82%) were born in ‘trans-respect countries’, 274 (77%) identified as secular, 223 (63%) were senior physicians and 132 (27%) were residents. Overall, 90% of the cohort scored favourably on the ‘Human value’ domain, 68% on ‘Interpersonal comfort’ and 40% on ‘Sex/gender beliefs’. In the ‘Interpersonal comfort’ domain, being a man, birthplace in a transphobic country, identification as religious and being a senior physician were all associated with increased ORs for an unfavourable score: 2.1 (95% CI 1.3 to 3.4), 3.4 (95% CI 1.9 to 6.3), 2.4 (95% CI 1.4 to 4.2) and 1.8 (95% CI 1.1 to 3.0), respectively. In the ‘Sex/gender beliefs’ domain, being a man and identifying as religious had significantly increased ORs for unfavourable scores: 2.2 (95% CI 1.3 to 3.5) and 10.6 (95% CI 4.7 to 24.1), respectively.

Conclusions Negative attitudes towards transgender people are still widespread among paediatricians. Interventions are warranted to positively impact these attitudes.

INTRODUCTION

Transgender is a term used to describe persons whose gender identity does not conform to the one assigned to them at birth. In the past decade, the medical community has turned a spotlight on the paediatric transgender population, in an attempt to remove barriers that may preclude proper care.1 Paediatricians, who are on the front lines of this revolution, are becoming key figures for transgender and gender non-conforming (TGNC) children and youth. First, accumulating evidence shows that the number of TGNC children is higher than previously thought.2–4 According to a recent US population-based study, 2.7% of teenagers in grades 9–11 self-defined as transgender.5 These children increasingly seek medical aid or advice from their paediatricians.1

Second, for the children who seek medical intervention, time is in the essence, as current standard of care ‘puberty blockers’ should be given at the onset of puberty.6 Studies from the USA and the Netherlands demonstrated drastically reduced risk for added comorbidities following treatment, as well as improved physical and psychological outcomes.7–9 Thus, it is unfortunate that data also show that most children who were referred for treatment were in fact older than the optimal age for intervention at presentation.10 Moreover, even the establishment of a multidisciplinary gender clinic did not lead to a significant change in the age at presentation.11

Finally, transgender children report poorer overall physical and mental health outcomes compared with their cisgender peers, with greater prevalence of depression, anxiety, self-mutilation, substance abuse and suicide attempts.2 5 11 Yet psychopathology is not inevitable within this group; transgender
children who are supported in their gender identity have been shown to have developmentally normative levels of depression and only minimal elevations in anxiety. As the first medical provider that transgender youth and their families generally encounter, the paediatrician has a critical role in supporting social transition and affirmation, and in coordinating appropriate referrals and follow-up. Recent years have attested to increasing public awareness regarding gender identity. Further, a policy statement issued by the Endocrine Society provides guidance for clinicians according to a gender-affirming approach. Nonetheless, almost one-third of transgender people who responded to the US National Transgender Discrimination Survey reported harassment in medical settings. Similar numbers were reported by LGBT (lesbian, gay, bisexual and transgender) parents seeking care for their children.

Stigma can be defined as a set of negative beliefs about a group of people and may result in discriminatory behaviour. Physicians' stigma has long been established as a factor that can affect patient care and even reduce the intention to treat. Still, few studies to date have assessed physicians' attitudes towards TGNC, and paediatricians' attitudes have not been reported.

We sought to describe paediatricians' attitudes towards transgender people and to assess whether certain demographic and occupational characteristics of paediatricians are associated with more negative perceptions. Based on prior research, we hypothesised that females, physicians born in transrespect countries, those who did not identify as religious and resident physicians would have higher scores (figure 1).

**Methods**

**Study design and participants**

In a cross-sectional survey, paediatricians were approached randomly at two semiannual paediatric assemblies, at seven hospitals and in five community clinics in Israel. At all locations, paediatrician identity was verified using a nametag or employee card, and the last four digits of the national personal identity number were recorded to avoid duplications. Consent was obtained, and participation was elective and anonymous.

A total of 391 physicians were approached between July 2017 and July 2018. After data screening, 368 participated. The final study cohort comprised 355 paediatricians, as 13 failed to fill the full questionnaire.

**Patient and public involvement**

Patients and the public were not involved in this study. Only paediatricians participated in the study, and the results were presented in the annual paediatricians’ meeting in Israel.

