

Pharmacy students' awareness of LGBT people and related pharmaceutical knowledge levels

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ABSTRACT

Background and Aims: Historically marginalised by the health care staff, the disproportionate prevalence of health issues among LGBT people and cultural biases can often be overlooked by many practitioners.

Methods: This study aimed to enhance the awareness and knowledge of 4th and 5th year pharmacy students, who are rapidly progressing towards becoming future health care professionals, regarding health issues faced by LGBT people. We conducted a study in January-February 2024 in the form of an e-survey comprising demographics (Section 1), Hudson-Rickett Homophobia Scale (Section 2), and drug knowledge level (Section 3). Section 3 consisted of 19 multiple-choice questions divided into three categories: general illnesses (6 questions), hormone therapies (6 questions), and drug interactions (7 questions), with participants directed to select appropriate responses. Pre- and post-test correct answer rates were compared.

Results: A total of 140 students participated, with 53 from the 4th year and 87 from the 5th year. It was found that 28.6% of participants were identified as homophobic, with a higher percentage observed in males (45.5%) than in females (23.6%) ($p=0.043$). According to Poisson regression analysis, being acquainted with an LGBT individual was associated with 1.587 times decrease in the Hudson-Rickett Homophobia Scale score ($p<0.001$). Evaluation of correct responses to questions measuring drug knowledge revealed an increase in the mean (SD) number of correct answers from 10.31 (2.21) pre-test to 12.39 (2.64) post-test ($p<0.001$).

Conclusion: The study highlights inadequate education on LGBT health issues, the prevalence of homophobia among more than a quarter of students, and insufficient drug knowledge levels, yet a significant improvement was observed with the provision of brief information.

Keywords: Transgenders, attitude, pharmacotherapy, public health, side effects

INTRODUCTION

LGBT, which stands for Lesbian, Gay, Bisexual, Transgender, and Queer, is an umbrella term representing people in all segments of society, including intersex, asexual, and people who question their sexual orientation. (Hegazi & Pakianathan, 2022). The National Institute on Minority Health and Health Disparities has begun to recognise the LGBT community as a minority community facing inequalities in health care (Pérez-Stable, 2016).

Negative social life, limited knowledge of health providers about LGBT, fear of stigmatisation and marginalisation are barriers to the health of these people (Wang, Miao, & You, 2022). For example, in a survey conducted with LGBT people in Turkey, only 7 out of 278 participants stated that they did not

experience any problems while receiving health care services. Approximately two-thirds of the participants stated that they were afraid to share their LGBT status with health providers, one-third stated that they could not get enough information, and one-fourth stated that they encountered negative behaviours when they did (Yasin, Çebi, & Şapçı, 2018).

Health problems that LGBT people are at risk for include depression, substance abuse, obesity, sexually transmitted diseases, cancer, and other chronic conditions that may occur in relation to these diseases. For example, the risk of depression and anxiety in LGBT people is 1.5 times higher than that in the general population (Mandap Madalene, Carrillo, & Youmans, 2014). According to Centres for Disease Control and Prevention (CDC) data, the risk of suicide in LGBT adolescents is five

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times higher than that in non-LGBT adolescents ("Disparities in Suicide," 2023).

When cancer is considered as an example of other diseases for which LGBT people are at risk, it is stated that LGBT people have less access to cancer screenings due to the negative behaviours they face in the health system (Banerjee, Staley, Alexander, Walters, & Parker, 2020). However, men who are gay, bisexual, or have sex with men are 80 times more likely to develop HIV or hepatitis-related anal cancer (Mandap Madalene et al., 2014). Studies have shown that lesbian and bisexual women have an increased risk of cancers caused by obesity and alcohol and tobacco addiction (Meads & Moore, 2013; Wakefield, 2021).

Pharmacists are the closest health advisors in the community and have responsibilities in LGBT health, such as providing information to patients about sexually transmitted diseases, improving patient medication adherence, recommending pre-exposure prophylaxis, monitoring hormone therapy in transgender people receiving hormone therapy, and communicating correctly without marginalising these people (Chaudhary, Ray, & Glass, 2021; Grundmann et al., 2020).

