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Attitudes about diverse patient populations in health professions students

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Attitudes about diverse patient populations in health professions students

Abstract
Obesity stigma is thought by some to be the last “acceptable” form of stigma. Stigma against obese individuals has been found not only in the general public, but in health professionals as well. In addition, some research has linked levels of obesity stigma to lower quality care of obese patients. This study proposes use of a universal measure of bias to compare levels of obesity stigma to stigma against two other highly stigmatized groups: individuals who identify as lesbian, gay, or bisexual (LGB) and Muslims. Students enrolled in eight different health professions programs at a university in the Pacific Northwest were recruited for the study. Results indicated that health professions students had significantly more bias towards obese individuals than towards LGB or Muslim individuals. Levels of obesity stigma were not significantly associated with graduate program. Similarly, analyses did not reveal differences in levels of obesity stigma based on number of years enrolled in a health professions program. This study shows that obesity stigma is not just a problem at the professional level in the medical field, but it is also present at the student level.

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ATTITUDES ABOUT DIVERSE PATIENT POPULATIONS IN HEALTH PROFESSIONS STUDENTS

A DISSERTATION DEFENSE

SUBMITTED TO THE FACULTY

OF

SCHOOL OF PROFESSIONAL PSYCHOLOGY

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HILLSBORO, OREGON

BY

KIMBERLY COPPERSMITH

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DOCTOR OF PSYCHOLOGY

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Abstract

Obesity stigma is thought by some to be the last “acceptable” form of stigma. Stigma against obese individuals has been found not only in the general public, but in health professionals as well. In addition, some research has linked levels of obesity stigma to lower quality care of obese patients. This study proposes use of a universal measure of bias to compare levels of obesity stigma to stigma against two other highly stigmatized groups: individuals who identify as lesbian, gay, or bisexual (LGB) and Muslims. Students enrolled in eight different health professions programs at a university in the Pacific Northwest were recruited for the study. Results indicated that health professions students had significantly more bias towards obese individuals than towards LGB or Muslim individuals. Levels of obesity stigma were not significantly associated with graduate program. Similarly, analyses did not reveal differences in levels of obesity stigma based on number of years enrolled in a health professions program. This study shows that obesity stigma is not just a problem at the professional level in the medical field, but it is also present at the student level.

Keywords: obesity, homosexual, Muslim, stigma, bias, health professionals, health professions students
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**Introduction**

More than one-third of adults in the United States are obese. This figure has increased dramatically in the past few decades, but seems to be slowing down or leveling off over the last few years (Ogden & Carroll, 2010). Recent reviews have indicated that significant levels of stigma towards obese individuals exist in both the general population as well as in the medical field (Puhl & Heuer, 2009). In fact, obesity stigma is thought by some to be the last “acceptable” form of stigma (Puhl & Brownell, 2001). In most westernized countries, social norms have been developed instructing members of society to suppress overt prejudice against multiple groups such as gender, race, sexual orientation, and religion (Latner, O’Brien, Durso, Brinkman, & McDonald, 2008) and laws have been passed protecting many groups from discrimination in the workplace and even discrimination in the form of hate crimes. However, similar protection for obese individuals, who are highly stigmatized and discriminated against, does not exist (Latner et al., 2008).

There has been little research comparing levels of stigma across highly stigmatized groups. In 1994, Crandall found that subjects made more favorable ratings of a confederate when she expressed prejudice toward fat people than when she expressed prejudice toward black people. Following this study, Latner et al. (2008) developed the Universal Measure of Bias to adequately compare levels of bias across different groups. She found that the relative strength of bias against obese individuals was significantly greater than bias against gay and Muslim individuals among an undergraduate sample. This study is an extension of the Latner et al. (2008) study and is designed to examine levels of bias in a population of health professions students.
Numerous studies have examined levels of obesity stigma in health professionals and have found that, while levels of obesity in health providers are generally lower than those found in the general population, they are still relatively high (Teachman & Brownell, 2001). However, the literature on levels of stigma against obesity and other highly stigmatized groups in health professions students is scarce. This is concerning given that health professions students are the future of health care and will be treating increasing numbers of obese patients due to the increase in prevalence of obesity over the past few decades and the association between obesity and deleterious health conditions such as hypertension, hyperlipidemia, type 2 diabetes, obstructive sleep apnea (Pi-Sunyer, 1999).

