

# Acceptance of Lesbian, Gay, Bisexual, and Transgender Patients, Attitudes About Their Treatment, and Related Medical Knowledge Among Osteopathic Medical Students

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**Context:** Limited research exists on the health issues faced by lesbian, gay, bisexual, and transgender (LGBT) patients, as viewed in the context of osteopathic medical education. A full understanding of current medical students' acceptance of, attitudes toward, and knowledge of these issues could lead to the development and incorporation of curricula focusing on the care of LGBT patients into colleges of osteopathic medicine (COMs).

**Objective:** To determine among osteopathic medical students the levels of acceptance of LGBT patients, attitudes toward treating this population, and medically relevant knowledge about their distinct health-related issues.

**Methods:** In August 2012, students at 6 COMs were sent an e-mail invitation that contained basic information about the study and a link providing access to an anonymous Web-based survey. Standard scales used in previous studies were compiled and individualized into 130 items for the purposes of the present study.

**Results:** Of the 4112 osteopathic medical students contacted, 1698 (41.3%) entered the survey and 1335 (32.5%) completed it. Two hundred respondents (15%) self-identified as having a sexual orientation on the lesbian, gay, or bisexual (LGB) spectrum. Although respondents generally had favorable levels of acceptance of LGBT patients and positive attitudes toward treatment of this population, self-identified LGB students had even greater acceptance of LGBT patients ( $P<.001$ ) and more positive attitudes toward their treatment ( $P<.001$ ). When medically relevant knowledge of issues related to the health of LGBT patients was assessed, 125 respondents (12.9%) obtained a passing score of 7 or higher, with LGB students scoring significantly higher than students whose self-identified sexual orientation was heterosexual only ( $P=.01$ ). Differences in the levels of acceptance ( $P=.008$ ), treatment attitudes toward ( $P=.001$ ), and relevant medical knowledge ( $P=.05$ ) pertaining to LGBT patients were noted between respondents from the 6 COMs.

**Conclusion:** The results suggest that even though osteopathic medical students had mostly positive personal attitudes and treatment attitudes toward LGBT patients, some disparities were still present. Also, students lacked adequate knowledge of the unique medical issues faced by the LGBT population. In the future, students should be given more training to effectively treat LGBT patients and their health-related issues.

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**H**ealth care disparities related to lesbian, gay, bisexual, and transgender (LGBT) populations are of growing interest in the medical community. Historically, the health issues affecting LGBT patients have been sparsely studied and widely neglected in medical education.<sup>1,2</sup>

Lesbian, gay, bisexual, and transgender patients present unique challenges for physicians. In this population, the prevalence and incidence of certain diseases are distinct.<sup>3,4</sup> For example, lesbians may have a higher risk for breast or ovarian cancer, and gay men have an increased risk for cancer caused by human papillomavirus. Research suggests that among LGBT individuals, health care disparities linked to social stigma, discrimination, and denial of civil and human rights have in turn been associated with high rates of psychiatric disorders, substance abuse, unreported domestic violence, and suicide.<sup>4</sup> In addition, many physicians believe that they are unprepared to care for LGBT patients and that disparities in their treatment exist.<sup>5-9</sup> Compared with non-LGBT patients, LGBT patients receive substandard care or are denied care because of their sexual orientation.<sup>7,10</sup> Evidence further suggests that LGBT patients are hesitant to disclose their sexual orientation to health care professionals because they fear discriminatory treatment.<sup>11-13</sup> This lack of disclosure may result in physicians making heteronormative assumptions about their LGBT patients and may ultimately lead to a poor patient-physician relationship and provision of insufficient or careless treatment.<sup>14</sup>

The foundation of the patient-physician relationship is established during the early years of medical education, but few medical schools, including colleges of osteopathic medicine (COMs), incorporate issues related to the health care of LGBT patients into their curricula.<sup>15</sup> Research suggests that increasing exposure to LGBT patients and their health-related issues results in medical students having greater knowledge of the health concerns of this population and perhaps providing better patient care.<sup>16,17</sup> In addition, Hardacker et al<sup>18</sup> found that

including LGBT material within the education system resulted in increased knowledge and more positive attitudes. As such, incorporating profession-wide competencies can lead to more effective patient care.