The aim of this study was to determine the awareness of LGBT people among the 4th-5th pharmacy students, who are about to graduate, to measure the homophobia scale, to evaluate the level of knowledge about the drugs administered to LGBT people, and to increase the awareness levels of the students with brief information in the survey.

MATERIALS AND METHODS

Study Design

An e-survey was designed for the study targeting fourth- and fifth-year students of Hacettepe University Faculty of Pharmacy. The duration of pharmacy education in Turkey is 5 years; they are preferred in the survey because they are competent compared to other grades. An Informed Consent Form was obtained from the participants in the survey applied in January-February 2024, and the study was approved by the Hacettepe University Health Sciences Research Ethics Committee (decision no: SBA 23/468, decision date: 03/01/2024).

Participation in the survey administered via Google Forms was voluntary. Volunteers were contacted through the students' class groups and class representatives, and an "Informed Consent Form" was presented to the volunteers on the home page of the survey. Volunteers were informed that the questionnaire consisted of three stages, that it would take 15 minutes to answer, and that they could stop answering the questionnaire at any stage. No personal data were collected at any stage of the survey. Announcements were made once in student groups to remind them of the survey. For the students to participate in the

survey voluntarily without feeling any pressure, the responsible faculty member did not contact the students.

When the sample size was calculated taking into account the homophobia scale based on similar studies in the literature, it was planned to include a total of at least 122 students, 61 students each from the 4th and 5th grades, with an effect size of 0.60 and a sampling error of 0.05. Since the information presented in the questionnaire concerns occupational sciences, only students in the 4th and 5th grades were included. Thus, the awareness and knowledge levels of students who are close to graduation were evaluated using a questionnaire designed by reviewing the current and scientific literature and considering the core curriculum education.

The first part of this questionnaire, which consists of three parts, consists of questions to find out what grade the students are in, their average age, and whether they have received training on providing health services to LGBT people before. The Hudson and Rickett Homophobia scale was applied in the continuation of the questionnaire, and in the third part of the questionnaire, a 19-question test questioning the medication knowledge of LGBT people was applied, and the questions were divided into three sections. In the first of these sections, general information about LGBT people and disease incidences was included. The second section focussed on the possible side effects of hormone replacement therapy. In the third section, possible interactions that may be observed are mentioned. At the end of each section, information boxes related to the questions were added. The first information box and related questions focussed on the problems faced by LGBT people in Turkey while receiving health care services. In addition, diseases and conditions with a higher incidence in these individuals compared with the general population were summarised. The second information box and related questions focussed on the hormone therapies used during the gender reassignment process and the common problems encountered. Finally, the third information box and related questions focussed on the antiretroviral therapies and the common problems encountered with these therapies. After the information boxes, the questions were repeated and it was aimed to evaluate the pre-posttest (pre-posttest) awareness of the students. Such a questionnaire was designed to understand whether the students read the information given in the information boxes with understanding and to determine whether they instantly reflected their understanding of the related questions. At the same time, since there is not enough infrastructure and time to present the information to the students as education, we aimed to obtain instant feedback through the questionnaire. A detailed form of the questionnaire is included in the supplementary material.

Hudson and Rickett Homophobia Scale

In the second part of the questionnaire, the Hudson and Rickett Homophobia Scale, which has been translated from English into Turkish by Sakall and Uğurlu, was used (Arzu Kader Har-

manci Seren et al., 2023). There are 25 questions in the English version of the scale, and the statement "I am not uncomfortable walking around the parts of the city where homosexuals are concentrated" was removed from the Turkish version because it is not suitable for our country. The statements in the scale are scored between 1 and 6. 1 strongly disagree and 6 strongly agree, and the other options that the participants can choose are quite disagree/somewhat disagree/somewhat agree. The Cronbach's alpha value of the questionnaire was found to be 0.94, and its reliability was found to be high. In the scale, 50 points and above are considered increasing homophobia level, and the options scored between 1 and 6 were collected. In the 5th, 6th, 8th, 10th, 11th, 13th, 17th, 18th, 23rd, and 24th statements in the scale, the scores are reversed and summed (Arslantaş, 2017)

