International Journal of Transgender Health

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/wijt21

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To cite this article: Matteo Marconi, Luisa Brogonzoli, Angela Ruocco, Elisa Sala, Sara D'Arienzo, Martina Manoli, Maria Teresa Pagano, Alessandra Daphne Fisher, Rosaria Iardino, Rosa Pedale, Ignazio Grattagliano, Claudio Cricelli & Marina Pierdominici (01 Jul 2024): Examining the training needs and perspectives of Italian general practitioners on transgender and gender diverse healthcare: Insights from a national survey, International Journal of Transgender Health, DOI: 10.1080/26895269.2024.2369615

To link to this article: https://doi.org/10.1080/26895269.2024.2369615

INTERNATIONAL JOURNAL OF TRANSGENDER HEALTH
https://doi.org/10.1080/26895269.2024.2369615

Examining the training needs and perspectives of Italian general practitioners on transgender and gender diverse healthcare: Insights from a national survey

Matteo Marconi[a#], Luisa Brogonzoli[b#], Angela Ruocco[a], Elisa Sala[c], Sara D'Arienzo[d,e], Martina Manoli[a,d], Maria Teresa Pagano[f], Alessandra Daphne Fisher[g], Rosaria Iardino[b], Rosa Pedale[h], Ignazio Grattagliano[h], Claudio Cricelli[h] and Marina Pierdominici[a]

[a]Reference Centre for Gender Medicine, Istituto Superiore di Sanità, Rome, Italy; [b]The Bridge Foundation, Milan, Italy; [c]Department of Political and Social Sciences, University of Pavia, Pavia, Italy; [d]Department of Medical and Surgical Sciences and Advanced Technologies "GF Ingrassia," University of Catania, Catania, Italy; [e]Tuscany Central Local Health Company, Italy; [f]Department of Infectious Diseases, Istituto Superiore di Sanità, Rome, Italy; [g]Department of Maternal and Child Health, Andrology, Women's Endocrinology and Gender Incongruence Unit, Florence University Hospital, Florence, Italy; [h]Italian College of General Practitioners and Primary Care, Florence, Italy

ABSTRACT

Introduction: General practitioners (GPs) play a crucial role in supporting transgender and gender diverse (TGD) individuals by providing healthcare, information, and referrals. However, a major challenge arises from the insufficient training of healthcare professionals in TGD healthcare. The lack of research on the training needs of GPs in this area further exacerbates the issue. To address this gap, we conducted a national survey aimed at Italian GPs to assess their knowledge and attitudes toward the health of TGD individuals.

Methods: A total of 631 GPs participated in an anonymous cross-sectional survey conducted in Italy from January 2021 to June 2022.

Results: In accordance with the questions about gender identity and gender affirming pathway, between 23.9% and 79.1% of GPs responded correctly. Less than half of them provided correct responses about the need for cancer prevention. Overall, the younger the age, the more likely it was to answer TGD health questions exactly. Most GPs (90.7%) believed that TGD people experience differences in healthcare access compared to the cisgender population and 37.4% agreed that TGD people experience transphobia in a healthcare context. The implementation of specific training programs and the development of evidence-based guidelines were identified by almost half of respondents as the most urgent measures to enhance TGD healthcare. Only 5.9% of GPs attended training courses on TGD healthcare, yet 97% acknowledged the utility of education in this field.

Conclusions: The outcomes of our study pave the way for developing strategies to improve GPs' training in TGD health, ensuring that TGD people receive competent and sensitive healthcare.

KEYWORDS
general practitioners; healthcare; knowledge; stigma; transgender and gender diverse people

Introduction

Transgender and gender diverse (TGD) people represent a broad spectrum of individuals whose genders differ from their recorded sex at birth (Coleman et al., 2022). To enhance readability, the acronym TGD and the term transgender have been utilized interchangeably, conveying the same meaning throughout the text. Studies carried out across a variety of different contexts have shown that TGD people face significant barriers accessing healthcare services and key health determinants such as education, employment, and housing, with a negative impact on their mental and physical status (EU Agency for Fundamental Rights, 2020; Feldman et al., 2021; Reisner et al., 2016; Safer et al., 2016; White et al., 2020; Winter et al., 2016).