**Literature Review**

**Stigma Towards Obesity**

Obesity stigma is highly prevalent in the United States and has been known to have detrimental effects on obese individuals including social injustice, unfair treatment, and impaired quality of life (Puhl & Heuer, 2009). In fact, obesity stigma has been coined the last “acceptable” form of bias (Puhl & Brownell, 2001), and bias towards obese individuals has increased by 66% in the past decade (Puhl, Andreyeva, & Brownell, 2008). Stigma against obesity has been found to be stronger than that against Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, and Major Depressive Disorder. This is thought be because persons with obesity are held more responsible for their condition than those with other mental health concerns (Ebneter & Latner, 2013), despite the extensive research indicating that obesity is a complex condition caused by multiple factors, many of which are outside an individual’s control.

As a result of the overwhelming levels of obesity stigma in our society, obese persons face a great deal of discrimination based on their weight. Even thin individuals who have
previously been obese experience stigma related to their previous weight (Latner, Ebneter, & O’Brien, 2012). Weight/height discrimination is the third most common type of discrimination among women and the fourth most prevalent form of discrimination reported by all adults, with obese individuals facing up to 40-50% more discrimination than normal weight persons. These levels of discrimination occur in employment and interpersonal relationships as often as racial discrimination (Puhl et al., 2008).

In employment settings, overweight individuals are 12 times more likely, obese individuals 37 times more likely, and severely obese individuals 100 times more likely than normal weight persons to report experiencing discrimination (Puhl et al., 2008). Obese individuals have reported discrimination based on their weight that includes not being hired for a job, not receiving a promotion, wrongful termination (Puhl et al., 2008), and lower wages (Baum & Ford, 2004; Brunello & D’Hombres, 2007; Cawley, 2004; Maranto & Stenoien, 2000).

A meta-analysis done by Roehling, Pilcher, Oswald, and Bruce (as cited in Puhl & Heuer, 2009) examined weight discrimination in employment settings. The outcome variables included hiring recommendations, qualification/suitability ratings, disciplinary decisions, salary assignments, placement decisions, and coworker ratings. Results showed that overweight job applicants and employees were not only evaluated more negatively, but were also shown to have more negative employment outcomes compared to normal weight applicants and employees. The discrimination faced by obese employees may in part be due to views from co-workers that they are less conscientious, less agreeable, less emotionally stable, and less extraverted than non-obese employees (Klassen, Jasper, & Harris, 1993; Kleges et al., 1990; Polinko & Popovich, 2001) despite evidence that there are no differences in personality traits found between obese and normal weight employees. In fact, the results of this study indicated that personality and
demographic factors such as age or gender were more strongly related than personality traits and BMI (Roehling, Roehling, & Odland, 2008).

Obesity stigma is also present in educational settings. Research indicates that obese individuals have a lower chance of receiving a higher education than normal weight students even when intelligence and parental socioeconomic status is taken into account (Karnehed, Rasmussen, Hemmingsson, & Tynelius, 2006). A possible explanation for this lower level of academic achievement may be that teachers exhibit stigma against obese students as early as elementary school (Puhl & Latner, 2007). This stigma is no doubt experienced by the students, with 32% of overweight and obese women reporting experiencing weight-related stigma from an educator and 21% reporting that they had experienced stigma on more than one occasion (Puhl & Brownell, 2006).

Weight-related stigma is often experienced in individuals’ personal and social lives as well. A study by Chen and Brown (2005) found that overweight women were less likely to be in a romantic relationship when compared to thinner women and that body weight was negatively correlated with relationship satisfaction across all women with obese women having lower relationship satisfaction, and thinner women reporting higher satisfaction in their relationships. Another study on obesity stigma and sexual attraction asked participants to rank six pictures of hypothetical sexual partners: an obese partner, a healthy partner, and partners with various disabilities (wheelchair, missing arm, mental illness, history of sexual transmitted diseases). Both men and women ranked the obese partner as the least desirable sexual partner. Obese individuals also experience stigma in their own families. When asked which individuals were most stigmatizing in their lives, respondents indicated that family members (72%), friends (60%),
and spouses (47%) were the most common sources of interpersonal stigma in their lives (Puhl & Latner, 2007; Puhl, Moss-Racusin, Schwartz, & Brownell, 2008).