Survey Assessment

SPSS Version 23.0 statistical analysis programme was used to determine the demographic characteristics of the participants. As descriptive statistics, the mean and standard deviation or median and minimum-maximum values and interquartile range (IQR) were given for numerical variables and number and percentage values were given for categorical variables. We used the Kolmogorov-Smirnov test and graphical representations to analyse the normality assumption, which is one of the parametric test. In the comparison of numerical data, Student's t-test was used for normally distributed data, Mann-Whitney U test was used for non-normally distributed data, and Chi-Square test was used for the comparison of ratios. The relationship between numerical variables was analysed using the appropriate correlation test (Pearson or Spearman). Poisson regression analysis, a statistical analysis used to quantify the relationship between a criterion variable and one or more predictor variables, was used to determine the nature of the relationship between the variables. The pre- and post-information responses of pharmacy students were analysed by Wilcoxon test. The McNemar test was used to measure the significance of the change in the two-group dependent two-sample test. $p < 0.05$ was considered statistically significant.

RESULTS

Demographic Characteristics

There were 146 students in the 4th grade and 162 students in the 5th grade, resulting in a total of 308 students in pharmacy school, and the survey participation rate was found to be 45.45%. A total of 140 students participated in the survey, 53 of whom were fourth graders and 87 of whom were fifth graders. When their biological sex was analysed, most of the students in both classes were female. When asked about their sexual orientation, the majority of respondents stated that they were heterosexual. When asked if they knew any LGBT people in their neighbourhood, 72.8% answered "yes". When asked

whether they found the education provided in their faculty for these people adequate, only 11 students answered "yes". Finally, when asked if they were confident in providing health care services to these people, 30.2% of fourth graders and 37.9% of fifth graders answered "yes" (Table 1).

Hudson and Rickett Homophobia Scale

The answers given to 24 questions on the Hudson and Rickett Homophobia Scale vary in both classes. Although there is variability in the answers given to each question, there is no significant difference when the total score is compared in both classes. At the same time, when the participants were divided into two categories as homophobic and non-homophobic according to the predictive value, although there was no significant difference, 17 (32.1%) participants from the 4th grade and 23 (26.4%) participants from the 5th grade were homophobic individuals ($p > 0.05$) (Table 2).

Assessment of the Drug Knowledge Level

According to the results obtained in the third and last part of the questionnaire to evaluate and increase the drug knowledge levels of the students in LGBT people, the general disease knowledge levels (1st information box), knowledge levels about hormone therapies (2nd information box), and drug interaction knowledge levels (3rd information box) increased significantly in both classes with the short information given ($p < 0.05$). When the average of the total number of correct answers was analysed for both classes, it increased from 10.13 in the 4th grade to 12.72 after the information and from 10.43 to 12.18 in the 5th grade ($p < 0.001$). When it is analysed whether the information is useful for the students based on the number of correct answers after reading the information boxes (pre-posttest) regardless of the class distinction, the average number of correct answers increased from 10.31 to 12.39 ($p < 0.001$). However, when the number of correct answers of the classes before and after the information was compared separately, no significant difference was found ($p > 0.05$) (Table 3).

Correlation and Regression Analyses

When the relationship between being homophobic and biological genders was analysed by chi-square test, 45.5% (15/33) of men were homophobic, while 23.6% (25/106) of women were homophobic ($p = 0.043$). At the same time, only 2% (2/100) of non-homophobic and 22.5% (9/40) of homophobic students considered their level of knowledge sufficient ($p < 0.001$). Nineteen (18.6%) of the students who acquainted with LGBT people and 21 (55.3%) of those who did not acquaint with LGBT people were in the homophobic category ($p < 0.001$). When it was analysed whether being homophobic had an effect on the rate of correct answers given to the related knowledge level questions, it was found that it did not have a significant effect on all three knowledge levels and their total ($p > 0.05$).