According to international recommendations, transgender healthcare needs an interdisciplinary and multidisciplinary approach involving

CONTACT Marina Pierdominici marina.pierdominici@iss.it Reference Centre for Gender Medicine, Istituto Superiore di Sanità, Rome, Italy.
[#]These authors contributed equally to this work and share first authorship
Supplemental data for this article can be accessed online at https://doi.org/10.1080/26895269.2024.2369615.

professionals from different disciplines to support gender-affirming interventions as well as preventive care and chronic disease management (Coleman et al., 2022). In this scenario, primary care professionals, in particular general practitioners (GPs), play a key role as they represent the first point of contact for TGD within the health system, providing healthcare, information, and referrals (Casey, 2019; Coleman et al., 2022; Crowley et al., 2021; Hashemi et al., 2018; Royal College of General Practitioners, 2019; Stumbar, 2018). Unfortunately, the literature available to date highlights that one of the main barriers that TGD people face in access to health services is the lack of cultural competence and clinical expertise of healthcare providers on transgender issues (Burgwal et al., 2021; Coleman et al., 2022; Kachen & Pharr, 2020; Mikulak et al., 2021). Due to these reasons, TGD individuals frequently avoid seeking health services (or discontinue their engagement following the initial consultation), thus leading to various adverse outcomes, including suboptimal compliance with cancer screening protocols, delayed diagnosis of diseases, and self-administration of medications without appropriate medical supervision. Hence, there is a critical need to develop and implement competencies of healthcare providers regarding transgender issues.

There is insufficient evidence regarding the most effective delivery methods for such training; frequently, training on TGD health issues is delivered broadly through courses designed for the LGBT± community, rather than being specifically tailored to address the unique needs of the TGD population (Hollenbach et al., 2014; Lombardi, 2007; White et al., 2020). In this regard, a crucial challenge in providing training stems from the lack of research on the knowledge needs of healthcare professionals and the successful integration of this knowledge into practice (Burgwal et al., 2021; Mikulak et al., 2021).

To bridge this gap, the Reference Center for Gender Medicine at the Istituto Superiore di Sanità (ISS)–National Institute of Health in Italy, in collaboration with the Società Italiana di Medicina Generale e delle Cure Primarie (SIMG)–Italian College of General Practitioners and Primary Care, and The Bridge Foundation conducted a national survey directed at the Italian GPs, in which their attitudes toward gender identity and their knowledge about TGD people's health were assessed. To our knowledge, this is the first research in its kind in Italy and one of the few studies addressing this topic internationally. Our findings serve as a foundational step for the development of targeted professional training in TGD health, with the objective of improving access to proficient healthcare and enhancing health outcomes within this demographic.

Methods

Participants and procedures

The data collected for this study were obtained by an anonymous cross-sectional survey conducted online between September 2021 and September 2022 in Italy. Eligible participants were GPs across all the Italian regions. To pursue the aim of the study, a research group was created, including the Reference Centre for Gender Medicine at the ISS, the Bridge Foundation, the SIMG, and TGD organizations. Based on previous research and literature review, the research team created a questionnaire consisting of open and closed questions. It included four sections: demographics, knowledge, stigma, and training experience. To finalize the draft, 12 GPs at the national level participated in a focus group to assess it using pretest questionnaires. The questionnaire in its final form, translated to English, is available in Supporting Information File 1.

The survey was conducted by the computer-assisted web interviewing (CAWI) technique using the IdSurvey web platform. GPs were provided with a privacy policy statement detailing the survey's objectives, the data controller (i.e., ISS), and the purposes and legal grounds of processing personal data. Participation was voluntary, and access to the survey was limited to GPs who consented to participate *via* the web system. Data were collected and held anonymously, and the results were presented only in aggregate form. The Ethics Committee of the ISS approved this study (AOO-ISS 01/07/2019 0020061). To reach the desired target, the survey was sent to all local health authorities. The diffusion also received the support of the SIMG and the Lombardia's and Liguria's sections of the Federazione Italiana

Medici di Medicina Generale (FIMMG)–Italian Federation of General Practitioners.

Statistical analysis

All statistical analyses were conducted using STATA 18SE for Windows.

Descriptive statistics were obtained for all variables (absolute numbers, percentages, means, standard deviations). Specific descriptive statistics were performed on subsamples of GPs with and without training experience on TGD health. Chi-square test was used to test the differences between the two groups. Logistic regression models were performed to assess the effect of the selected categorical variables (age, geographic area of Italy, and size of municipality) to provide correct answers to the questions in the knowledge section of the questionnaire. The confidence intervals (CIs) were placed at 95%.