**Obesity Stigma in Health Care Providers**

Several studies have examined obesity stigma in health professionals. Although data clearly indicate obesity stigma is high among health professionals, it is lower than that found in the general public (Teachman & Brownell, 2001). A majority of obesity stigma studies in the health care field have focused on attitudes and biases of physicians and nurses. Physicians tend to view obesity as a behavioral problem due to a lack of physical activity and high-fat diet; however, they also acknowledge that psychological problems often contribute to obesity (Foster et al., 2003). Hebl and Xu (2001) point out that physicians are faced with an interesting dialectic. On one hand, they are educated and well versed in research which clearly demonstrates the extent that genetics and other uncontrollable elements contribute to obesity (Peng, Zhu, Xu, Ren, Li, & Lai, 2011; Wang et al., 2011; Zillikens et al., 2009). On the other hand, they are ingrained to promote health and wellbeing in their patients, and thus may be weary of accepting obesity in their patients. Physicians rate heavier patients to be less healthy, worse at taking care of themselves, and less self-disciplined (Hebl & Xu, 2001). Even though it is recognized that obese clients often present with two medical conditions at any given time (obesity as well as the more acute issue that brings them in), physicians admit to spending less time with heavier patients. Results of this study demonstrated that even though physicians are spending less time with these patients, they are ordering more tests, which is alarming given that when asked to judge the seriousness of medical conditions in heavier clients versus normal weight clients, no significant differences emerged. Physicians are also more likely to refer heavier patients to psychological
counseling, perhaps due to a belief that overweight individuals are unhappy and unstable (Hebl & Xu 2001).

**Physical Therapists**

In a study examining physical therapists’ knowledge and attitudes towards working with obese patients, Sack, Radler, Mairella, Touger-Decker, and Khan (2009) found that respondents ranked physical inactivity (92.8%) and overeating (78.5%) as the top two leading causes or factors contributing to obesity. When asked general questions about obesity and working with obese patients, physical therapists typically agreed on the statements “Obesity is a chronic disease associated with serious medical conditions” (73.9%); “Physical therapists should be role models by maintaining normal weight” (85.4%); and “I feel obligated to educate people who are obese on the health risks of obesity” (61.2%). Overall, a vast majority of respondents disagreed or strongly disagreed with the statement “I have difficulty feeling empathy for obese individuals” (76.39%). However, 48.5% did not feel competent in providing weight loss interventions to obese patients. With regards to attitudes towards obese patients, this study found that slightly more than half of participants described obese people as “awkward, unattractive, noncompliant, and weak willed.” Additionally, 40% viewed people who are obese as “lazy.” This is slightly higher than the attitudes reported by physicians (29%) and dental students (30%) in the same study.

**Occupational Therapists**

Forhan and Law (2009) researched obesity knowledge and stigma amongst occupational therapists and found that less than 50% of survey respondents believed that occupational therapists were knowledgeable on the needs of obese clients. After attending a workshop about obesity, occupational therapists’ awareness about obesity in terms of prevalence, causes, and
consequences was raised. However, only minor, nonsignificant reductions in stigma or attitudes towards obese people were observed between pre- and post-workshop on the Attitudes Towards Obese Persons Scale and the Beliefs About Obese People Scale.

**Psychologists**

In one study looking at psychologist’s attitudes towards obese clients, Davis-Coelho, Waltz, and Davis-Coelho, (2000) asked participants to complete a questionnaire with a client vignette and photo attached. The photograph was either a woman of average weight or the same woman wearing a fat suit. Participants predicted that the obese client would put forth less effort and have worse prognoses than the non-obese client. It was also found that the fat client was more likely to be given an eating disorder diagnosis and non-obese client was more likely to be given an adjustment disorder diagnosis (despite the absence of a stressor being mentioned in the vignette). Researchers hypothesized that the psychologists in this study were giving the non-obese client a less stigmatizing diagnosis and assuming that she was simply reacting to an external stressor while ascribing greater psychological maladjustment to the obese client. While there was no indication of client stated goals in the vignette, psychologists were asked to formulate treatment goals for the client. Treatment goals of improving body image and increasing sexual satisfaction were more likely to be chosen for the obese client.