Table 1. Comparison of demographic characteristics of students

Variables	4th Grade (n=53)	5th Grade (n=87)	p
Age (years), mean (SD)	21.60 (0.66)	22.70 (0.83)	<0.001
Biological sex			
Female, n (%)	39 (73.6)	67 (77)	0.422
Male, n (%)	13 (24.5)	20 (23)	
Not wishing to disclose, n (%)	1 (1.9)		
Sexual orientation			
Heterosexual, n (%)	48 (90.6)	78 (89.7)	0.121
Bisexual, n (%)	3 (5.7)	4 (4.6)	
Not wishing to specify, n (%)	-	3 (3.4)	
Homosexual, n (%)	-	2 (2.3)	
Pansexual, n (%)	2 (3.7)	-	
Are you acquainted with any LGBT people in your neighbourhood?			
Yes, n (%)	40 (75.5)	62 (71.3)	0.729
No, n (%)	13 (24.5)	25 (28.7)	
Have you received any training on providing health care services to LGBT people?			
Yes, n (%)	1 (1.9)	-	0.379
No, n (%)	52 (98.1)	87 (100)	
Do you think that the training given in your faculty on this subject is sufficient?			
Yes, n (%)	5 (9.4)	6 (6.9)	0.592
No, n (%)	48 (90.6)	81 (93.1)	
Do you feel confident in providing health services to these people? (At the beginning of the survey)			
Yes, n (%)	16 (30.2)	33 (37.9)	0.454
No, n (%)	37 (69.8)	54 (62.1)	
Do you feel confident in providing health services to these people? (At the end of the survey)			
Yes, n (%)	27 (50.9)	31 (35.6)	0.422
No, n (%)	26 (49.1)	56 (64.4)	

* LGBT: Lesbian, Gay, Bisexual, and Transgender

Table 2. Hudson and Rickett Homophobia Scale

Items, n (%)	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Agree	Strongly agree	P
1-I feel uncomfortable being in a homosexual group.							
4th Grade	46 (86.8)	6 (11.3)	-	1 (1.9)	-	-	<0.001
5th Grade	20 (23)	16 (18.4)	15 (17.2)	19 (21.8)	6 (6.9)	11 (12.6)	
2-I get angry if someone of my own sex shows sexual interest in me.							
4th Grade	38 (71.7)	11 (20.8)	3 (5.7)	1 (1.9)	-	-	<0.001
5th Grade	12 (13.8)	17 (19.5)	14 (16.1)	18 (20.7)	11 (12.6)	15 (17.2)	
3-I would be disappointed if I found that my child was gay.							
4th Grade	38 (71.7)	8 (15.1)	4 (7.5)	3 (5.7)	-	-	<0.001
5th Grade	6 (6.9)	9 (10.3)	17 (19.5)	23 (26.4)	14 (16.1)	18 (20.7)	
4-I would be upset if I determined that my brother was gay.							
4th Grade	35 (66)	13 (24.5)	4 (7.5)	1 (1.9)	-	-	<0.001
5th Grade	9 (10.3)	9 (10.3)	13 (14.9)	24 (27.6)	13 (14.9)	19 (21.8)	
5-I like to participate in social activities with bisexual people.							
4th Grade	19 (35.8)	12 (22.6)	6 (11.3)	10 (18.9)	4 (7.5)	2 (3.8)	<0.001
5th Grade	1 (1.1)	5 (5.7)	12 (13.8)	32 (36.8)	14 (16.1)	23 (26.4)	