Table 1. Demographics.

	n (%)
Age	
<30-year old	27 (4.3)
30- to 40-year old	157 (24.9)
41- to 50-year old	68 (10.8)
>50-year old	379 (60.1)
Italian geographic area in which you work	
Northern Italy	358 (56.7)
Center Italy	117 (18.5)
Southern Italy and Islands	156 (24.7)
City in which you work	
Large municipality (>250,000 inhabitants)	123 (19.5)
Medium municipality (5000 – 250,000 inhabitants)	373 (59.1)
Small municipality (<5000 inhabitants)	135 (21.4)
What is the number of people you assist?[a]	
<600	39 (6.3)
600–900	46 (7.5)
901–1200	75 (12.2)
1201 – 1500	253 (41.0)
>1500	204 (33.1)
To your knowledge, are there TGD people among your patients?	
Yes	209 (33.1)
No	309 (49.0)
I don't know	113 (17.9)
If yes, in your opinion, how many could they approximately be?[b]	
1–5	176 (84.2)
6–10	20 (9.6)
11–20	5 (2.4)
21–30	1 (0.5)
>30	5 (2.4)
I don't know	2 (1.0)

Data are shown as absolute numbers (*n*) and percentages (%).
[a]Number of General Practitioners (GPs) respondents, 617 out of 631. The data obtained were grouped according to arbitrary categories.
[b]Only GPs who stated having TGD patients were included in the sample (209 out of 631). The data obtained were grouped according to arbitrary categories. TGD, transgender and gender diverse people.

Results

Demographics

All demographics are presented in Table 1. A total of 631 GPs took part in the survey, with the majority of whom (60.1%) aged over 50 years. The participants were distributed across Italy, with a predominant representation from Northern Italy (56.7%) and from municipalities of medium size (59.1%). The majority (74.1%) stated they served over 1200 patients. About a third (33.1%) reported to have at least one TGD patient.

Knowledge

General knowledge

This section of the questionnaire addressed topics concerning gender identity definitions, sexual orientation, cancer screening, and medical and legal aspects of the gender affirming pathway in Italy. The results are presented in Table 2. A percentage ranging from 23.9% to 79.1% of GPs, depending on the specific question, were able to provide correct information regarding gender identity and the gender affirming pathway. For example, while most respondents (79.1%) provided a correct response about the sexual orientation of TGD people, only a minority (34%) did so regarding gender dysphoria experience within this population.

Cancer screening and gender affirming pathway

There was a common lack of knowledge about the need for breast and prostate cancer screenings, because less than half of respondents (40.1% and 36%, respectively) answered correctly about it. When questioned about the gender affirming pathway, nearly half of GPs provided correct responses, with the exception of the inquiry regarding the necessity of surgery for legal gender recognition, to which only a quarter of them (23.9%) responded appropriately.

Demographic correlations

A multivariate analysis was conducted using a logistic regression model to examine whether independent variables identified in the demographic factors of GPs (i.e., age, geographic area of Italy, and size of municipality) could influence

Table 2. Knowledge.

Question	Right answer *n* (%)	Wrong answer *n (%)*	I don't know *n* (%)
Who is a transgender person?	253 (42.6)	333 (56.1)	8 (1.3)
Who is a cisgender person?	310 (52.2)	58 (9.8)	226 (38.0)
Are all TGD people gay or lesbian?	470 (79.1)	35 (5,9)	89 (15.0)
What is meant by gender affirming pathway?	365 (61.5)	191 (32.1)	38 (6.4)
Do all TGD people undergo a medical gender affirming pathway?	435 (73.2)	30 (5.1)	129 (21.7)
Are the expressions "gender dysphoria" and "gender incongruence" synonyms?	254 (42.8)	115 (19.4)	225 (37.8)
Do all TGD people experience gender dysphoria?	202 (34.0)	106 (17.9)	286 (48.1)
Should transgender men who have undergone chest surgery be screened for breast cancer?	238 (40.1)	153 (25.8)	203 (34.1)
Should transgender women who have undergone vaginoplasty be screened for prostate cancer?	214 (36.0)	212 (35.7)	168 (28.3)
In Italy, is a diagnosis of gender dysphoria/gender incongruence by a mental health professional essential to access hormonal therapy within the NHS?	275 (46.3)	46 (7.7)	273 (46.0)
In Italy, is a diagnosis of gender dysphoria/gender incongruence by a mental health professional essential to access gender affirming surgical procedures?	325 (54.7)	34 (5.7)	235 (39.6)
In Italy, is it essential to undertake gender affirming surgical procedures for the legal change of name and gender?	142 (23.9)	227 (38.2)	225 (37.9)
In Italy, does the legal recognition of the name and gender also involve the change of the personal health card?	342 (57.6)	42 (7.1)	210 (35.3)