The purpose of the present study was to determine the levels of acceptance of LGBT patients, attitudes toward treatment of this population, and medically relevant knowledge among osteopathic medical students. To our knowledge, the present study is the first to focus solely on the osteopathic medical profession. We hypothesized that osteopathic medical students who self-identified as heterosexual would have lower levels of acceptance of LGBT patients and more negative attitudes toward their treatment and that all students would have deficiencies in medically relevant knowledge about the unique health concerns of this population. We did not anticipate any differences in our 3 outcome variables when assessing the responses of students from different COMs.

## Methods

### Data Collection

In August 2012, we sent e-mail invitations to the dean's office and academic affairs office at all COMs requesting their participation in a survey-based study examining acceptance of and delivery of health care to LGBT patients. The invitations included basic information about the study as well as a request that the COM e-mail all medical students a study recruitment letter and a hyperlink to the online survey. Six schools responded to the invitation and agreed to participate.

Students who received the e-mailed study recruitment letter accessed the survey through the Web link provided. They were then directed to a page where they were asked to provide informed consent for their data to be used for research purposes. The informed consent conveyed that participation was voluntary and that participants could exit the survey at any time. The survey, which took approximately 15 minutes to complete, was entirely Web based and collected no identifiable informa-

tion from students. Upon reaching the end of the survey, regardless of whether they had fully completed it, students were compensated for their time with a \$5 gift card to Amazon.com. The institutional review board at the A.T. Still University-Kirksville College of Osteopathic Medicine approved all study procedures.

### Outcome Measures

The measures examined in the present study consisted of standard scales used in previous research.<sup>17,19-21</sup> However, the survey itself was individualized for the purposes of the current study—using a unique combination of scales not used in previous research—and contained approximately 130 items. Participants were asked to provide basic demographic information (ie, sex, age, race), identify the COM they attended, and indicate their current class year.

The Klein Sexual Orientation Grid evaluates a variety of aspects of an individual's sexual identity in the past, present, and ideal future.<sup>21</sup> The grid includes a 7-point scale assessing 7 different dimensions of sexual orientation, with 1 representing a heterosexual-only orientation and 7 denoting a homosexual-only orientation, for a total possible score range of 7 to 49. For the purposes of the present study, participants with a total score of 7 were classified as heterosexual only and all other total scores were classified on the lesbian, gay, and bisexual (LGB) spectrum. This section was the only required section of the survey; students who skipped or refused to answer this portion were not included in the analyses.

The Homosexuality Attitude Scale,<sup>20</sup> which uses a 5-point Likert design to assess stereotypes, misconceptions, and overall views about homosexual individuals, was included in the survey to determine the study participants' levels of acceptance of LGBT patients. It has been shown to have excellent internal consistency ( $\alpha > .92$ ) and good test-retest reliability ( $r = 0.71$ ).<sup>21</sup> Four subscale factors were included in the Homosexuality Attitude Scale: condemnation or tolerance, social norms and morality, contact, and stereotypes. The 11-item condemnation or

tolerance subscale evaluated the extent to which study participants tolerate homosexuality. The 13-item social norms and morality subscale (sample item: "The increasing acceptance of gay men/lesbians in our society is aiding in the deterioration of morals") ascertained participants' views on moral aspects of homosexuality. The 18-item contact subscale (sample item: "I would not want a gay man/lesbian to live in the house next to mine") determined participants' level of comfort with various forms of contact with either gay men or lesbians. Finally, the 7-item stereotypes subscale assessed the participants' preconceived misconceptions and stereotypes about homosexuality.

To assess the treatment attitudes and medically relevant knowledge of the study participants, a scale including multiple items was adapted from a study by Sanchez et al.<sup>17</sup> The treatment attitudes portion of the scale used a 5-point Likert scale to assess the efficacy of care provided to LGBT patients. Participants answered 27 questions about their clinical communication skills, desire to care for LGBT patients, comfort in caring for LGBT patients, and views of physician responsibilities to LGBT patients. The medically relevant knowledge scale<sup>17</sup> consisted of 9 true-or-false, knowledge-based questions pertaining to the health-related issues faced by the LGBT population. Participants were given raw percentage scores on the basis of the number of questions answered correctly.

### Data Analysis

Because of a nonnormal distribution, analyses of medical students' acceptance of LGBT patients and attitudes toward treating this population were performed using Mann-Whitney and Kruskal-Wallis tests. The scale assessing medically relevant knowledge of the health issues faced by LGBT patients was examined using 1-way analysis of variance. Surveys were analyzed using SPSS statistical software (version 18.0 predictive analytic program, SPSS Inc). A *P* value of .05 was considered statistically significant.