Table 2. Continued

6-I would not be disturbed to learn that my daughter's teacher is a lesbian. 4th Grade 5th Grade	37 (69.8) 9 (10.3)	9 (17) 19 (21.8)	2 (3.8) 12 (13.8)	17 (19.5)	3 (5.7) 11 (12.6)	2 (3.8) 19 (21.8)	<0.00 1
7-I get bored if someone of my own gender shows sexual interest in me. 4th Grade 5th Grade	40 (75.5) 7 (8)	8 (15.1) 13 (14.9)	3 (5.7) 10 (11.5)	- 17 (19.5)	2 (3.8) 18 (20.7)	- 22 (25.3)	<0.00 1
8-I would feel comfortable talking to a homosexual at a party. 4th Grade 5th Grade	42 (79.2) 12 (13.8)	7 (13.2) 24 (27.6)	- 21 (24.1)	1 (1.9) 11 (12.6)	- 7 (8)	3 (5.7) 12 (13.8)	<0.00 1
9-I would be disturbed to learn that my son's male teacher is homosexual. 4th Grade 5th Grade	39 (73.6) 10 (11.5)	8 (15.1) 18 (20.7)	2 (3.8) 11 (12.6)	2 (3.8) 15 (17.2)	2 (3.8) 11 (12.6)	- 22 (25.3)	<0.00 1
10-I does not mind working with a male homosexual. 4th Grade 5th Grade	48 (90.6) 22 (25.3)	3 (5.7) 20 (23) (25.3)	1 (1.9) 14 (16.1)	- 11 (12.6)	- 9 (10.3)	1 (1.9) 11 (12.6)	<0.00 1
11-It does not bother me if a member of my own sex shows sexual interest in me. 4th Grade 5th Grade	33 (62.3) 3 (3.4)	12 (22.6) 8 (9.2)	2 (3.8) 11 (12.6)	3 (5.7) 22 (25.3)	2 (3.8) 15 (17.2)	1 (1.9) 28 (32.2)	<0.00 1
12-If I find that my child is gay. I will think that I am not a good parent. 4th Grade 5th Grade	48 (90.6) 19 (21.8)	4 (7.5) 29 (33.3)	1 (1.9) 13 (14.9)	- 11 (12.6)	- 7 (8)	- 8 (9.2)	<0.00 1
13-I do not feel uncomfortable finding someone of my own sex attractive. 4th Grade 5th Grade	32 (60.4) 1 (1.1)	9 (17) 4 (4.6)	4 (7.5) 14 (16.1)	6 (11.3) 18 (20.7)	1 (1.9) 16 (18.4)	1 (1.9) 34 (39.1)	<0.00 1
14-I am disgusted to see two men holding hands in public. 4th Grade 5th Grade	48 (90.6) 27 (31)	3 (5.7) 20 (23) (28.7)	- 11 (12.6)	2 (3.8) 9 (10.3)	- 11 (12.6)	- 9 (10.3)	<0.00 1
15-It would bother me to find that my doctor is gay. 4th Grade 5th Grade	50 (94.3) 27 (31)	2 (3.8) 25 (28.7)	1 (1.9) 8 (9.2)	- 11 (12.6)	- 5 (5.7)	- 11 (12.6)	<0.00 1
16-It would disturb me to learn that my boss is homosexual. 4th Grade 5th Grade	51 (96.2) 27 (31)	2 (3.8) 25 (28.7)	- 8 (9.2)	- 9 (10.3)	- 7 (8)	- 11 (12.6)	<0.00 1
17-I would be proud if someone of my own gender showed sexual interest in me. 4th Grade 5th Grade	12 (22.6) 1 (1.1)	9 (17) 3 (3.4)	11 (20.8) 3 (3.4)	13 (24.5) 15 (17.2)	4 (7.5) 25 (28.7)	4 (7.5) 40 (46)	<0.00 1
18-Working with a female homosexual does not bother me. 4th Grade 5th Grade	45(84.9)) 27 (31)	5 (9.4) 16 (18.4)	- 15 (17.2)	- 7 (8)	- 11 (12.6)	3 (5.7) 11 (12.6)	<0.00 1
19-I feel uncomfortable if my spouse or partner is interested in someone of his/her own sex. 4th Grade 5th Grade	12 (22.6) 4 (4.6)	5 (9.4) - 4 (4.6)	3 (5.7) 1(1.1)	7 (13.2) 6 (6.9)	11 22 (25.3)	15 54 (62.1)	<0.00 1
20-It would disturb me to learn that my neighbour is homosexual. 4th Grade	52 (98.1)	1 (1.9) 20 (23)	- 9 (10.3)	-	- 8 (9.2)	-	<0.00 1