Data are shown as absolute numbers (*n*) and percentages (%). TGD, transgender and gender diverse people; NHS, National Health System.

the likelihood of providing correct responses to the questions in this survey section (data not shown). Notably, only age was able to significantly ($p > .05$) affect participants' responses. In particular, as the age of GPs decreased, the probability of providing correct responses increased for questions related to the definition of a transgender person, inquiries about the sexual orientation of TGD individuals, the gender affirmation pathway, and prostate cancer screening (Table 3).

Table 3. Impact of age on GPs' knowledge.

Question	Age of GPs OR [95% CIs]	*p*
Who is a transgender person?	0.59 [0.50–0.71]	**<.001**
Who is a cisgender person?	1.08 [0.82–1.42]	.562
Are all TGD people gay or lesbian?	0.33 [0.16–0.69]	**.003**
What is meant by gender affirming pathway?	1.07 [0.90–1.27]	.438
Do all TGD people undergo a medical gender affirming pathway?	0.40 [0.21–0.77]	**.006**
Are the expressions "gender dysphoria" and "gender incongruence" synonyms?	0.85 [0.69–1.05]	.146
Do all TGD people experience gender dysphoria?	0.84 [0.67–1.05]	.128
Should transgender men who have undergone chest surgery be screened for breast cancer?	1.05 [0.87–1.26]	.603
Should transgender women who have undergone vaginoplasty be screened for prostate cancer?	0.75 [0.63–0.90]	**.002**
In Italy, is a diagnosis of gender dysphoria/gender incongruence by a mental health professional essential to access hormonal therapy within the NHS?	0.78 [0.54–1.10]	.157
In Italy, is a diagnosis of gender dysphoria/gender incongruence by a mental health professional essential to access gender affirming surgical procedures?	0.95 [0.66–1.38]	.800
In Italy, is it essential to undertake gender affirming surgical procedures for the legal change of name and gender?	1.06 [0.90–1.25]	.483
In Italy, does the legal recognition of the name and gender also involve the change of the personal health card?	0.99 [0.71–1.38]	.973

Logistic regression models were used to assess the effect of the selected categorical variable [age (continuous)] in correctly answering questions. Significant *p*-values are shown in bold. OR, odds ratio; 95%CIs, 95% confidence intervals; TGD, transgender and gender diverse people; NHS, National Health System.

Stigma

GPs were surveyed regarding their perspectives on the stigma and discrimination that TGD people may experience in accessing and using healthcare services. Results are summarized in Table 4. Most GPs (90.7%) acknowledged the existence of disparities in healthcare experienced by TGD individuals compared to the cisgender population. Among this 90.7%, almost half of the respondents identified receiving specific training and/or the development of specific evidence-based guidelines as the most urgent actions needed to enhance the care provided to TGD individuals by GPs (47.5% and 40.5%, respectively). Inclusion of gender identity in medical records was reported by a minority of respondents (11.5%). Sixty-six percent of participants agreed (strongly agreed/agreed) that TGD people are afraid or anxious about accessing healthcare services; 65.7% agreed (strongly agreed/agreed) that TGD often feel that healthcare professionals do not respect their gender identity or expression; finally, 37.4% agreed (strongly agreed/agreed) that TGD people often

Table 4. Stigma.