**Materials**

The previously validated ‘Transgender Attitudes and Beliefs Scale’ (TABS) questionnaire was chosen as the instrument for this study. TABS has demonstrated particular ability in capturing attitudes to transgender, compared with other scales that have been administered to medical personnel. Detailed information about validation of the questionnaire has been reported elsewhere. TABS consists of 29 items in three domains: (1) ‘Human values’ domain (5 items), which assesses an individual’s inherent value, for example ‘Transgender individuals are valuable human beings regardless of how I feel about transgenderism’; (2) ‘Interpersonal comfort’ domain (14 items), which measures the respondent’s level of comfort in daily interactions with transgender people, for example ‘If I were introduced to a transgender person at a party, I would feel comfortable having a polite conversation with that person’; and (3) sex and gender beliefs domain (10 items), which assesses underlying beliefs in regard to gender, for example ‘A person who is not sure about being a man or woman is mentally ill’.

Responses on TABS were rated on a 7-point Likert scale for each item, and ranged between 1 ‘strongly disagree’ and 7 ‘strongly agree’. To minimise bias, the questionnaire includes a mix of positively and negatively stated items; negatively stated items were coded as ‘R’, and their scores were later analysed in reverse. Higher scores indicate positive perceptions. The possible raw ranges of each of the domains of the questionnaire are 5–35 for human values, 14–98 for interpersonal comfort and 10–70 for sex and gender beliefs.

The TABS questionnaire was translated according to the guidelines for translating and adapting tests issued by the International Test Commission.

In addition to the questionnaire, demographic occupational details were reported by the participants. The

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**Figure 1** Conceptual model of hypothesised relationships between the outcome and predictor variables. This model, based on the literature, was used in the construction of the regression models. We hypothesised that females physicians born in transrespect countries, those who did not identify as religious and resident physicians would have higher scores in all domains. A hierarchically arranged continuum was observed in which all the variables examined were associated with high scores of human values and lower scores on interpersonal comfort. Regarding the beliefs domain, no differences were observed between resident and senior physicians, and between those working in academic versus non-academic set-ups. Being a man, individuals who identified as being religious and those born in transphobic countries had higher ORs. Due to the cross-sectional design of the study, causality cannot be inferred from the results.
details recorded were gender (‘Males’, ‘Females’ or ‘Other’); birth country as an open-ended question; religious identification as ‘Secular’ or ‘Religious’; seniority as ‘Senior paediatrician’ (a physician who passed the postgraduate examinations in paediatrics) or ‘Resident’ (a physician who is under postgraduate training in the field of paediatrics); and the location of their primary practice as ‘Community clinic’ or ‘Hospital’ (for senior physicians only).

Data analysis

According to currently accepted guidelines for analysing data of Likert-type scales, differences between responses should not be assumed to be equidistant. Paediatricians’ answers, given on a 7-point Likert scale, were collapsed into two categories: an equivalent of mean ≥6 for a specific domain was considered a favourable perception. Lower scores (<6) were categorised as ‘Unfavourable’.

Paediatrician origin was categorised according to ‘Trans-respect’ versus ‘Trans-phobic’ birth country to assess the effect of cultural background on perceptions. The categorisation was delineated in the updated ‘Legal and Social Map’ issued by the organisation, Transgender Europe, and is based on political processes, and legal and social practices that concern transgender. For example, the USA, most European countries and Israel are considered as ‘Trans-respecting’ because of legal recognition for gender change, antidiscrimination legislation and trans-specific healthcare services.

Statistical analyses

Statistical analyses were performed using SAS V.9.4. Descriptive statistics are presented as numbers (percentages) and median and IQR values. Univariate analysis was used to determine the relations between demographic groups and scale scores. The scales were analysed both as a continuous score and according to dichotomous categories: interpersonal comfort (below 84, greater or equal to 84), sex and gender beliefs (below 60, greater or equal to 60) and human value (below 30, greater or equal to 30). Scores using the continuous scales did not follow a normal distribution, and therefore were reported by median and IQR, and compared using the two-sample Wilcoxon test or Kruskal-Wallis test according to the number of groups compared. Categorical variables were reported by their relative frequencies and compared by the Pearson’s \( \chi^2 \) test. When results of the overall test were statistically significant, pairwise comparisons were performed. The Bonferroni method for adjustment of significance level was used. Spearman coefficients were calculated to examine the associations between the scales.

Multivariate logistic regressions were applied to the data to identify the significant independent predictors of the below-threshold values of each of the three scales. The predictors in each regression were sex, secular (yes vs no), seniority (yes vs no) and birthplace. A p value of 0.05 was considered significant.