A Cronbach  $\alpha$  correlation coefficient was used to assess the internal consistency of the scales. For the Homosexuality Attitude Scale, the overall Cronbach  $\alpha$  value was .97. For the 4 subscales (condemnation or tolerance, social norms and morality, contact, and stereotypes), the Cronbach  $\alpha$  values were .80, .95, .93, and .83, respectively. The treatment attitudes scale had a Cronbach  $\alpha$  value of .80.

## Results

### Characteristics of Study Participants

Of the 4112 students at the 6 COMs that agreed to join the study, a total of 1698 (41.3%) entered the survey and 1335 (32.5%) finished the required section (ie, Klein's Sexual Orientation Grid). No statistically significant differences were noted between students who completed the entire survey and those who dropped out.

Table 1 provides details about the demographic characteristics of the 628 male and 706 female osteopathic medical students (the remaining students either indicated that information on sex was not applicable or chose not to answer). With regard to race, the sample was fairly homogenous, with 1047 students (78.4%) self-identifying as white. Slightly higher numbers of first-year ( $n=410$ ) and second-year ( $n=394$ ) students completed the survey, compared with third-year ( $n=272$ ) and fourth-year ( $n=253$ ) students. With regard to sexual orientation, 200 respondents (15%) self-identified on the LGB spectrum, a percentage that is fairly consistent with the rate in the general population.<sup>22</sup>

### Comparisons of Student Responses

Osteopathic medical students whose self-identified sexual orientation was on the LGB spectrum reported having higher levels of acceptance of homosexuality (Table 2) than did students who self-identified as heterosexual only ( $z=-11.1$ ;  $P<.001$ ). When the subscales of the Homosexuality Attitude Scale were compared, LGB students were found to have levels of acceptance that

**Table 1.**  
Demographic Characteristics  
of Survey Respondents (N=1335)

Characteristic	No. (%) <sup>a</sup>
<b>Sex</b>	
Male	628 (47.1)
Female	706 (52.9)
Transgender	0
NA	1 (0.1)
<b>Age, y</b>	
18-25	612 (45.9)
26-35	669 (50.1)
36-45	48 (3.6)
46-55	6 (0.4)
>55	0
<b>Race</b>	
White	1047 (78.4)
Nonwhite	256 (19.2)
NA	32 (2.4)
<b>Year in School</b>	
First year	410 (30.7)
Second year	394 (29.5)
Third year	272 (20.4)
Fourth year	253 (19.0)
NA	6 (0.4)
<b>Self-identification</b>	
Heterosexual only	1135 (85.0)
LGB	200 (15.0)

<sup>a</sup> Some percentages do not total 100 because of rounding.

**Abbreviations:** LGBT, lesbian, gay, or bisexual; NA, not applicable or the student chose the response, "Prefer not to answer."

**Table 2.**  
**Acceptance of Lesbian, Gay, Bisexual, and Transgender**  
**Patients by Osteopathic Medical Students (N=1335)**

Homosexuality Attitude Subscale	n	Response, No. (%) <sup>a</sup>				Mean (SD)
		Strong Positive	Positive	Neutral	Negative	
Condemnation or tolerance	1210	523 (43.2)	614 (50.7)	64 (5.3)	9 (0.7)	1.4 (0.54)
Social norms and morality	1248	286 (22.9)	606 (48.6)	192 (15.4)	164 (13.1)	1.9 (1.1)
Contact	1280	89 (7.0)	940 (73.4)	196 (15.3)	55 (4.3)	1.8 (0.75)
Stereotypes	1320	148 (11.2)	786 (59.5)	352 (26.7)	34 (2.6)	2.0 (0.75)
Overall	1247	25 (2.0)	997 (80.0)	194 (15.6)	31 (2.5)	1.8 (0.68)

<sup>a</sup> Some percentages do not total 100 because of rounding. Respondents were not required to answer all survey items.

were statistically significantly different than those of heterosexual students. Compared with heterosexual students, LGB students had higher levels of tolerance of the LGBT population ( $z=-5.0$ ;  $P<.001$ ), were more likely to view homosexual orientation as moral ( $z=-10.7$ ;  $P<.001$ ), felt more comfortable being in contact with the LGBT population ( $z=-13.7$ ;  $P<.001$ ), and did not report having as many stereotypes about the LGBT population ( $z=-7.4$ ;  $P<.001$ ). When the treatment attitudes (Table 3) of self-identified LGB osteopathic medical students were compared with those of self-identified heterosexual-only students, LGB students had more favorable treatment attitudes toward LGBT patients ( $z=-3.5$ ;  $P<.001$ ).

