

# Attitudes of registered physiotherapists toward people identifying as lesbian, gay, and bisexual: A cross-sectional survey

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## Research Article

**Keywords:** LGB, attitudes, Physical Therapists, sexual and gender minorities, health-related quality of life, Curriculum, Heterosexuality

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2 **bisexual: A cross-sectional survey.**

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23 **ABSTRACT**

24 **Background:** This study aimed to explore the attitudes of registered physiotherapists in Israel  
25 toward people identifying as lesbian, gay, or bisexual (LGB) and to identify background  
26 characteristics associated with their attitudes toward LGB individuals.

27 **Methods:** This study employed an observational design and was conducted nationwide in Israel.  
28 The anonymous online questionnaire covered participants' demographic characteristics (e.g.,  
29 age, gender, sexual orientation, religious affiliation, and religiousness), two self-assessment  
30 questions regarding levels of homophobia (active engagement against LGB individuals) and  
31 heterosexism (holding negative opinions regarding LGB individuals), and the 22-item Hebrew  
32 version of the Attitudes Toward Homosexuality Scale (ATHS). Participants were recruited  
33 through professional organizations, social media, and word of mouth.

34 **Results:** The data of 383 registered physiotherapists practicing in Israel were analyzed. ATHS  
35 scores ranged between 32 and 110 (out of 110), with a median score of 106 and 41% scoring  
36 below the median. The median score regarding homophobia and heterosexism was one out of  
37 five. Logistic regression indicated that identifying as men, heterosexual orientation, and  
38 religiousness were significantly associated with less positive attitudes toward LGB individuals.  
39 Most participants received considerably limited formal education regarding the specific needs of  
40 sexual minorities.

41 **Conclusions:** Overall, physiotherapists in Israel demonstrated favorable attitudes toward LGB  
42 individuals, as reflected both by ATHS scores and their levels of homophobia and heterosexism.  
43 The current results highlight the need to update the physiotherapy curriculum to include  
44 information regarding sexual orientation and its effect on the mental and physical health of the  
45 LGB community.  
46

47 **Keywords:** LGB, attitudes, Physical Therapists, sexual and gender minorities, health-related  
48 quality of life, Curriculum, Heterosexuality

49

## 50 **BACKGROUND**

51 Sexual minorities often endure poorer physical, mental, and sexual health compared to  
52 heterosexual individuals.<sup>1</sup> People who identify themselves as lesbian, gay, bisexual, transgender,  
53 transsexual, or intersexual (LGBTI) experience lifelong institutional and social discrimination in  
54 areas such as education, employment, recreational activities, and healthcare facilities and  
55 services.<sup>2,3</sup> Stigmatization and derived negative attitudes toward LGBTI people are prevalent  
56 among the general population.<sup>4</sup>

57

58 There is no consensus in the literature regarding the attitudes and behaviors of healthcare  
59 professionals toward sexual minorities. Some studies have reported positive and tolerant attitudes  
60 toward LGBTI people among healthcare professionals.<sup>5,6</sup> However, most studies show that  
61 healthcare professionals, such as physicians,<sup>7</sup> nurses,<sup>7</sup> dentists, mental health professionals,<sup>6,7</sup>  
62 athletic trainers,<sup>8</sup> and social workers,<sup>7</sup> do demonstrate varying degrees of sexual prejudice,  
63 negative attitudes, and biased care toward sexual minority patients. The nature of the attitudes  
64 may depend on the specific profession of the healthcare provider. For example, psychologists  
65 and social workers generally exhibit more positive attitudes toward LGBTI people<sup>7,9</sup> compared  
66 to nurses and physicians.<sup>7,10</sup>

67

68 Only a few studies have focused on the attitudes of physiotherapists (PTs) toward LGBTI  
69 individuals.<sup>11,12,13</sup> Burch,<sup>11</sup> who explored the attitudes of various health professionals toward

70 individuals with spinal cord injuries, demonstrated that PTs (N = 176) generally exhibited  
71 attitudes of tolerance toward patients with diverse sexual orientations. Thus, while 1% of PTs  
72 stated that they “find it difficult to have respect” for LGBTI patients, and another 1% reported  
73 that they have “full respect,”<sup>11</sup> most participants stated, “I have tolerance” and “some respect”  
74 (85% and 13%, respectively). Ross and Setchell focused on the experiences of 108 patients who  
75 identified as LGBTI, queer, or related identities while attending physiotherapy.<sup>13</sup> Almost all  
76 participants reported at least one of the following situations: erroneous assumptions by the PT,  
77 feelings of discomfort, explicit and implicit discrimination, and a lack of knowledge of their  
78 specific health needs.<sup>13</sup>

79  
80 Owing to the paucity of available information, we believe it is crucial to explore PTs’ attitudes  
81 toward individuals identifying as LGB. Understanding these issues may enhance our ability to  
82 promote cultural competence and unbiased care toward sexual minorities, thus promoting  
83 optimal physiotherapy care in accordance with accepted bioethical principles.<sup>14,15</sup>

84 The research questions were:

- 85 1. What are the attitudes of registered PTs in Israel toward people identifying as LGB?
- 86 2. What background characteristics of PTs are associated with their attitudes toward LGB  
87 individuals?