RESULTS

The study cohort comprised 355 paediatricians, 221 (62%) were females, 135 (37%) were males and 2 ‘others’; 290 (82%) were born in ‘trans-respect’ countries, 274 (77%) defined themselves as secular and 132 (37%) were residents. Of the 223 (63%) senior paediatricians, 124 (56%) worked mainly in hospitals and 102 (44%) mainly in community practice clinics. The median age of the participants was 40 years (IQR 33–54).

The Cronbach’s alpha for the humanity subscale was 0.89, for the sex and gender beliefs subscale 0.87 and for interpersonal comfort 0.92. These values indicate excellent internal consistency in all subscales. For each of the three domains (human value, interpersonal comfort and sex/gender beliefs), scores were significantly higher for females than males, for secular than religious, and for respondents born in transrespect compared with transphobic countries (table 1). For the domain of interpersonal comfort, but not for the other two domains, residents scored significantly higher than senior physicians.

Overall, 90% of the paediatricians scored favourably (mean score ≥6) on the human values domain, 68% on the interpersonal comfort domain and only 40% on the sex/gender beliefs domain.

Subsequent analysis characterised the paediatricians who scored unfavourably (table 2). The characteristics that were found statistically significant on univariate analysis and were subsequently included in the multivariate model were being a man, ‘transphobic’ birthplace, religious identification and being a senior physician. These all increased the OR for an unfavourable score, for both the interpersonal comfort domain and the sex/gender beliefs domain. These trends were also observed among the senior physicians, between those working in the community and those working in hospitals. Since only 10% held ‘unfavourable’ attitudes regarding the human values domain, further analysis was not done regarding this scale.

In the multivariate analysis (table 3, figure 2A–D) of the interpersonal comfort domain, ORs for an unfavourable response were 2.1 (95% CI 1.3 to 3.4) for males versus females; 3.4 (95% CI 1.9 to 6.3) for respondents born in transphobic versus transrespect countries, 2.4 (95% CI 1.4 to 4.2) for religious versus secular identification, and 1.8 (95% CI 1.1 to 3.0) for senior versus resident paediatricians. In a subanalysis of senior paediatricians, no statistically significant difference was found between those working primarily in the community versus hospitals; the OR of an unfavourable response was 1.7 (95% CI 0.97 to 3.14) for mainly community versus mainly hospital paediatricians.

For the sex and gender beliefs domain, the OR for an unfavourable response was 2.2 (95% CI 1.3 to 3.5) for males versus females, 1.7 (95% CI 0.9 to 3.3) for being born in a transphobic versus transrespect country, 10.6 (95% CI 4.7 to 24.1) for religious versus secular paediatricians, and 1.5 (95% CI 0.9 to 2.4) for senior versus resident paediatricians. In a subanalysis of senior paediatricians,
**DISCUSSION**

In this study of attitudes towards transgender people, 90% of paediatricians acknowledged the universal human value of transgender people, yet only two-thirds reported that they would feel comfortable interacting with transgender people, and most paediatricians displayed negative underlying sex/gender beliefs in regard to transgender. Additionally, certain characteristics of the respondents significantly increased the probability of having unfavourable perceptions: being a man, birthplace in a transphobic country, religious identification and being a senior physician rather than a resident physician increased the probability of not feeling ‘interpersonal comfort’ in relation to transgender people. Being a man and religious identification increased the probability of having negative sex and gender beliefs.

We presume that the interpersonal comfort domain in the context of this study reflects interactions during medical encounters behind closed doors. Considerable previous works assessed interactions from a transgender point of view\textsuperscript{14,23} or by LGBT parents,\textsuperscript{15} and thus provide indirect measurements of physicians’ degree of comfort. Our work is the first to directly assess the paediatricians’ degree of comfort and may explain the results of previous indirect findings.

The sex/gender beliefs domain of the TABS reflects convictions that are held to be true without empirical evidence. Sixty per cent of the paediatricians in the current study expressed stigma regarding gender fluidity, despite the fact that only one-third reported they would feel interpersonal discomfort. This is an important distinction and may result in oblivious discrimination against transgender children.