	n (%)
In your opinion, do TGD people experience differences in health care compared to the cisgender population?	
Yes	572 (90.7)
No	59 (9.3)
In your opinion, what actions should be taken urgently to improve the management of TGD people by GPs? (maximum 2 answers allowed)	
Specific training on TGD people health	465 (47.5)
Development of specific evidence-based guidelines	396 (40.5)
Inclusion of gender identity in medical records	112 (11.5)
Other	5 (0.5)
Please state your level of agreement with the following statements regarding the barriers that TGD people face accessing the NHS	
TGD people are often afraid or anxious about accessing healthcare	
Strongly agree	100 (15.8)
Agree	317 (50.2)
Neither agree nor disagree	174 (27.6)
Disagree	28 (4.4)
Strongly disagree	12 (1.9)
TGD people often feel that healthcare professionals do not respect their gender identity and/or expression	
Strongly agree	110 (17.4)
Agree	305 (48.3)
Neither agree nor disagree	153 (24.2)
Disagree	50 (7.9)
Strongly disagree	13 (2.1)
TGD people often experience transphobia or hatred in a healthcare context	
Strongly agree	52 (8.2)
Agree	184 (29.2)
Neither agree nor disagree	253 (40.1)
Disagree	118 (18.7)
Strongly disagree	24 (3.8)

Data are shown as absolute numbers (*n*) and percentages (%). TGD, transgender and gender diverse people; NHS, National Health System.

experience transphobia or hatred in a healthcare context.

Training experience

Results are summarized in Table 5. Only 5.9% of GPs reported having received training on transgender issues. Among this 5.9%, the majority did it on their own initiative, on a voluntary basis (57.5%). Almost all of the participants (97.8%) considered the training on TGD health to be useful (62.6%) or fundamental (35.2%). When questioned on the format through which they would prefer to receive training, 40% of GPs stated that they would prefer to receive it as part of their mandatory professional development and 32.7% as part of their mandatory formal educational program.

Notably, when GPs participants were divided into those who had already received specific training and those who had not, a significantly ($p < .05$) higher percentage of those with previous training was able to answer the majority of knowledge section's questions correctly (7 out of 13 questions), Table 6. Educational background also appeared to have a notable influence on respondents' answers regarding the importance of training itself (Table 7). Conversely, it did not appear to affect responses to the stigma section of the questionnaire (Supporting Information Table S1).

Table 5. Training experience.

	n (%)
Have you ever attended training courses on TGD health?	
Yes	37 (5.9)
No	594 (94.1)
If yes, how did you receive this training?	
As part of my mandatory professional development	9 (22.5)
Voluntary activity	23 (57.5)
As part of my mandatory formal education program	5 (12.5)
Other	3 (7.5)
In your opinion, training on TGD health is:	
Fundamental	222 (35.2)
Useful	395 (62.6)
Useless	14 (2.2)
In what way would it be most useful for a GP to receive training?	
As part of my mandatory professional development	404 (40.0)
Voluntary activity	267 (26.4)
As part of my mandatory formal education program	330 (32.7)
Other	9 (0.9)

Data are shown as absolute numbers (*n*) and percentages (%). TGD, transgender and gender diverse people.

Discussion

The current study provides a first assessment of the attitudes of Italian GPs toward gender identity and their knowledge about TGD health. Briefly, our results showed varying levels of understanding among GPs, with notable gaps in cancer prevention awareness. The majority of GPs acknowledged healthcare disparities for TGD individuals, and a significant portion recognized the existence of transphobia in healthcare settings. Respondents identified the urgent need for specific training and evidence-based guidelines to enhance healthcare for TGD people. However, despite the majority of GPs recognizing the importance of education in this area, only a small percentage of them had attended training courses on TGD healthcare. These results raise important considerations for both medical professionals and the broader healthcare system.

First, the considerable disparity of GPs' responses to the questionnaire section regarding knowledge indicates a lack of uniform understanding across

Table 6. The impact of training experience on knowledge.