88

## 89 **METHODS**

### 90 **Design**

91 This study employed an observational design. An anonymous nationwide online self-report  
92 survey using Google Forms was conducted between September 2019 and March 2020.

93 Accompanying online instructions indicated that completing and sending the questionnaire was  
94 indicative of informed consent. This study was approved by the Ethics Committee of the Faculty  
95 of Social and Health Sciences at the University of Haifa (number 19/388).

96

## 97 **Participants**

98 Participant recruitment involved the use of social media avenues such as Facebook  
99 physiotherapy professional groups, the newsletter of the Israeli Physiotherapy Society, and word  
100 of mouth among PTs. All respondents were registered PTs in Israel. There were no restrictions  
101 regarding clinical experience and workplace.

102

## 103 **Outcome measures**

104 The following were the outcome measures:

- 105 1. A demographic questionnaire regarding gender, age, education, place of residence, sexual  
106 orientation, professional experience, religious affiliation, and religiousness. This section also  
107 included questions regarding familiarity with individuals within the LGB community and  
108 sources of knowledge regarding LGB individuals.
- 109 2. Two self-assessment questions regarding the individual's level of homophobia and  
110 heterosexism, measured on a five-point Likert scale ranging from one (not at all  
111 homophobic/heterosexist) to five (very homophobic/heterosexist). Definitions of the two terms  
112 were based on Ben-Ari's<sup>16</sup> paper and were provided in the survey to ensure that participants  
113 understood these terms. Thus, "homophobic" was defined as a person who actively acts against  
114 members of the LGB community, and "heterosexist" was defined as a person who holds negative  
115 opinions regarding LGB community members but does not actively act against them.<sup>16</sup>

116 3. Attitudes were evaluated using the Hebrew version of the Attitudes Toward Homosexuality  
117 Scale (ATHS), originally developed by Kite and Deux.<sup>17</sup> The Hebrew version has previously  
118 demonstrated good psychometric properties (internal consistency, Cronbach's alpha = 0.93, and  
119 good test-retest reliability ( $r = .71$ )).<sup>18,19</sup> These results are compatible with the original version.  
120 The Hebrew version of the ATHS includes 22 statements regarding attitudes toward  
121 homosexuality rated on a five-point Likert-type scale ranging from one (strongly agree) to five  
122 (strongly disagree). The overall score ranges from 22 to 110 in the Hebrew version compared to  
123 21 to 105 in the English version (the Hebrew version includes a question about acquired  
124 immunodeficiency syndrome). A higher score indicates more positive attitudes toward the LGB  
125 community. Answers to items 1, 2, 6, 8, 13, 14, 15, 18, 19, 20, and 21 are reverse scored.

126

### 127 **Data analysis**

128 Descriptive statistics were calculated. The ATHS score was converted into a categorical score.  
129 Scores above or equal to the median response of the sample ( $\geq 106$ ) were one category, and  
130 scores below the median ( $< 106$ ) were the second category. The level of heterosexism was  
131 categorized as low (scores 1–2), medium (score 3), and high (scores 4–5). Comparisons between  
132 categorical variables were performed using the Chi-square test and were reported as numbers and  
133 percentages (%). This analysis explored the relationships between the categorical outcome  
134 measures (sex, gender, educational level, place of residence, and sexual orientation), the ATHS  
135 score, and the level of heterosexism.

136

137 Results regarding age and years of experience as a PT were normally distributed. Between-group  
138 comparisons of ATHS scores for these variables were performed using the t-test and univariate

139 analysis of variance (ANOVA) for the level of heterosexism. The level of religiousness was  
140 abnormally distributed, and group comparisons were performed using the Wilcoxon rank-sum  
141 test for the ATHS score and the Kruskal-Wallis test for the level of heterosexism.

142

143 Logistic regression analysis was used for the prediction of the total ATHS score by gender, age,  
144 sexual orientation, religiousness, years of experience, educational level, and place of residence.  
145 Significance was established at p-values  $\leq 0.05$ .