Among paediatricians, the OR for males to feel less at ease when interacting with transgender persons and for having negative gender beliefs was twofold higher than for females. These findings corroborate data of a previous study of paediatricians that showed that women engage in significantly more active partnership behaviours, positive talk, psychosocial counselling, psychosocial question-asking and emotionally focused talk than do male physicians.\textsuperscript{24} It has also been suggested that men are more invested than women in adhering to gender norms because they serve to affirm their own masculinity.\textsuperscript{25,26}

Paediatricians born in ‘transphobic’ rather than ‘trans- respect’ countries expressed less comfort in interacting with transgender people. Although we did not assess the number of years since immigration to Israel, data suggest that immigrants tend to retain certain patterns of their old culture, if only in part, due to a desire to preserve their former identity and the need for a sense of

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**Table 1** Median values and ranges of scores on the Transgender Attitudes and Beliefs Scale, according to characteristics of respondents

| Characteristics | n (%) | Interpersonal comfort (14–98) | Sex/gender beliefs (10–70) | Human value (5–35) |
|-----------------|-------|------------------------------|---------------------------|--------------------|
| **All**         | 355 (100) | 86 (75–94) | 57 (46–64) | 35 (34–35) |
| **Gender**      |       |                             |                           |                    |
| Females        | 221 (63) | 89 (78–95) | 59 (50–64) | 35 (35–35) |
| Males          | 132 (37) | 82 (64–92) | 53 (42–61) | 35 (31–35) |
| **P value**    |       | <0.001 | <0.001 | <0.001 |
| **Religiosity**|       |                             |                           |                    |
| Secular        | 274 (77) | 89 (77–95) | 59 (52–64) | 35 (35–35) |
| Religious      | 81 (23) | 80 (59–88) | 44 (33–53) | 35 (30–35) |
| **P value**    |       | <0.001 | <0.001 | <0.001 |
| **Birth country** |     |                             |                           |                    |
| Transrespect   | 290 (82) | 88 (78–95) | 58 (49–64) | 35 (35–35) |
| Transphobic    | 65 (18) | 76 (60–87) | 48 (40–61) | 34 (29–35) |
| **P value**    |       | <0.001 | <0.001 | <0.001 |
| **Experience** |       |                             |                           |                    |
| Senior physician | 223 (63) | 84 (71–93) | 56 (45–63) | 35 (33–35) |
| Resident       | 132 (37) | 90 (80–95) | 58 (47–64) | 35 (35–35) |
| **P value**    | 0.001 | 0.13 | 0.037 |

*The categories of ‘Trans-respect’ vs ‘Trans-phobic’ are based on political processes, and legal and social practices that concern transgender.*
Table 2  Responses of paediatricians to two domains of the Transgender Attitudes and Beliefs Scale, according to demographic characteristics

| Variable                  | Interpersonal comfort, n (%) | Sex/gender beliefs, n (%) |
|---------------------------|------------------------------|---------------------------|
|                           | Unfavourable (n=150)         | Favourable (n=205)        | Unfavourable (n=213) | Favourable (n=142) |
| Gender                    |                              |                           |                      |
| Females (n=221)           | 76 (34)                      | 145 (66)                  | 117 (53)             | 104 (47)           |
| Males (n=132)             | 73 (55)                      | 59 (45)                   | 95 (72)              | 37 (28)            |
| P value                   | <0.001                       | <0.001                    |                      |
| Birth country             |                              |                           |                      |
| Transrespect (n=290)      | 106 (37)                     | 184 (63)                  | 167 (58)             | 123 (32)           |
| Transphobic (n=65)        | 43 (66)                      | 21 (44)                   | 46 (71)              | 19 (29)            |
| P value                   | <0.001                       | 0.06                      |                      |
| Religiosity               |                              |                           |                      |
| Secular (n=274)           | 103 (38)                     | 171 (62)                  | 139 (51)             | 135 (49)           |
| Religious (n=81)          | 47 (58)                      | 34 (42)                   | 74 (91)              | 7 (9)              |
| P value                   | 0.001                        | <0.001                    |                      |
| Experience                |                              |                           |                      |
| Residents (n=132)         | 40 (30)                      | 92 (70)                   | 69 (52)              | 63 (48)            |
| Seniors (n=223)           | 110 (49)                     | 113 (51)                  | 144 (65)             | 79 (35)            |
| P value                   | <0.001                       | 0.022                     |                      |
| Location of primary practice for senior paediatricians (n=219) |                              |                           |                      |
| Hospital (n=124)          | 50 (40)                      | 74 (60)                   | 75 (60)              | 49 (40)            |
| Community (n=95)          | 56 (59)                      | 39 (41)                   | 66 (69)              | 29 (31)            |
| P value                   | <0.01                        | 0.17                      |                      |

Responses of ≥6 on a 7-point Likert scale were considered ‘favourable’. Responses of <6 were considered ‘unfavourable’.

continuity. However, an important finding of this study is that unfavourable sex/gender beliefs were high in ‘transphobic’ and in ‘trans-respect’ groups, with no significant difference. While research has shown that contact and exposure in a variety of cultural dimensions positively correlate with more favourable attitudes towards a person with whom contact is made, our data suggest that educational programmes are needed irrespective of place of birth.