A majority of student respondents had low scores on the scale assessing medically relevant knowledge of the health issues of LGBT individuals (Figure 1), with only 125 respondents (12.9%) obtaining a passing score of 7 or higher. When the medically relevant knowledge of self-identified LGB osteopathic medical students was compared with that of self-identified heterosexual-only students, both groups indicated having a lack of knowledge about medical issues faced by the LGBT population. However, the LGB students had higher knowledge scores than the heterosexual students ( $F_{1,934}=6.58$ ;  $P=.01$ ).

### Comparisons of Student Responses by COM

When survey results were compiled and assessed, each school was randomly assigned a letter for identification purposes to maintain confidentiality. Differences existed in responses to statements assessing general attitudes toward LGBT patients ( $\chi^2_5=15.8$ ;  $P=.008$ ), attitudes toward their treatment ( $\chi^2_5=21.6$ ;  $P=.001$ ), and medically relevant knowledge of the health issues facing this population ( $F_{1,921}=2.28$ ;  $P=.05$ ) among students at the 6 COMs participating in the study (Figure 2).

### Discussion

The purpose of the current study was to examine among osteopathic medical students levels of acceptance of LGBT patients, attitudes toward treatment of this population, and medically relevant knowledge about their health-related issues. The results suggest that personal attitudes toward and approaches to treatment of LGBT patients were primarily positive, although some disparities were present. The students' medically relevant knowledge of health issues faced by LGBT patients was poor. These results are not surprising considering that LGBT patients tend to have unique medical issues<sup>3,4</sup> but

**Table 3.**  
**Attitudes of Osteopathic Medical Students Toward Treatment of Lesbian, Gay, Bisexual, and Transgender Patients (N=1335)**

Survey Item	n	Response, No. (%) <sup>a</sup>					Mean (SD)
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Lesbian and gay patients deserve the same level of quality care from medical institutions as heterosexual patients.	1317	12 (0.9)	3 (0.2)	16 (1.2)	56 (4.3)	1230 (93.4)	4.9 (0.50)
Gay and lesbian patients should only seek health care from gay and lesbian health clinics.	1317	1087 (82.5)	153 (11.6)	54 (4.1)	10 (0.8)	13 (1.0)	1.3 (0.66)
Physicians in private practice have a responsibility to treat LGBT patients.	1313	36 (2.7)	31 (2.4)	91 (6.9)	163 (12.4)	992 (75.6)	4.6 (0.93)
I would be comfortable if I became known among my professional peers as a doctor who cares for LGBT patients.	1309	19 (1.5)	20 (1.5)	103 (7.9)	199 (15.2)	968 (73.9)	4.6 (0.82)
I am concerned that if my heterosexual patients learned that I was treating LGBT patients, they would no longer seek my care.	1314	736 (56.0)	317 (24.1)	143 (10.9)	97 (7.4)	21 (1.6)	1.7 (1.02)
I would be comfortable telling my intimate partner that I cared for LGBT patients.	1312	24 (1.8)	6 (0.5)	48 (3.7)	144 (11.0)	1090 (83.1)	4.7 (0.72)

<sup>a</sup> Some percentages do not total 100 because of rounding. Respondents were not required to answer all survey items.

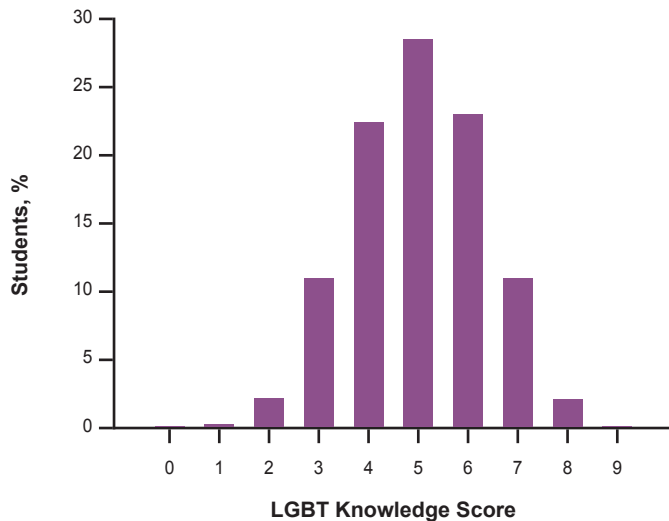
**Abbreviation:** LGBT, lesbian, gay, bisexual, and transgender.

experience substandard treatment and other health care disparities.<sup>12,14</sup> Many physicians admit to feeling unprepared to care for this patient population, and medical school curricula spend little time providing appropriate related training.<sup>5,15</sup> Very little research has been done in this area, and, to our knowledge, no studies have focused only on osteopathic medical students.