146

## 147 **RESULTS**

### 148 **Flow of participants**

149 The study sample included 383 registered PTs (average age  $39.1 \pm 9.1$  years), with 76% females  
150 and 90% identifying themselves as heterosexuals. Two participants identified themselves as  
151 transgender. Most respondents were Jewish (94%). Overall, 74% identified themselves as  
152 secular, 14% as traditional, and 12% as religious. Further details on participants' personal  
153 characteristics are presented in Table 1. Details on source of information regarding the LGB  
154 community as well as venues of acquaintance are presented in Table 2.

155 [Tables 1 and 2 here]

156 Research question 1: PTs' attitudes toward LGB individuals

157 Table 3 delineates the results of both the ATHS and the two questions regarding levels of  
158 homophobia and heterosexism. The median ATHS score was 106 out of 110. Scores ranged  
159 between 32 and 110, with 41% scoring below the median.

160 [Table 3 here]

161 The median level of homophobia score was one out of five, indicating extremely low levels of  
162 homophobia. The distribution of the answers was unequal across the scale, with 89% scoring one  
163 and 8% scoring two. Accordingly, this outcome measure was not included in further statistical  
164 analyses (group comparisons and logistic regression analysis).

165

166 The median level of heterosexism was also one out of five. However, the distribution of the  
167 results was more balanced, with the percentages of individuals scoring from one to five being  
168 62.4, 7.6, 8.4, 7.1, and 14.5, respectively.

169

170 Research question 2: Association of background characteristics with PTs' attitudes

171 The results of the comparisons regarding the associations of different background characteristics  
172 with ATHS scores as well as the levels of heterosexism are presented in Table 4. Males (and  
173 men) demonstrated significantly less favorable attitudes toward homosexuality, as reflected by  
174 the number of participants scoring below the median on the ATHS and their higher levels of  
175 heterosexism, as compared to females (and women). Conversely, age, educational level, years of  
176 experience, and place of residence were not associated with participants' attitudes toward LGB  
177 individuals, as reflected in the ATHS scores and the question regarding heterosexism.

178 [Table 4 here]

179 Participants belonging to a sexual minority group had more positive attitudes toward LGB  
180 people. Furthermore, individuals identifying themselves as secular demonstrated more positive  
181 attitudes than traditional and religious individuals.

182

183 Logistic regression indicated that gender, sexual orientation, and religiousness were significantly  
184 associated with attitudes toward LGB individuals, as reflected in the ATHS scores. These three  
185 variables accounted for 61% of the variance (see Table 5).

186 [Table 5 here]

## 187 **DISCUSSION**

188 The ATHS is the only validated and reliable tool in Hebrew focusing on attitudes toward  
189 homosexuality. In this study, registered PTs in Israel demonstrated considerably positive  
190 attitudes toward LGB individuals, as reflected by their high ATHS scores. ATHS scores in this  
191 study were higher than those previously reported by Shilo,<sup>19</sup> who targeted social work students in  
192 Israel.<sup>19</sup> However, it is unlikely that this difference between studies is indicative of true  
193 differences in the attitudes of PTs versus social workers. In fact, previous studies consistently  
194 indicated more positive attitudes among social workers toward sexual minorities in comparison  
195 to other health professionals.<sup>7,9,20</sup> In general, changes such as secularization and the increased  
196 demand for individual equality might have increased acceptance of sexual diversity in various  
197 areas of life.<sup>21</sup> Thus, the more positive attitudes reported in this study may reflect the progressive  
198 social, cultural, and legislative changes toward sexual minorities that have occurred in Israel  
199 since the publication of Shilo's study in 2004.<sup>22</sup>

200

201 The majority (97%) of the participants reported low or very low levels of homophobia, thus  
202 indicating that they would not engage in overt activities against members of the LGB  
203 community. Conversely, 22% of the participants stated that they held negative opinions  
204 regarding LGB individuals, as reflected by high or very high levels of heterosexism. This  
205 disparity may be explained by considering the concepts of homophobia and heterosexism as two

206 ends of a continuum representing negative attitudes and behaviors toward the LGB community.<sup>23</sup>  
207 While the high ATHS scores and low self-reported levels of homophobia may reflect  
208 participants' explicit attitudes, their responses to the question regarding heterosexism may be  
209 more representative of implicit attitudes, which are far less positive. Such a disparity between  
210 implicit and explicit attitudes toward the LGB community has been reported in previous studies  
211 as well.<sup>24</sup>

212  
213 The participants were assured of the anonymity of their responses, which, it was assumed, would  
214 allow them to reveal their true attitudes, positive or negative, toward individuals identifying  
215 themselves as LGB. This was particularly important to increase the responsiveness of PTs  
216 belonging to the more traditional, religious sections of the population, where issues relating to  
217 the LGB community are still considered taboo. However, the questionnaires were distributed  
218 through professional and formal channels. This may have led the participants to feel obliged to  
219 comply with societal expectations and the ethical codes of the physiotherapy profession, which  
220 stress a commitment to providing unbiased healthcare to all minority groups.<sup>15</sup> The fact that the  
221 participants demonstrated less favorable implicit attitudes, as demonstrated by their higher self-  
222 reported heterosexism compared to their self-reported homophobia, supports this hypothesis.