Young and Powell (1985) also conducted a study that measured the extent to which psychologists’ attitudes towards obese clients impacted their clinical judgments. Mental health professionals were asked to complete a survey based on a case study of a client and a photo (either “best” weight, overweight, or obese). The obese client received significantly higher scores than the best weight client on agitation, emotional behavior, impaired judgment, inadequate hygiene, inappropriate behavior, obsessive-compulsive behavior, self-injurious
behavior, and stereotyped behavior. No significant differences were found when the “best” weight and overweight clients were compared. Additionally, there were no differences in ratings of the clients with regards to proposed therapeutic interventions, prognosis, and interest in providing therapeutic assistance. When looking at the participant demographics, Young and Powell found that older mental health workers were less likely to differentiate based on weight and overweight clinicians were less critical of intolerance for change, obsessive-compulsive behavior, self-injurious behavior, sexual dysfunction, and stereotyped behavior in the obese client. This study provides evidence that although mental health professions do seem to exhibit stigma towards obese clients in terms of diagnosis and assessment of symptoms, their willingness to work with these patients and chosen interventions may be less affected by stigma.

**Physician Assistants**

As mentioned above, there has been a plethora of research showing physicians’ negative attitudes towards obese patients. In an attempt to extend these findings to the students, i.e., future health providers, Wolf (2010) administered the Fat Phobia Scale (FPS) to physician assistant students. The mean FPS score across students was average when compared to the general population, and high levels of fat phobia were found in 13.6% of the participants. The adjectives with the highest mean scores were “slow,” “likes food,” “overeats,” “insecure,” and “low self-esteem.” The adjectives with the greatest number of “agree” or “strongly agree” responses were “likes food,” “overeats,” “slow,” “unattractive,” and “no endurance.” This study’s results demonstrate that obesity stigma is found in physician assistant students as well as among independent practicing health providers.

**Dentistry**
Studies measuring obesity stigma in dental health professionals are sparse. One study by Magliocca, Jabero, Alto, and Magliocca (2005) examined knowledge, beliefs, and attitudes of dental students towards obesity. Results showed that 92% of dental students and 85% of dental hygiene students reported having less than five hours of training specifically on working with obese patients. Students in this study reported negative reactions towards the appearance of obese patients (31%), a difficult time finding empathy for an obese patient (17%), and discomfort examining an obese patient (14%).

In summary, multiple studies have examined obesity stigma in multidisciplinary health professionals, often physicians and nurses. Overall, research shows that levels of stigma towards obese patients is high (Teachman & Brownell, 2001) and directly affects level and quality of care given to these patients (Hebl & Xu, 2001). Expanding the literature on obesity stigma to health professions students is critical in increasing our knowledge of this problem and ultimately devising ways to address this issue.

Stigma Related to Sexual Orientation

A study examining trends in attitudes between 1977 and 2003 showed a 16% decrease in amount of people who opposed homosexuality (Hicks & Lee, 2006) leading to conclusions that homosexuality is becoming more acceptable over time. Furthermore, in 2003, only a small number (9%) of study participants felt that homosexuals should be denied equal rights in terms of job opportunities (a decrease from 33% in 1977). Despite these promising findings from Hicks and Lee, individuals who are lesbian, gay, or bisexual (LGB) face a great deal of stigma in the present day. For example, 19.3% of hate crimes in 2010 were motivated by sexual-orientation bias (U.S. Department of Justice, 2011).
Heterosexism is the term most often used to describe the bias and stigma experienced by LBG individuals. Herek (2004) defines heterosexism as a “cultural ideology that…den[ies]…any non-heterosexual form of behavior, identity, relationship, or community” (p. 16). Heterosexism is based on the idea that heterosexuals and heterosexual behavior are superior to other types of sexual behavior. Heterosexism can be found in many forms in modern society including national laws, language, and cultural and religious teachings. In these contexts, individuals who do not exhibit “normal” heterosexual behavior are devalued.

Given the strong implications put forth by the ideology and behavior (both conscious and unconscious) of a highly heterosexist society, it is no surprise that LBG individuals experience negative psychological effects related to social stigma. Meyer (2003) reviewed studies that examined the mental health of lesbians, gay men, and bisexuals and concluded that the stigma experienced by these groups lowers self-esteem, creates stressful work environments, and leads to feelings of ostracism from society. Numerous studies described below back up Meyer’s argument that lesbians, gay men, and bisexuals are exposed to increased rates of prejudice, discrimination, and stigma due to their sexuality.