We found that LGB students had higher levels of acceptance than heterosexual medical students with regard to tolerance, morality, contact, and stereotypes. Similar results were found in a study examining college students' attitudes toward the LGBT population, with women and self-identified LGBT individuals displaying more positive attitudes than other student groups.<sup>23</sup> However, in the present study, most student respondents were accepting

of the LGBT population. These results are similar to those from a study performed by Matharu et al,<sup>24</sup> who examined the attitudes of allopathic medical students toward gay men. Our study also included a subset of respondents who reported low levels of acceptance. Negative attitudes have also been observed in previous research showing that homophobia and prejudicial treatment still exist in the health care field.<sup>25,26</sup> Research has found that discrimination against and derogatory remarks directed at the LGBT population are regularly witnessed by health care professionals.<sup>27</sup>

When we compared respondents' attitudes toward treating LGBT patients, students who self-identified as LGB had more positive treatment attitudes than heterosexual students, although a majority of all participants



**Figure 1.** Scores of osteopathic medical students on the scale assessing the medically relevant knowledge of health issues affecting lesbian, gay, bisexual, and transgender (LGBT) patients (n=972).

generally had positive attitudes. This finding suggests that students believed that all patients deserve the same quality of care, regardless of sexual orientation. However, as with levels of acceptance, a subset of respondents indicated having negative attitudes toward treating LGBT patients.

Taken together, the results of these outcome measures suggested that student respondents could be classified into 3 main groups. The first group viewed homosexuality in a positive light and believed that all patients, regardless of sexual orientation, deserve effective health care. The second group was neutral regarding both issues. The third group viewed homosexuality in a negative light and seemed to indicate that self-identified LGBT patients did not deserve the same treatment as their heterosexual counterparts. This third group is an important minority to consider, because research has shown that health care professionals who have negative attitudes toward individuals engaging in same-sex be-

havior have been found to provide inadequate care for LGBT individuals.<sup>25</sup>

The finding that both students who identified on the LGB spectrum and heterosexual students lacked adequate knowledge of medical issues facing the LGBT population suggests a need for better education in this area. These results parallel those from a study conducted by Sanchez et al,<sup>17</sup> who suggested that medical students had poor overall medical knowledge, especially in the areas of mental health, cancer risk, risk of human immunodeficiency virus infection, and nutrition. Other studies have suggested an association between attitudes and knowledge, with students who had less knowledge about sexual minorities displaying the worst attitudes toward those groups.<sup>28,29</sup>

The attitudes and knowledge of medical students play a role in influencing the future patient-physician relationship. Failure to disclose sexual orientation and behaviors can lead to a strained patient-physician relationship and adverse psychological results.<sup>30</sup> Research has suggested that openly disclosing one’s sexual orientation to a physician makes a patient feel like a whole person.<sup>30</sup> Medical schools should improve training to create more culturally competent physicians who can effectively care for LGBT patients. In the osteopathic medical profession, a research initiative is under way with the goals of improving educational outcomes for LGBT students and increasing levels of cultural competency for all students treating LGBT patients. This initiative involves the development of a model that will allow for the creation of a curriculum that acknowledges and embraces diversity. The LGBT curriculum will be submitted for publication in the near future and will be made available to all COMs.

In evaluating the responses of students attending the 6 different COMs that participated in our study, we were surprised to find differences in their levels of acceptance of LGBT patients, attitudes toward treatment of this population, and medically relevant knowledge about their unique health-related issues. To our knowledge, no previous study has compared responses from students at different COMs.