Religiosity, defined by self-identification, was associated with a twofold increased risk of being uncomfortable with transgender people and a tenfold increased risk of having stigmatising gender beliefs. This concurs with previous studies that showed a lack of openness towards gender fluidity among religious physicians and healthcare staff. Most religions still hold traditional fixed beliefs in regard to gender. Other studies reported correlations of increased religiosity with more negative attitudes towards transgender persons. A systematic review reported evidence of a consistent association of self-religious identification with more negative attitudes towards transgender people and higher levels of transphobia.

Senior physicians expressed greater feelings of discomfort with transgender people than did residents. However, similar to the characteristics of cultural background, unfavourable sex/gender beliefs were high in both groups according to seniority, with no statistically significant difference between them. Previous studies revealed conflicting results regarding a correlation between younger age and more favourable attitudes. The ‘generational replacement’ hypothesis suggests that attitudes change due to younger generations growing up in a more open and accepting atmosphere, and that this, together with generation replacement, is a core tenet in attitude change. Accordingly, resident physicians in the USA, in contrast to senior physicians, showed more tolerant attitudes regarding various issues, such as substance abuse. However, the findings of the current study suggest that negative sex/gender beliefs are more persistent than feelings of discomfort in interrelating with transgender persons.
Table 3  Multivariate analysis of an overall unfavourable (<6) vs favourable (≥6) response on two domains of the Transgender Attitudes and Beliefs Scale score, according to characteristics of respondents

| Effect             | Interpersonal comfort | Sex/gender beliefs |
|--------------------|-----------------------|--------------------|
|                    | OR (95% CI)           | P value            | OR (95% CI) | P value |
| Gender             |                       |                    |            |        |
| Males              | 2.1 (1.3 to 3.4)      | 0.0013             | 2.2 (1.3 to 3.5) | 0.0032 |
| Females            | 1                     |                    | 1          |        |
| Birthplace         |                       |                    |            |        |
| Transphobic        | 3.4 (1.9 to 6.3)      | <0.0001            | 1.7 (0.9 to 3.3) | 0.0837 |
| Transrespect       | 1                     |                    | 1          |        |
| Religiosity        |                       |                    |            |        |
| Religious          | 2.4 (1.4 to 4.2)      | 0.0011             | 10.6 (4.7 to 24.1) | <0.0001 |
| Secular            | 1                     |                    | 1          |        |
| Seniority          |                       |                    |            |        |
| Senior             | 1.8 (1.1 to 3.0)      | 0.0139             | 1.5 (0.9 to 2.4) | 0.1331 |
| Resident           | 1                     |                    | 1          |        |

While paediatricians working in hospitals are exposed to an academic environment characterised by openness and progress, they did not express greater comfort in dealing with transgender encounters and did not show less stigmatisation, compared with paediatricians in the community. This finding concurs with a study that concluded that the effectiveness of educational programmes may depend not only on increasing informational knowledge, but also on addressing providers’ biases, and that educational initiatives should consider the backgrounds of the participants, with the aim of directly addressing prejudice and enhancing cultural humility.38