223 However, notably, the mean age of the study sample was 39 years, which may also have affected  
224 the discrepancy between the inherent bias toward the LGB community and the willingness of the  
225 registered PTs to demonstrate social activism in accordance with their attitudes.

226

227 Only 2% of the participants stated that they had no knowledge regarding the LGB community.

228 However, only 3% reported having been introduced to this topic during their professional

229 physiotherapy bachelor's or master's degrees. Knowledge regarding sexual orientation has been  
230 demonstrated to be a crucial factor that influences attitudes of professional healthcare providers  
231 toward people identifying themselves as LGB.<sup>25</sup> Previous studies indicate that the knowledge  
232 deficits of healthcare professionals cause them to avoid inquiring about their patients' sexual  
233 orientation, gender identity, and sexual health.<sup>26</sup> The current results highlight the urgent need to  
234 update the physiotherapy curriculum and to design postgraduate education courses that include  
235 knowledge regarding sexual orientation and its effect on mental and physical health issues as  
236 well as the specific needs of the LGB community.

237

238 Several study limitations must be considered. The questionnaires distributed in this study  
239 addressed only PTs' attitudes toward LGB people and not their attitudes toward a wider range of  
240 sexual minorities (i.e., LGBTI, queer, or related identities). The attitudes presented here relate  
241 only to registered PTs in Israel. Therefore, the results may not be representative of PTs  
242 belonging to other countries and cultures. Finally, compliance percentages could not be  
243 calculated as the questionnaires were distributed online and the total number of PTs who chose  
244 not to complete the questionnaires could not be obtained.

245

## 246 **CONCLUSIONS**

247 The current results revealed that gender, sexual orientation, and religiousness are background  
248 characteristics of PTs that are associated with their attitudes toward LGB individuals. More  
249 specifically, PTs who identify themselves as men, heterosexual, and religious or traditional are  
250 more likely to hold negative attitudes toward LGB individuals. Gender has previously been  
251 shown to be a significant predictor of attitudes toward lesbian, gay, bisexual, transgender or

252 transsexual (LGBT) people, with men exhibiting more homophobic attitudes.<sup>27</sup> Religion is  
253 another well-established predictor of negative attitudes toward LGBT people, sexual prejudice,  
254 and acts of discrimination against the LGBT community.<sup>27,28</sup> Thus, religious healthcare  
255 professionals have been known to exhibit more negative attitudes toward LGBT people.<sup>27,29</sup>  
256 Previous studies also support the association between the sexual orientation of healthcare  
257 providers and their attitudes toward LGB individuals, with healthcare professionals who identify  
258 themselves as heterosexuals reporting more negative implicit attitudes compared to sexual  
259 minority healthcare providers.<sup>7,30</sup> Further studies are required to explore how implicit and  
260 explicit attitudes toward people identifying themselves as LGB affect physiotherapy treatment  
261 quality.

262

## 263 **LIST OF ABBREVIATIONS**

264 LGB: lesbian, gay, or bisexual

265 LGBT: lesbian, gay, bisexual, transgender or transsexual

266 LGBTI: lesbian, gay, bisexual, transgender, transsexual, or intersexual

267 PTs: physiotherapists

268 ATHS: Attitudes Toward Homosexuality Scale

269 ANOVA: analysis of variance

270

## 271 **DECLARATIONS**

### 272 **Ethics approval and consent to participate**

273 This study was approved by the Ethics Committee of the Faculty of Social and Health Sciences  
274 at the University of Haifa (number 19/388) and conforms to the ethical principles outlined in the

275 Declaration of Helsinki. Accompanying online instructions indicated that completing and  
276 sending the questionnaire was indicative of informed consent; all participants involved in the  
277 study provided informed consent.

278

279 **Consent for publication**

280 **NA**

281 **Availability of data and materials**

282 The data are available from the corresponding author on reasonable request.

283

284 **Competing interests**

285 Both authors declare no conflict of interest.

286

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288 No funding or financial support was received.

289

290 **Authors' contributions**

291 MEG & RK equally contributed to the conceptualization, methodology, investigation, data  
292 analysis, writing-original draft preparation, and writing-review and editing. Both authors have  
293 read and approved the final manuscript.