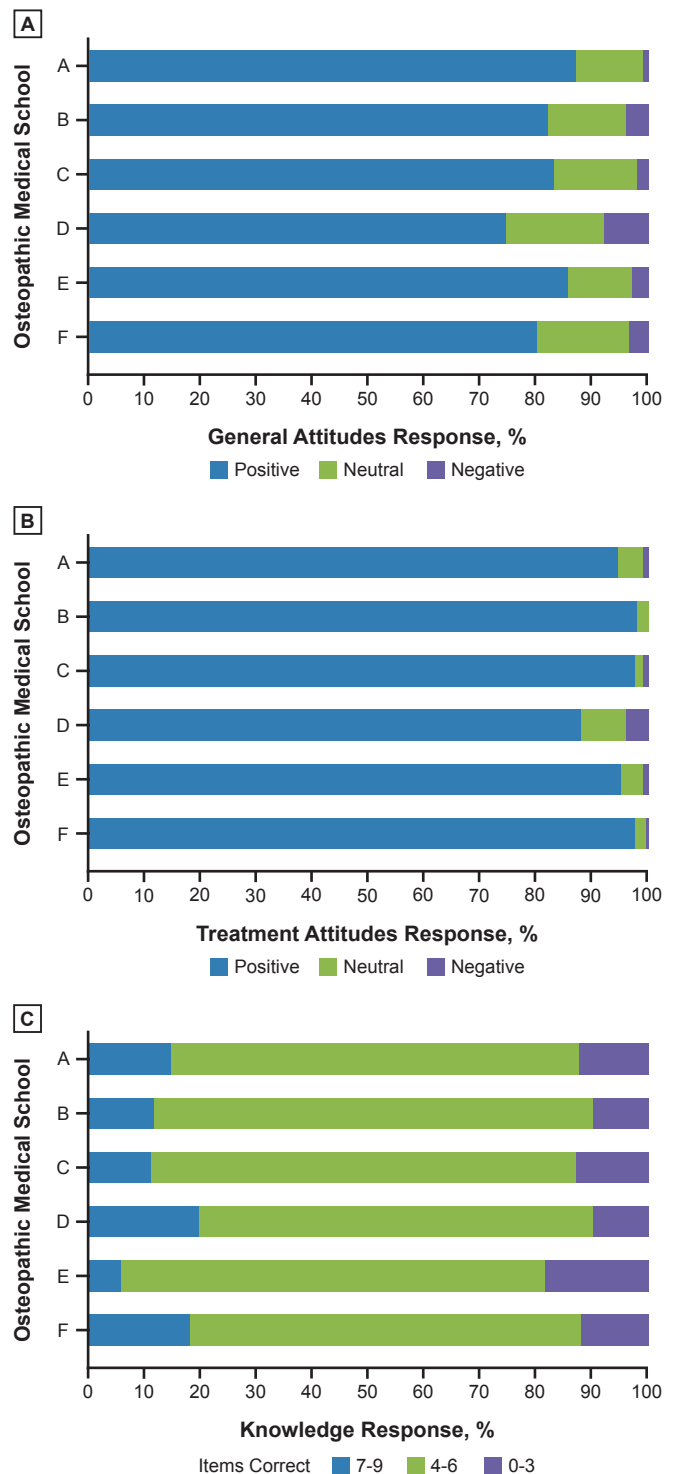
Therefore, these results may be useful in elucidating the educational emphasis of a given school. Future research should examine what distinguishes these schools from one another and determine how to instill consistency in cultural competency training.

The present study had several limitations. Although a large number of students participated, they represented only 6 of the 26 COMs that were originally invited to participate. Therefore, students at COMs in the southern and eastern regions of the United States were underrepresented. In addition, previous research suggested that social desirability bias often limits the disclosure of negative attitudes,<sup>31</sup> and this potential bias may explain the high percentage of positive attitudes noted in the current study. Finally, a self-selection bias may have affected our results. If students with negative views of the LGBT population did not participate in the study, their absence may have caused there to be more positive results than would otherwise exist.

Future research on this topic should examine various elements of LGBT health care delivery. In particular, studies should investigate whether congruency exists between the physician's and the patient's perceptions of effectiveness of care. Studies should also evaluate the distinguishing characteristics of medical students with regard to both their general attitudes and treatment attitudes toward LGBT patients, placing focus on personality facets, familial influences, and cultural and congregational contexts to identify distinguishing factors. Another area for investigation is the differences in the responses of students from different schools.

### Conclusion

Overall, the results of the present study indicate that the osteopathic medical students surveyed had a positive approach toward LGBT patients. However, some disparities existed. These results can be used to establish a more effective approach for training medical students to manage health-related issues faced by the LGBT population.



**Figure 2.** Comparison of (A) the general attitudes of students (n=1316), (B) the treatment attitudes of students (n=1307), and (C) the health knowledge scores of students (n=967) at 6 colleges of osteopathic medicine toward lesbian, gay, bisexual, and transgender patients (5 respondents did not identify their school and thus were excluded from this figure).



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