While one-third of all transgender individuals who had seen a healthcare professional in the past year reported being harassed or denied care, less is known about transgender care from the physician’s perspective. Among primary care clinicians and gynaecological healthcare providers, 15%–30% expressed not feeling capable of...
providing care to transgender patients. This is the first study among paediatricians. Discrimination by medical providers has been reported by TGNC people. In a survey of 6450 in the USA, 24% claimed they were denied equal treatment in doctors’ offices and hospitals, and 28% reported verbal harassment in a doctor’s office, emergency room or other medical setting. The greatest barriers to healthcare reported by transgender individuals were lack of providers who are sufficiently knowledgeable on the topic, discrimination and lack of cultural competence by providers. Due to discrimination and disrespect, 28% of adults who identified as transgender persons postponed or avoided medical treatment when they were sick or injured and 33% delayed or did not seek preventive healthcare. Transgender children are an especially vulnerable population still subject to many barriers. Nonetheless, only a limited number of studies investigated perceived barriers to care among transgender children and adolescents. Transgender youth aged 14–22 years described judgemental and hostile clinical interactions, inadequate knowledge and the use of outdated offensive language to treat providers’ ability to deliver gender-affirming care. While several studies investigated attitudes of caregivers such as psychiatrists, perinatal care providers, providers of pharmaceutical care, emergency medicine residents and oncologists, we did not find studies assessing attitudes of paediatricians. Paediatricians are generally the first healthcare worker to see transgender children and their parents and families. Thus, paediatricians have the opportunity to create a safe environment and to be attentive to the needs of children who seek reassurance and education regarding their gender identity. Furthermore, paediatricians are responsible for referring transgender children to puberty suppression, which was demonstrated to reduce the risk of emotional and behavioural problems and to increase functioning. A medical provider lacking the sensitivity and cultural competence to engage a transgender patient, especially a teenager, may miss signs of gender dysphoria and potentially cause harm by saying gender stereotypical things that alienate the patient further. Indeed, physicians’ stigma has long been established as a factor that can affect the provision of care and even reduce the intention to treat. The negative attitudes among paediatricians reported in the current study may affect care. However, elsewhere, such attitudes were shown to be modifiable, using antistigma programming, as has been done with mental illness and HIV. Targeted contact-based interventions have demonstrated particular effectiveness.

This study has some limitations. We used a convenience sample, which raises the possibility of selection bias, as characteristics may have differed between those who agreed and did not agree to participate or to complete the survey. However, only 6% of those approached did not complete the survey, and only 3.5% of those who started the survey did not complete it. Moreover, we would expect that those who completed the survey might have more positive attitudes than those who did not. The TABS questionnaire examines attitudes to ‘transgender people’ in general, and therefore does not necessarily reflect attitudes to transgender children. Negative beliefs may have a complex impact on behaviour, and we only assessed interpersonal comfort; this could portray an oversimplified picture. The lack of information regarding prior medical training and educational exposure of the survey participants is a limitation of this study. In addition, we studied birth country but did not assess the number of years since immigration to Israel. Nevertheless, immigrants tend to retain certain patterns of their old culture, due to a desire to preserve their former identity, if only in part, and the need for a sense of continuity. We set a high standard for favourable attitudes; our cut-off required at least 6 on a 7-point Likert scale. The strengths of this study are the large sample of paediatricians with a high response rate, the use of a previously validated instrument and analysis by characteristics of the respondents.

In summary, an overwhelming majority of paediatricians acknowledged that transgender people should be treated according to basic human values, and most felt they could interact comfortably with transgender people. Nonetheless, the majority of respondents reported negative beliefs regarding transgender people, thus indicating that stigmatisation and prejudice still exist, even among paediatricians. As physicians’ attitudes can affect patient management, and in light of the great importance of proper care by paediatricians for TGNC children and youth, interventions to improve beliefs are warranted.

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REFERENCES

1 Committee on psychosocial aspects of child and family health. Ensuring comprehensive care and support for transgender and Gender-Diverse children and adolescents. Pediatrics 2018;142:pii: e20182162.

2 Spack NP, Edwards-Leeper L, Feldman HA, et al. Children and adolescents with gender identity disorder referred to a pediatric medical center. Pediatrics 2012;129:418–25.

3 Wood H, Sasaki S, Bradley SJ, et al. Patterns of referral to a gender identity service for children and adolescents (1978–2011); age, sex ratio, and sexual orientation. J Sex Med 2013;10:1–6.

4 Butler G, De Graaf N, Wren B, et al. Assessment and support of children and adolescents with gender dysporia. Arch Dis Child 2018;103:archdischild-2018-314992–36.

5 Rider GN, McMorris BJ, Gower AL, et al. Health and care utilization of transgender and gender Nonconforming youth: a population-based study. Pediatrics 2018;141:pii: e20171683.

6 Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of Gender-Dysphoric/Gender-Incongruent persons: an endocrine Society clinical practice guideline. J Clin Endocrinol Metab 2017;102:386–413.

7 de Vries ALC, McGuire JK, Steensma TD, et al. Young adult psychological outcome after puberty suppression and gender reassignment. Pediatrics 2014;134:696–704.

8 de Vries ALC, Steensma TD, Doreleijers TAH, et al. Puberty suppression in adolescents with gender identity disorder: a prospective follow-up study. J Sex Med 2013;10:2276–83.

9 Wallen MSC, Cohen-Kettenis PT. Psychosocial outcome of gender-dysphoric children. J Am Acad Child Adolesc Psychiatry 2006;45:1413–20.