294

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298 **REFERENCES**

- 299 1. Perales F. The health and wellbeing of Australian lesbian, gay and bisexual people: A  
300 systematic assessment using a longitudinal national sample. *Aust Nz J Publ Heal*.  
301 2018;43(3):281–287. doi: 10.1111/1753-6405.12855
- 302 2. OECD. Foreword, *Society at a glance 2019: OECD social indicators*. Paris, France:  
303 OECD Publishing. 2019. <https://doi.org/10.1787/89d03b34-en>
- 304 3. Valfort M. LGBTI in OECD countries: A review. *OECD Social, Employment and*  
305 *Migration Working Papers, No. 198*. 2017. Paris, France: OECD Publishing.  
306 <https://doi.org/10.1787/d5d49711-en>
- 307 4. Hatzenbuehler ML. Structural stigma and the health of lesbian, gay, and bisexual  
308 populations. *Curr Dir Psychol Sci*. 2014;23(2):127–132.  
309 <https://doi.org/10.1177/0963721414523775>
- 310 5. Dinkel S, Patzel B, McGuire MJ, Rolfs E, Purcell K. Measures of homophobia among  
311 nursing students and faculty: A Midwestern perspective. *IJNES*. 2007;4(1):Article 24.  
312 <https://doi.org/10.2202/1548-923X.1491>
- 313 6. Kissinger DB, Lee SM, Twitty L, Kisner H. Impact of family environment on future  
314 mental health professionals' attitudes toward lesbians and gay men. *J Homosexuality*.  
315 2009;56(7):894–920. doi: 10.1080/00918360903187853
- 316 7. Sabin JA, Riskind RG, Nosek BA. Health care providers' implicit and explicit attitudes  
317 toward lesbian women and gay men. *AJPH*. 2015;105(9):1831–1841.
- 318 8. Ensign KA, Yiamouyiannis A, White KM, Ridpath BD. Athletic trainers' attitudes  
319 toward lesbian, gay, and bisexual National Collegiate Athletic Association student-  
320 athletes. *J Athl Train*, 2011;46(1):69–75. <https://doi.org/10.4085/1062-6050-46.1.69>

- 321 9. Floyd J, Wofford L. *A Comparison of Attitudes Toward the Lesbian, Gay, Bisexual, and*  
322 *Transgender Populations*. 2020. Retrieved from  
323 <https://repository.belmont.edu/dnpscholarlyprojects/27>
- 324 10. Bartoş SE, Berger I, Hegarty P. Interventions to reduce sexual prejudice: A study-space  
325 analysis and meta-analytic review. *J. Sex Res.* 2014;51(4):363–382.  
326 <https://doi.org/10.1080/00224499.2013.871625>
- 327 11. Burch A. Health care providers’ knowledge, attitudes, and self-efficacy for working with  
328 patients with spinal cord injury who have diverse sexual orientations. *PT*.  
329 2008;88(2):191–198. <https://doi.org/10.2522/ptj.20060188>
- 330 12. Copti N, Shahriari R, Wanek L, Fitzsimmons A. Lesbian, gay, bisexual, and transgender  
331 inclusion in physical therapy: Advocating for cultural competency in physical therapist  
332 education across the United States. *J Phys Ther Educ.* 2016;30(4):11–16.
- 333 13. Ross MH, Setchell J. People who identify as LGBTIQ+ can experience assumptions,  
334 discomfort, some discrimination, and a lack of knowledge while attending physiotherapy:  
335 A survey. *J Physiother.* 2019;65(2):99–105. <https://doi.org/10.1016/j.jphys.2019.02.002>
- 336 14. American Physical Therapy Association. *Code of ethics for the physical therapist*. 2020.  
337 Retrieved from [https://www.apta.org/apta-and-you/leadership-and-](https://www.apta.org/apta-and-you/leadership-and-governance/policies/code-of-ethics-for-the-physical-therapist)  
338 [governance/policies/code-of-ethics-for-the-physical-therapist](https://www.apta.org/apta-and-you/leadership-and-governance/policies/code-of-ethics-for-the-physical-therapist)
- 339 15. World Physiotherapy. *Ethical principles-Policy statement*. 2019. Retrieved from  
340 <https://world.physio/sites/default/files/2020-04/PS-2019-Ethical-principles.pdf>
- 341 16. Ben-Ari AT. Homosexuality and heterosexism: Views from academics in the helping  
342 professions. *Br J Soc Work.* 2001;31(1):119–131.
- 343 17. Kite ME, Deaux D. Attitudes toward homosexuality: Assessment and behavioral