Table 2. Continued

5th Grade	29 (33.3)			11 (12.6)		10 (11.5)		
21- 21-Ild feel uncomfortable if I was weren in a pub frequented by bisexual people.	38 (71.7)	6 (11.3) 16 (18.4)	8 (15.1) 15 (17.2)	1 (1.9) 8 (9.2)	- 15 (17.2)	- 21 (24.1)	<0.00 1	
4th Grade								
5th Grade	12 (13.8)							
22-It would disturb me to learn that the religious leader of the religion to which I belong is homosexual.	38 (71.7)	7 (13.2) 7 (8)	2 (3.8) 8 (9.2)	2 (3.8) 7 (8)	2 (3.8) 11 (12.6)	2 (3.8) 37 (42.5)	<0.00 1	
4th Grade	17							
5th Grade	19 (21.8)							
23-It would not bother me to find that my best friend of my own sex is gay.	49 (92.5)	3 (5.7) 16 (18.4)	- 15 (17.2)	- 4 (4.6)	- 12 (13.8)	1 (1.9) 21 (24.1)	<0.00 1	
4th Grade								
5th Grade	19 (21.8)							
24-It does not bother me if people of my own gender find me attractive.	41 (77.4)	7 (13.2) 16 (18.4)	2 (3.8) 25 (28.7)	1 (1.9) 6 (6.9)	- 17 (19.5)	2 (3.8) 18 (20.7)	<0.00 1	
4th Grade								
5th Grade	5 (5.7)							
Homophobia score, median (min-max)	33.33 (0-98.33)							
4th Grade	33.33 (1.67-98.33)							0.572
5th Grade	33.33 (0-97.50)							
Weighted score, mean (SD)	6.24 (4.43)							
4th Grade	6.64 (4.51)							0.439
5th Grade	6.00 (4.39)							
Number of homophobic individuals according to the cut-off value (≥ 50 points), n (%)	40 (28.6)							
4th Grade	17 (32.1)							0.601
5th Grade	23 (26.4)							

Table 3. Distribution of mean correct answers before and after the three brief informations

Grade	1. Info, mean (SD)			2. Info, mean (SD)			3. Info, mean (SD)			Total		
	Pretest	Posttest	P*	Pretest	Posttest	P*	Pretest	Posttest	P*	Pretest	Posttest	P*
4th	4.47 (1.08)	4.85 (0.79)	0.008	2.91 (1.29)	3.92 (1.37)	<0.001	2.75 (1.01)	3.94 (1.56)	<0.001	10.13 (2.09)	12.72 (2.62)	<0.001
5th	4.45 (0.88)	4.66 (0.79)	0.046	3.11 (1.43)	3.94 (1.42)	<0.001	2.86 (1.14)	3.59 (1.36)	<0.001	10.43 (2.28)	12.18 (2.65)	<0.001
P**	0.735	0.130		0.383	0.801		0.866	0.153		0.429	0.167	
Total	4.46 (0.96)	4.73 (0.79)	0.002	3.04 (1.38)	3.94 (1.40)	<0.001	2.82 (1.09)	3.72 (1.45)	<0.001	10.31 (2.21)	12.39 (2.64)	<0.001

*Expresses the p values of the correct answers within classes before and after the information.

**Expresses the p-values of correct answers between classes.

When a Poisson regression analysis was conducted within the framework of demographic characteristics and knowledge levels to predict a student's homophobia score, it was found that having a male gender increased the homophobia score by 1.745 times ($p < 0.001$) and having an LGBT acquaintance decreased it by 1.587 times ($p < 0.001$). No statistically significant relationship was found with the other parameters.

DISCUSSION

To the best of our knowledge, this is the first study to measure the attitudes towards LGBT people, homophobia levels, and knowledge levels of pharmacy faculty students who receive intensive pharmaceutical education and focus on vocational courses in the last years of their education. In our study, while no relationship was found between homophobia and drug knowledge levels, the fact that homophobia was higher in males than in

females and that students who were acquainted with LGBT people had less homophobia were among the striking results.