Not only are LBG individuals commonly the targets of hate crimes, but they experience stigma in many other areas of their lives including employment, education, and other settings. Waldo (1999) examined heterosexism in the workplace and found that higher experience of heterosexism by homosexual employees was related to loss of self-esteem, greater psychological distress, greater job-related stress, and greater withdrawal from the job. Another study linked higher rates of depression to the combination of heterosexism in the workplace and unsupportive social interactions (Smith & Ingram, 2004). In a study examining hiring bias, Hebl, Foster, Mannix, and Dovidio (2002) found that although there was no formal stigma found in relation to
variables including permission to complete a job application, job callback, or job availability, there were differences found on measures of interpersonal stigma such as interaction length, word count, perceived negativity of interviewer (by applicants), and coded negativity of interviewer (by independent raters).

Some promising research examining the effect of education levels on attitudes towards sexual orientation showed that overall, 69% of study participants thought that people should not be judged based on their sexual preference (Lambert, Ventura, Hall, & Cluse-Tolar, 2006). Upper-level students (juniors and seniors) had fewer negative attitudes towards gays and lesbians than lower-level (freshman and sophomore) students. There were only two items which showed no differences between the two groups of students: an item measuring whether homosexuality was genetically based and an item asking if lesbian women should be allowed to be Girl Scout leaders. Although this study was cross sectional, its results along with findings from others (Hyman & Wright, 1979; Astin, 1977; Nunn, Crokett, & Williams, 1978) suggests that higher education may lead to more open-minded individuals. Ellis, Kitzinger, and Wilkinson (2002) took this research a step further and examined university students’ attitudes towards lesbian and gay human rights. They found that college educated students generally agreed with a survey item stating that a person’s sexual orientation should not block their right to basic rights and freedoms, but overall disagreed with more specific statements about lesbian and gay rights. These researchers hypothesized that university students are taught to reduce prejudice and thus agree with the general statement in order to appear non-discriminatory, but ultimately may maintain strong views when presented with specific issues. In other words, as the researchers suggest, people may support egalitarianism as a socially desirable value, but lack an overall commitment to it.
Sexual Orientation Stigma in Health Care Providers

Jillson (2002) posits that due to discrimination, homophobia, and bias, gay, lesbian, bisexual, and transgender/transsexual (GLBT) patients are deterred from obtaining preventative care and treatment for acute and chronic conditions. It should be noted that regardless of whether or not these instances of discrimination actually happen, or are just perceived by the patient does not matter because the negative results are the same (Jillson, 2002). Often times GLBT individuals who do utilize health care services will attempt to avoid bias and discrimination by not disclosing their sexual orientation. Brotman, Ryan, and Cornier (2003) found that gay and lesbian individuals who had disclosed their sexual orientation in health care settings had a host of negative experiences including embarrassment, anxiety, inappropriate reactions, direct rejection, exhibition of hostility, harassment, excessive curiosity, pity, condescension, ostracism, refusal of treatment, detachment, avoidance of physical contact, or breach of confidentiality.

Physical Therapists

A study by Burch (2008) sought to determine levels of knowledge, attitudes, and self-efficacy of health care professionals who treat spinal cord injury (SCI) patients who identify as gay, lesbian, bisexual, or transgender (GLBT). Study participants included nurses, physical therapists, occupational therapists, physicians, physical therapist assistants, and occupational therapist assistants. A majority of the sample, however, was comprised of physical therapists and occupational therapists (68%). With regards to participants’ level of knowledge of patients who are gay, lesbian, bisexual, or transgender, 68% reported very low to average knowledge with regards to providing services to people with SCI who are GLBT. When asked about respect versus tolerance when working with patients who are GLBT, 85% of physical therapists reported
tolerance, 13% had some respect, and only 1% had full respect. A similar trend was found with occupational therapists where 66% reported tolerance, 30% had some respect, and 2% had full respect for GLBT patients. Perhaps what is most concerning is that only 3.5% of study participants reported that they were greater than 40% confident in providing services to patients who identify as GLBT.