- 344 consequences. *Basic Appl Soc Psych.* 1986;7(2):137–162.  
345 [http://doi.org/10.1207/s15324834basp0702\\_4](http://doi.org/10.1207/s15324834basp0702_4)
- 346 18. Eick U, Rubinstein T, Hertz S, Slater A. Changing attitudes of high school students in  
347 Israel toward homosexuality. *J LGBT Youth.* 2016;13(1–2):192–206.  
348 <http://doi.org/10.1080/19361653.2015.1087930>
- 349 19. Shilo G. *Attitudes toward homosexuality among social work students* (Unpublished  
350 master’s thesis). 2004. Tel Aviv University, Tel Aviv, Israel.
- 351 20. Nowaskie DZ, Patel AU, Fang RC. A multicenter, multidisciplinary evaluation of 1701  
352 healthcare professional students’ LGBT cultural competency: Comparisons between  
353 dental, medical, occupational therapy, pharmacy, physical therapy, physician assistant,  
354 and social work students. *PLOS ONE.* 2020;15(8):e0237670.  
355 <http://doi.org/10.137/journal.pone.0237670>
- 356 21. Vecho O, Poteat V, Schneider B. Adolescents’ attitudes toward same-sex marriage and  
357 adoption in France. *J GLBT Fam Stud.* 2015;12(1):24–45.  
358 [doi:10.1080/1550428X.2015.1040530](https://doi.org/10.1080/1550428X.2015.1040530)
- 359 22. Gross A. The politics of LGBT rights in Israel and beyond: Nationality, normativity, and  
360 queer politics. *Colum Hum Rts LR.* 2014;46(2).
- 361 23. Baker K, Beagan B. Making assumptions, making space: An anthropological critique of  
362 cultural competency and its relevance to queer patients. *Med Anthropol Q.*  
363 2014;28(4):578–598. <http://doi.org/10.1111/maq.12129>
- 364 24. Steffens MC. Implicit and explicit attitudes towards lesbians and gay men. *J Homosex.*  
365 2005;49(2):39–66. [https://doi.org/10.1300/J082v49n02\\_03](https://doi.org/10.1300/J082v49n02_03)
- 366 25. Braun HM, Ramirez D, Zahner GJ, Gillis-Buck EV, Sherrif H, Ferrone M. The LGBTQI

367 health forum: An innovative interprofessional initiative to support curriculum reform.  
368 Med Educ Online. 2017;22(1):1306419. doi:10.1080/10872981.2017.1306419

369 26. Rose D, Ussher JM, Perz J. Let's talk about gay sex: Gay and bisexual men's sexual  
370 communication with healthcare professionals after prostate cancer. Eur J Cancer Care.  
371 2017;26(1):e12469. <http://doi.org/10.1111/ecc.12469>

372 27. Dessel AB, Rodenburg N. Social workers and LGBT policies: Attitude predictors and  
373 cultural competence course outcomes. Sex Res Social Policy. 2017;14(1):17–31.  
374 <http://doi.org/10.1007/s13178-016-0231-3>

375 28. Jäckle S, Wenzelburger G. Religion, religiosity, and the attitudes toward homosexuality-  
376 A multilevel analysis of 79 countries. J Homosex. 2014;62(2):207–241.  
377 doi:10.1080/00918369.2014.969071

378 29. Nye EA, Crossway A, Rogers SM, Games KE, Eberman LE. Lesbian, gay, bisexual,  
379 transgender, and queer patients: Collegiate athletic trainers' perceptions. J Athl Train.  
380 2019;54(3):324–333. <http://doi.org/10.4085/1062-6050-259-17>

381 30. Nathan ML, Ormond KE, Dial CM, Gamma A, Lunn MR. Genetic counselors' and  
382 genetic counseling students' implicit and explicit attitudes toward homosexuality. JOGC.  
383 2018;28(1):91–101. <https://doi.org/10.1007/s10897-018-0295-8>

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**Table 1** Personal characteristics of participants