Pharmaceutical care education for LGBT people is not provided in pharmacy faculties. In this regard, the fact that the majority of the students stated in the survey that they did not receive any training and that the training and themselves were inadequate reveals that such training programmes should be increased. It has been shown that with the LGBT health and practise elective course for pharmacy students in the USA, students have more knowledge about the health resources available for LGBT people and the barriers to treatment and are able to distinguish the health care needs of different members of the LGBT community (Jann, Penzak, White, & Tatachar, 2019). In another study conducted with pharmacy students, students stated that the problems of transgender people should be included in the curriculum (Knockel, Ray, & Miller, 2019). In general, it was observed that with the training provided, students became more confident in communicating with LGBT people and took medical histories of LGBT people more easily (Braun et al., 2017). For this reason, it is emphasised in the literature that training curricula, including LGBT health issues, should be developed and pedagogical practises in the training programmes of health professionals should be improved (Bleasdale, Wilson, Aidoo-Frimpong, Gabriel, & Przybyla, 2024).

Homophobia assessment studies conducted for students studying in health sciences are available in the literature. However, such studies on pharmacy students who will provide pharmaceutical counselling services are extremely limited. According to a study involving 2,531 students from medicine (33.1%), nursing (24.8%), pharmacy (11.9%), and other health sciences (midwifery, nutrition and dietetics, physiotherapy, health institution management) (30.2%) in Istanbul, medical students had the lowest homophobia score, and their mean scores were significantly lower than those of other students. Pharmacy students were the most likely to state that they would not provide health services to LGBT people. Pharmacy students also had the highest Hudson Ricketts homophobia score (weighted score=4.09) (A. K. Harmanci Seren et al., 2023). The sociocultural living conditions of the students may have been effective because it was higher in our study (6.24). In addition, unlike this study, a significant difference was found between the genders in our study.

According to a study measuring the general perceptions and attitudes of pharmacy students towards the health of transgender people, 67% did not have confidence in their ability to treat transgender people before the course, while only 20% reported this deficiency after the course (Leach, Seung, & Layson-Wolf, 2019). In our study, while 40% of the students were confident about providing health care services to LGBT people before the information, this rate increased slightly (41.4%) after the information. This situation shows that students' self-confidence in providing health care services to LGBT people is still in-

sufficient. In another thesis study involving pharmacy faculty members, the mean Hudson and Ricketts homophobia score was 88.12 for pharmacy and 88.94 for the general population. Although it is promising that the students included in our study as future health professionals have a lower score, it is estimated that it will decrease further with awareness and information training.

In addition to students, studies conducted with academic health professionals who have started their professional life are also included in the literature. According to a study in which the homophobia and knowledge levels of nurse educators in Turkey were evaluated, it was found that half of them had a high level of homophobia and lack of knowledge, and very little effort was made to acquire this knowledge (Aslan, Sahin, & Emiroglu, 2019). According to a thesis study evaluating the attitudes of medical faculty members towards LGBT people, 80.3% of them did not receive any training on this subject and 75% of them were homophobic (Arslantaş, 2017).

Our study has some limitations. Among the limitations of this study are that it was conducted as a single-centred study, other health sciences students were not included, and participation was low due to the sociocultural sensitivity of the subject. In addition, students who agreed to participate in the study were included. Therefore, the findings do not provide clear information about the students who did not participate. However, the knowledge level questions and information boxes in the last part of the questionnaire constitute a unique strength of our study.

CONCLUSION

Pharmacists are at the most convenient position to achieve meaningful changes in the way they treat, counsel, and interact with all patients, including those whose sexual orientation or gender identity is different from their own. It is therefore extremely important that future pharmacists receive adequate education and training that recognises their role in LGBT health and promotes culturally competent and equitable patient care. Therefore, the pharmacy curriculum needs to be revised accordingly. It is also essential that pharmacists address the problems of LGBT people with prescription and non-prescription drugs (non-adherence, adverse effects, drug interactions, drug abuse, etc.). In conclusion, the findings of our study suggest that education is inadequate, homophobia is seen in more than a quarter of the students, and knowledge levels are inadequate but significantly increased with the brief information provided. There is a need for large-scale, comparative studies that reflect the contributions of formal education to the provision of health care services for LGBT people.

Ethics Committee Approval: Ethical approval for the study was obtained from the non-interventional ethics committee of Hacettepe University on 03.01.2024 (Decision no: SBA 23/468).

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