Question	Without training ($n=594$) Right answer n (%)	Wrong answer n (%)	I don't know n (%)	With training ($n=37$) Right answer n (%)	Wrong answer n (%)	I don't know n (%)	p
Who is a transgender person?	253 (42.6)	333 (56.1)	8 (1.3)	24 (64.9)	13 (35.1)	0 (0)	**.008**
Who is a cisgender person?	310 (52.2)	58 (9.8)	226 (38.0)	25 (67.6)	2 (5.4)	10 (27.0)	.069
Are all TGD people gay or lesbian?	470 (79.1)	35 (5,9)	89 (15.0)	31 (83.8)	1 (2.7)	5 (13.5)	.493
What is meant by gender affirming pathway?	365 (61.5)	191 (32.1)	38 (6.4)	20 (54.1)	16 (43.2)	1 (2.7)	.370
Do all TGD people undergo a medical gender affirming pathway?	435 (73.2)	30 (5.1)	129 (21.7)	36 (97.3)	0 (0)	1 (2.7)	**.001**
Are the expressions "gender dysphoria" and "gender incongruence" synonyms?	254 (42.8)	115 (19.4)	225 (37.8)	16 (43.2)	11 (29.7)	10 (27.0)	.962
Do all TGD people experience gender dysphoria?	202 (34.0)	106 (17.9)	286 (48.1)	19 (51.4)	10 (27.0)	8 (21.6)	**.031**
Should transgender men who have undergone chest surgery be screened for breast cancer?	238 (40.1)	153 (25.8)	203 (34.1)	23 (62.2)	4 (10.8)	10 (27.0)	**.008**
Should transgender women who have undergone vaginoplasty be screened for prostate cancer?	214 (36.0)	212 (35.7)	168 (28.3)	19 (51.4)	12 (32.4)	6 (16.2)	.060
In Italy, is a diagnosis of gender dysphoria/gender incongruence by a mental health professional essential to access hormonal therapy within the NHS?	275 (46.3)	46 (7.7)	273 (46.0)	26 (70.3)	2 (5.4)	9 (24.3)	**.005**
In Italy, is a diagnosis of gender dysphoria/gender incongruence by a mental health professional essential to access gender affirming surgical procedures?	325 (54.7)	34 (5.7)	235 (39.6)	27 (73.0)	3 (8.1)	7 (18.9)	**.030**
In Italy, is it essential to undertake gender affirming surgical procedures for the legal change of name and gender?	142 (23.9)	227 (38.2)	225 (37.9)	18 (48.6)	11 (29.7)	8 (21.6)	**.001**
In Italy, does the legal recognition of the name and gender also involve the change of the personal health card?	342 (57.6)	42 (7.1)	210 (35.3)	27 (73.0)	2 (5.4)	8 (21.6)	.065

Data are shown as absolute numbers (n) and percentages (%). Significant p-values are shown in bold. TGD, transgender and gender diverse people; NHS, National Health System.

Table 7. The impact of previous educational experiences on the GPs' opinion about training.

	Without training ($n=594$) n (%)	With training ($n=37$) n (%)	p
In your opinion, training on TGD health is:			
Fundamental	197 (33.2)	25 (67.6)	**<.001**
Useful	385 (64.6)	11 (29.7)	**<.001**
Useless	13 (2.2)	1 (2.7)	.855
In what way would it be most useful for a GP to receive training?			
As part of my mandatory professional development	378 (39.9)	26 (41.3)	.826
Voluntary activity	254 (26.8)	13 (20.6)	.260
As part of my mandatory formal education program	307 (32.4)	23 (36.5)	.502
Other	8 (0.8)	1 (1.6)	.503

Data are shown as absolute numbers (n) and percentages (%). Significant p-values are shown in bold. TGD, transgender and gender diverse people.

these diverse aspects of TGD healthcare. This variance underscores the need for targeted education programs that address these specific areas of knowledge gaps. The observed lack of knowledge about the need for breast and prostate cancer screenings among less than half of the respondents is a concerning finding. This is because it contributes, at least partially, to the low adherence to cancer screenings among the TGD population (Agénor et al., 2018; Berner et al., 2021; Braun et al., 2017; de Blok et al., 2019; Kiran et al., 2019; Leone, et al., 2023; Luehmann et al., 2022; Marconi et al., 2024; Nicholls et al., 2023; Roznovjak et al., 2023; Tabaac et al., 2018), raising critical concerns about the healthcare disparities faced by this community. In this regard, GPs should be trained not only on the medical aspects of cancer prevention but also on promoting a supportive and respectful environment, thus, encouraging TGD individuals to seek timely medical attention.

The acknowledgment by over one-third of our participants that TGD individuals often experience transphobia or hatred in a healthcare context is also alarming and is consistent with previous international data on this topic (TGEU, 2017). Conversely, these data suggest a reassuring level of awareness among the respondents. However, the urgency of addressing systemic issues and cultivating a culture of acceptance within healthcare institutions persists in order to eradicate discrimination and promote inclusive care for all.