<b>Characteristics</b>	<b>Participants (N = 383)</b>	
		401
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		403
<b>Age</b> , years, mean $\pm$ SD, range	39.1 $\pm$ 9.1, 23–69	404
<b>Sex</b> , n (%): Male; Female	91 (24); 292 (76)	405
		406
<b>Gender</b> , n (%): Men; Women	93 (24); 290 (76)	407
<b>Sexual orientation</b> , n (%)		408
Heterosexual	346 (90)	409
Lesbian, gay, and bisexual	37 (10)	410
		411
		412
<b>Educational level</b> , n (%)		413
Bachelor's degree	260 (68)	414
Master's degree	111 (29)	415
Doctorate	12 (3%)	416
<b>Religion</b>		417
Judaism	358 (94)	418
Islam	7 (2)	419
Christianity	14 (4)	420
Atheist	3 (1)	421
Missing	1 (0.3)	422
<b>Religiousness</b>		423
Secular	284 (74)	424
Traditional	54 (14)	425
Religious	45 (12)	426
<b>Work experience</b> , years, mean $\pm$ SD, range	12.3 $\pm$ 9.4, 0.5-44	427
<b>Place of work</b> , n (%) <sup>a</sup>		428
Public outpatient care	163 (37)	
Private outpatient care	167 (44)	429
Acute hospital	54 (14)	
Rehabilitation hospital	70 (18)	430
Child development	74 (19)	
Academia	25 (7)	431
Senior citizens' homes	18 (5)	
Others	29 (8)	432
<b>Place of residence</b> n (%)		
Urban	244 (64)	433
Other forms of residence (Village, Kibbutz, etc.)	139 (36)	434

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 436 <sup>a</sup>can exceed 100%  
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 438 SD: standard deviation  
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 440 **Table 2** Knowledge source and acquaintance with lesbian, gay, and bisexual individuals, n (%)

<b>Characteristic</b>	<b>Participants (N = 383)</b>
<b>Sources of knowledge<sup>a</sup></b>	
Have no knowledge on the topic	8 (2)
Bachelor's degree in physiotherapy	5 (1)
Master's degree in physiotherapy	5 (1)
Academic studies, not in physiotherapy	7 (2)
Non-academic studies	22 (6)
Personal interest	215 (56)
Media (e.g., social media, television, newspapers)	254 (66)
Personal acquaintance	301 (79)
<b>Acquaintance with an individual identifying as LGB</b>	
Yes	372 (97)
No	11 (3)
<b>Type of acquaintance with an LGB individual*</b>	
Nuclear family	48 (13)
Extended family	116 (30)
Close social circle	178 (47)
Distant social circle	268 (70)
Patient(s)	161 (42)
Work, school, academy	286 (75)
Other	5 (1)

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 442 <sup>a</sup>can exceed 100%  
 443 LGB: lesbian, gay, and bisexual

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455 **Table 3** Heterosexism and homophobia levels and the ATHS scores (N = 383)

<b>Variable</b>	<b>Median (Range)</b>	<b>Mean (SD)</b>
Self-reported heterosexism levels	1.0 (1.0–5.0)	2.04 (1.52)
Self-reported homophobia levels	1.0 (1.0–5.0)	1.16 (0.53)
<b>Attitudes Toward Homosexuality Scale</b>		
1. I would not mind having homosexual friends.	5.0 (1.0–5.0)	4.82 (0.67)
2. Finding out that an artist was gay would have no effect on my appreciation of his/her work.	5.0 (1.0–5.0)	4.79 (0.76)
3. I would not associate with known homosexuals if I can help it.	5.0 (1.0–5.0)	4.79 (0.75)
4. I would look for a new place to live if I found out my roommate was gay.	5.0 (1.0–5.0)	4.71 (0.86)
5. Homosexuality is a mental illness.	5.0 (1.0–5.0)	4.84 (0.64)
6. I would not be afraid for my child to have a homosexual teacher.	5.0 (1.0–5.0)	4.35 (1.33)
7. Gays dislike members of the opposite sex.	5.0 (1.0–5.0)	4.69 (0.76)
8. I do not really find the thought of homosexual acts disgusting.	5.0 (1.0–5.0)	3.90 (1.34)
9. Homosexuals are more likely to commit deviant sexual acts, such as child molestation, rape, and voyeurism (peeping Toms), than are heterosexuals.	5.0 (1.0–5.0)	4.89 (0.53)
10. Homosexuals should be kept separate from the rest of society (i.e., separate housing, restricted employment).	5.0 (1.0–5.0)	4.95 (0.39)
11. Two individuals of the same sex holding hands or displaying affection in public is revolting.	5.0 (1.0–5.0)	4.68 (0.86)
12. The love between two males or two females is quite different from the love between two persons of the opposite sex.	5.0 (1.0–5.0)	4.34 (1.10)
13. I see the gay movement as a positive thing.	5.0 (1.0–5.0)	4.48 (1.04)
14. Homosexuality, as far as I'm concerned, is not sinful.	5.0 (1.0–5.0)	4.52 (1.16)
15. I would not mind being employed by a homosexual.	5.0 (1.0–5.0)	4.89 (0.50)
16. Homosexuals should be forced to have psychological treatment.	5.0 (1.0–5.0)	4.89 (0.55)
17. The increasing acceptance of homosexuality in our society is aiding in the deterioration of morals.	5.0 (1.0–5.0)	4.59 (1.05)
18. I would not decline membership in an organization just because it has homosexual members.	5.0 (1.0–5.0)	4.89 (0.59)
19. I would vote for a homosexual in an election for public office.	5.0 (1.0–5.0)	4.73 (0.77)
20. If I knew someone were gay, I would still go ahead and form a friendship with that individual.	5.0 (1.0–5.0)	4.86 (0.52)
21. If I were a parent, I could accept my son or daughter being gay.	5.0 (1.0–5.0)	4.50 (0.90)
22. Homosexuals are guilty of spreading AIDS.	5.0 (1.0–5.0)	4.51 (0.82)
Total Attitudes Toward Homosexuality Scale score	106.00 (32.00–110.00)	102.61 (11.54)