10 Delemarre-van de Waal HA, Cohen-Kettenis PT. Clinical management of gender identity disorder in adolescents: a protocol on psychological and paediatric endocrinology aspects. Eur J Endocrinol 2006;155:S131–7.

11 Reisner SL, Vetter R, White JM, et al. Laboratory-confirmed HIV and sexually transmitted infection seropositivity and risk behavior among sexually active transgender patients at an adolescent and young adult urban community health center. AIDS Care 2015;27:1031–6.

12 Olson KR, Doruwlood L, DeMeules M, et al. Mental health of transgender youth who are supported in their identities. Pediatrics 2016;137:e20153223.

13 Shires DA, Schnaar A, Connolly MD, et al. To refer or not to refer: general pediatricians’ perspectives on their role in caring for transgender youth. Transgend Health 2017;2:202–6.

14 Grant JM, Mottet LA. National transgender discrimination survey report on health and health care, 2010.

15 Shields L, Zappia T, Blackwood D, et al. Lesbian, gay, bisexual, and transgender parents seeking health care for their children: a systematic review of the literature. Worldviews Evid Based Nurs 2012;9:200–4.

16 Kim W-H, Bae J-N, Lim J, et al. Relationship between physicians’ perceived stigma toward depression and physician referral to psycho-oncology services on an oncology/hematology ward. Psychooncology 2018;27:824–30.

17 Link BG, Stigma and discrimination mechanisms require multifaceted responses. Epidemiol Psychiatr Soc 2001;10:8–11.

18 Kanamori Y, Cornelius-White JHD, Pegors TK, et al. Development and validation of the transgender attitudes and beliefs scale. Arch Sex Behav 2017;46:1035–15.

19 Kanamori Y, Cornelius-White JHD. Big changes, but are they big enough? Healthcare professionals’ attitudes toward transgender persons. Int J Transgend 2016;17:165–75.

20 Furer A, Afek A, Orr O, et al. Sex-Specific associations between adolescent categories of BMI with cardiovascular and non-cardiovascular mortality in midlife. Comput Cardiol 2018;17:80.

21 Sullivan GM, Arntz AR. Analyzing and interpreting data from likert-type scales. J Grad Med Educ 2013;5:541–2.

22 Coffee NT, Lockwood T, Hugo G, et al. Relative residential property value as a socio-economic status indicator for health research. Int J Health Geogr 2013;12:22.

23 Bennett E, Berry K, Emoto TI, et al. Attitudes to lesbian, gay, bisexual and transgender parents seeking health care for their children in two early parenting services in Australia. J Clin Nurs 2017;26:1021–30.

24 Roter DL, Hall JA, Aoki Y. Physician gender effects in medical communication: a meta-analytic review. JAMA 2002;288:756–64.

25 Herek GM. On heterosexual masculinity: some psychical consequences of the social construction of gender and sexuality. American Behavioral Scientist 1986;29:563–77.

26 Kimmel MS. Masculinity as homophobia: fear, shame, and silence in the construction of gender identity, race, class, and gender in the United States: an integrated study, 2004; 81–93.

27 Diller JV, Moule J. Cultural competence: a primer for educators. Thomson/Wadsworth, 2005.

28 Ali S. Human rights in the Monotheistic Religions: justification of human rights in the perspective of monotheistic religion according to human rights theories, 2018.

29 Dorson C. An integrative review of nurse attitudes towards lesbian, gay, bisexual, and transgender patients. Can J Nurs Res 2012;44:18–43.

30 Balkin RS, Schlosser LZ, Levitt DH. Religious identity and cultural diversity; exploring the relationships between religious identity, Sexism, homophobia, and multicultural competence. Journal of Counseling Development 2009;87:420–7.

31 Nagoshi JL, Adams KA, Terrell HK, et al. Gender differences in correlates of homophobia and transphobia. Sex Roles 2008;59:521–31.

32 Norton AT, Herek GM. Heterosexuals’ Attitudes Toward Transgender People: Findings from a National Probability Sample of U.S. Adults. Sex Roles 2013:68:738–53.

33 Tee N, Hegarty P. Predicting opposition to the civil rights of trans persons in the United Kingdom. J Community Appl Soc Psychol 2006;16:70–80.

34 Harper GW, Jadhav-Cakmak LA, Popoff E, et al. Transgender and other Gender-Diverse youth’s progression through the HIV continuum of care. Socioecological system barriers. AIDS Patient Care STDs 2019;33:32–43.