Notably, our data show that younger GPs are more likely to answer questions related to TGD health correctly. The fact that medical curricula still lack comprehensive education about TGD health, yet younger practitioners are more likely to answer questions correctly, suggests that there might be additional factors contributing to their better knowledge. For instance, younger generations tend to be more culturally aware and sensitive to issues of

diversity, including those related to gender identity (Moretti, 2023). Growing up in an era of increased visibility and acceptance of LGBT+communities, younger health practitioners may naturally develop a more inclusive and empathetic approach to patient care. In addition, younger healthcare professionals are often part of a diverse network of peers, and discussions within these networks may include sharing experiences and insights related to transgender health. Peer influence and collaborative learning environments can contribute to a more informed and supportive healthcare community.

In line with Burgwal et al. (2021), the majority of GPs reported acquiring information about TGD health voluntarily, yet they expressed a preference for receiving it as part of their mandatory professional development or formal educational program. The significant number of GPs seeking information about transgender health voluntarily implies an intrinsic interest or awareness within the medical community regarding this aspect of healthcare. This attitude is commendable as it reflects a proactive approach to staying informed and addressing the needs of the TGD population. Conversely, the preference expressed by these practitioners for mandatory professional development or formal educational programs highlights a potential discrepancy. It indicates a desire for a more structured and systematic approach to transgender health education, suggesting that current voluntary initiatives may not fully address the perceived educational needs. These findings suggest an opportunity for medical institutions and professional bodies to reassess and potentially expand mandatory training requirements to include transgender health topics.

This study has some limitations. First, a non-probability sampling method was employed, introducing the possibility of non-response bias. This approach did not allow us to determine the precise count of GPs who received the invitation, distributed by scientific societies and local healthcare authorities, to complete the questionnaire. GPs with limited awareness and a more negative attitude toward TGD health may have been less inclined to participate. In addition, GPs respondents in our survey were predominantly from Northern Italy and from medium size municipalities; caution is needed in generalizing our findings to the overall Italian GPs population, or GPs working in other healthcare settings internationally. The limited number of GPs with training might have reduced the power to detect significant differences; thus, the absence of statistical significance when comparing GPs with training and those without training should not be interpreted as a lack of disparities.

Conclusions

Our results emphasize the importance of ongoing efforts to enhance healthcare providers' understanding of gender diversity and improve the inclusivity of healthcare settings for TGD individuals. This may include targeted educational initiatives, the development of evidence-based guidelines, and promoting a cultural shift within the medical community to ensure fair and respectful care for all patients.

Acknowledgments

We thank all the GPs who participated in this study during such a challenging period for them, such as the COVID-19 pandemic. We thank SIMG and the Lombardia's and Liguria's sections of the Federazione Italiana Medici di Medicina Generale (FIMMG)–Italian Federation of General Practitioners for supporting us in the diffusion of the questionnaire. In addition, we thank TGD organizations (ALA Milano; Associazione Consultorio Transgenere, Associazione Libellula Italia APS; Associazione Maurice GLBT, Spo.T Sportello Trans; Associazione Transessuale Napoli, ATN; Azione Trans; Boramosa, Centro Salute Trans e Gender Variant, CEST; Gruppo Ascolto Giovani Arcobaleno, G.A.G.A; Gay Center; Gender X; Gruppo Trans APS; I Ken; Intersexioni; Movimento Identità Trans, MIT; Sat Pink APS; Sunderam; T Genus: Magna Grecia) for their active contribution in the project.

Authors' contributions

Conceptualization: MM, MP. Methodology: MM, LB, AR, ES, SD, MTP, ADF, RI, RP, IG, CC, MP. Statistical analysis: ES, SD. Writing (original draft): MM, LB, MP. Writing (review and editing): MM, LB, AR, ES, SD, MMan, MTP, ADF, RI, RP, IG, CC, MP. MP is responsible for the overall content.

Disclosure statement

The authors declare that they have no competing interests.

Ethics approval

The Ethics Committee of the Istituto Superiore di Sanità - National Institute of Health in Italy approved this study (AOO-ISS 01/07/2019 0020061)

Funding

The project was established with the co-funding of the European Union, National Operational Programme for social inclusion – European Social Fund 2014-2020.

Data availability statement

Data are available upon reasonable request. The authors had full access to all of the data in the study. Aggregated data that underlie the results reported in this article are available on request to the corresponding author.

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