456 Notes: We used the validated Hebrew version but are presenting here the original English  
457 version questions; questions 1, 2, 6, 8, 13, 14, 15, 18, 19, 20, and 21 were reverse scored.  
458 Question 22 was added and validated for the Hebrew version of the questionnaire.  
459 SD: standard deviation; AIDS: acquired immunodeficiency syndrome  
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497 **Table 4** Comparative analysis of background characteristics and attitudes toward homosexuality

		ATHS score			Levels of heterosexism			
		< 106 (n=158)	≥ 106 (n=225)	P value	1/2 (n = 268)	3 (n = 32)	4/5 (n = 83)	P value
Sex, n (%) <sup>a</sup>	Male	53 (34)	38 (17)	< 0.01	53 (20)	11 (34)	27 (32)	0.02
	Female	105 (66)	187 (83)		215 (80)	21 (66)	56 (68)	
Gender, n (%) <sup>a</sup>	Men	54 (34)	39 (17)	< 0.01	55 (21)	11 (34)	27 (32)	0.03
	Women	104 (66)	186 (83)		213 (79)	21 (66)	56 (68)	
Education MA/PhD, n (%) <sup>a</sup>	Yes	52 (33)	71 (32)	0.78	87 (33)	10 (31)	26 (31)	0.98
	No	106 (67)	154 (68)		181 (67)	22 (69)	57 (69)	
Place of residence, n (%) <sup>a</sup>	Urban	100 (63)	144 (64)	0.89	176 (66)	17 (53)	51 (62)	0.34
		58 (37)	81 (36)		92 (34)	15 (47)	32 (38)	
Sexual orientation, n (%) <sup>a</sup>	Not LGB	151 (96)	195 (87)	< 0.01	235 (88)	29 (91)	82 (99)	0.01
	LGB	7 (4)	30 (13)		33 (12)	3 (9)	1 (1)	
Religiousness, n (%) <sup>b</sup>	Secular	89 (56)	195 (87)	< 0.01	216 (80)	18 (56)	50 (60)	< 0.01
	Traditional	32 (20)	22 (10)		31 (12)	6 (19)	17 (21)	
	Religious	37 (24)	8 (3)		21 (8)	8 (25)	16 (19)	
Age (years), mean ± SD <sup>c</sup>		38.1 ± 9.1	39.8 ± 9.0	0.06	39.0 ± 9.0	38.2 ± 9.3	39.8 ± 9.3	0.6
Years of experience, mean ± SD <sup>c</sup>		11.4 ± 9.2	12.8 ± 9.4	0.16	12.1 ± 9.2	11.91 ± 9.6	12.9 ± 9.8	0.6

499 <sup>a</sup>Chi-square test, <sup>b</sup>Wilcoxon and Kruskal-Wallis tests, <sup>c</sup>t-test and univariate analysis of variance

500 ATHS: Attitudes Toward Homosexuality Scale; SD: standard deviation; LGB: lesbian, gay, and  
501 bisexual

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512 **Table 5** Results for the prediction of ATHS scores (odds ratio, confidence interval)

	<b>ATHS Score (<math>\geq 106</math>)</b>
Age	1.08 (0.98–1.19)
Gender (men)	0.24 (0.14–0.43) ***
Sexual orientation (heterosexual)	0.22 (0.08–0.57) **
Religiousness (traditional)	0.27 (0.14–0.52) ***
Religiousness (religious)	0.09 (0.04–0.22) ***
Years of experience	0.93 (0.85–1.03)
Educational level (holding MA/PhD)	0.82 (0.48–1.38)
Place of residence (urban)	0.72 (0.44–1.19)
Wald (df)	61.3 (8) ***
C statistic	0.76

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514 \*p value < 0.05, \*\*p value < 0.01, \*\*\*p value < 0.0001

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