35 Flores A. National trends in public opinion on LGBT rights in the United States, 2014.

36 Janmaat JG, Keating A. Are today’s youth more tolerant? Trends in tolerance among young people in Britain. Ethnicities 2017.

37 Saltz R, Friedman PD, Sullivan LM, et al. Professional satisfaction experienced when caring for substance-abusing patients: faculty and resident physician perspectives. J Gen Intern Med 2002;17:373–6.

38 Stroumsa D, Shires DA, Richardson CR, et al. Transphobia rather than education predicts provider knowledge of transgender health care. Med Educ 2019;53:398–407.

39 Shires DA, Prieto L, Woodford MR, et al. Gynecologic health care providers’ willingness to provide routine care and Papanicolaou tests for Transmasculine individuals. J Womens Health 2019;28:1487–92.

40 Shires DA, Stroumsa D, Jaffee KD, et al. Primary care clinicians’ willingness to care for transgender patients. Ann Fam Med 2018;16:555–8.

41 Grant JM, Mottet L, Tanis JE, et al. Injustice at every turn: a report of the National transgender discrimination survey, National Center for Transgender Equality, 2011.

42 Safer JD, Coleman E, Feldman J, et al. Barriers to healthcare for transgender individuals. Curr Opin Endocrinol Diabetes Obes 2016;23:168–71.

43 Grant JM, Mottet L, Tanis JE, et al. Injustice at every turn : a report of the National Transgender Discrimination Survey. Secondary Injustice at every turn: a report of the National Transgender Discrimination Survey, 2011. Available: http://ibibpurl.oclc.org/web/53491http://thetaskforce.org/downloads/reports/rtids_full.pdf

44 Gridley SJ, Crouch JM, Evans Y, et al. Youth and caregiver perspectives on barriers to Gender-Affirming health care for transgender youth. J Adolesc Health 2016;59:254–61.

45 Ali N, Fleisher W, Erickson J. Psychiatrists’ and psychiatry residents’ attitudes toward transgender people. Acad Psychiatry 2016;40:268–73.

46 Singer RB, Crane B, Lemay EP, et al. Improving the knowledge, attitudes, and behavioral intentions of perinatal care providers toward childbearing individuals identifying as LGBTQ: a quasi-experimental study. J Contiu Educ Nurs 2019;50:303–12.

47 Melin K, Hillaire-Botrel CR, Vega-Vélez D, et al. Readiness to provide pharmaceutical care to transgender patients: perspectives from pharmacists and transgender individuals. J Am Pharm Assoc 2019;59:651–9.

48 Moll J, Krüger P, Heron SL, et al. Attitudes, behavior, and comfort of emergency medicine residents in caring for LGBTQ patients: what do we know? J AM Edn Med Educ 2019;12:39–45.

49 Schabath MB, Blackburn CA, Sutter ME, et al. National survey of oncologists at National cancer Institute-Designated comprehensive cancer centers: attitudes, knowledge, and practice behaviors about LGBTQ patients with cancer, J Clin Oncol 2019;37:547–58.

50 Houssayni S, Nelsen K. Transgender competent provider: identifying transgender health needs, health disparities, and health coverage. Kans Med 2018;11:1–18.

51 Phelan SM, Burgess DJ, Yeazel MW, et al. Impact of weight bias and stigma on quality of care and outcomes for patients with obesity. Obes Rev 2015;16:319–26.

52 Corrigan P. How stigma interferes with mental health care. Am Psychol 2004;59:614–25.
53 Tompkins TL, Shields CN, Hillman KM, et al. Reducing stigma toward the transgender community: an evaluation of a humanizing and perspective-taking intervention. *Psychol Sex Orientat Gend Divers* 2015;2:34–42.

54 Byrne P. Stigma of mental illness and ways of diminishing it. *Advances in Psychiatric Treatment* 2000;6:65–72.

55 Couture S, Penn D. Interpersonal contact and the stigma of mental illness: a review of the literature. *J Ment Health* 2003;12:291–305.

56 Nyblade L, Stangl A, Weiss E, et al. Combating HIV stigma in health care settings: what works? *J Int AIDS Soc* 2009;12:15.

57 Corrigan PW. Target-Specific stigma change: a strategy for impacting mental illness stigma. *Psychiatr Rehabil J* 2004;28:113–21.

58 Hanisch SE, Twomey CD, Szeto ACH, et al. The effectiveness of interventions targeting the stigma of mental illness at the workplace: a systematic review. *BMC Psychiatry* 2016;16:1.