**Occupational Therapists**

Another study focusing solely on occupational therapists found contradictory results. Participants reported that they felt prepared and comfortable working with clients who are lesbian, gay, or bisexual (LGB) and talking about sexual orientation and related issues with clients even though less than 64% had received no education during their schooling on working with this population. Furthermore, only 67% reported that they were comfortable working with clients who identify as gay, lesbian, or bisexual. Researchers also found that occupational therapists agreed that sexual orientation influences occupational therapy treatment and only a small number reported having resources and support services for this population. Although occupational therapists in this study felt they had received minimal education on working with LGB patients and a moderate number possessed negative attitudes or biases towards LGB individuals, most reported feeling comfortable and competent when working with this population (Javaherian, Christy, & Boehringer, 2008). These findings suggest there may be lack of awareness regarding how bias may negatively impact behavior.

**Psychologists**

In a comparison of Australian psychologists, postgraduate psychology students, and undergraduate psychology students, undergraduates were significantly more homophobic than psychologists in their thinking, intentional behavior, and feelings of fear of discomfort in relation
to LBG clients. While the trends in scores of the postgraduate psychology students was towards psychologists on most variables, their scores were not significantly different than the undergraduate students, which suggests a possible transition towards the lower levels of stigma exhibited by professional psychologists (Jones, 2000). Similar results were found in a study in which psychology graduate students showed no differences on Global Assessment of Functioning ratings of LGB clients when compared to heterosexual clients (Sand, 1998). This study also found that when exposed to coursework that covered LGB topics, students showed higher (better) ratings towards LGB clients than students who had not completed LGB related coursework.

In summary, LGB individuals face high levels of stigma and discrimination from health professionals (Burch, 2008; Javaherian, Christy, & Boehringer, 2008; Jillson, 2002). As a result LGB patients face a host of negative experiences when seeking health care services (Brotman, Ryan, & Cornier, 2003), and often avoid them all together (Jillson, 2002). As is the case with obesity stigma, sexual orientation stigma research in health care providers is lacking. Research has been focused primarily on physicians. Given the high levels of stigma related to sexual orientation that have been reported thus far in the health professions, it seems imperative that research continue to be done on this topic with a focus on all health professions and the students in those health professions.

**Stigma Towards Muslims**

Following the 9/11 al-Qaeda terrorist attacks on the United States, the Muslim community has been under increased scrutiny from the American public. Immediately following the 9/11 attacks, Muslim youth faced harassment at school while adults were questioned and in some cases detained by federal law enforcement and immigration officials because of the general
sense that they were suspicious due to their religious identity (O’Brien, 2011). Muslims in other “westernized” countries (i.e., Great Britain) became a “suspect community” (Ryan, Banfi, & Kofman, 2009). Following 9/11, President George Bush stated, “You are either with us or against us” when referring to the United States’ war against terrorism. This statement seemed to assert that to ‘be with,’ one must make a commitment to the community or the cause and in order to become a part of any community, one must be considered accepted by the community.

Ahmen and Fortier (2003) argue that the statement “you are either with us or against us” works as an imperative where “to be with us” is an imperative to “be like us,” wherein if someone did not want to be identified as a terrorist, they had to conform to or mimic the behavior of the community they would like to “be with.” Western media often portrays Muslim women as “passive victims of patriarchy or as cultural outsiders stubbornly refusing to engage in…society” (Meer, Dwyer, & Modood, 2010). Diehl, Koenig, and Ruchdeschel (2009) reminded their readers of the Western stereotype that Muslims are “ill-equipped” to adapt to Western norms such as those related to gender equality. If they are correct, Muslims will forever remain outsiders in the United States and potentially may continue to be viewed as “them” or “the enemy.” It should come as no surprise then that Muslims face stigma and bias in multiple domains of their lives.

A qualitative study of Muslim women in London described experienced stigmatization throughout a series of 3 focus groups and ten in-depth individual interviews (Ryan, 2011). The women discussed sensitivities to the manner in which Muslims were portrayed in the media. One of them stated that “they should not emphasize the religious connotations of these activities.” She believed that the individuals who had participated in bombngs or other terrorist acts had not done so in the name of religion. Another woman agreed and stated that terrorism has “nothing to
do with Islam. [They are] a group of fanatics. This is not Islam.” Another theme in the women’s discourse was that they had not only experienced stigma from Non-Muslims, but from other Muslims as well, particularly in relation to their choice of clothing. While those who wore traditional Muslim clothing including the hijab headdress were more prone to verbal abuse, labeling, and stigmatization by non-Muslims, those who chose not to wear the hijab were stigmatized by other Muslim women as not being “good” or “real” Muslims.

While the Ryan (2011) study examined stigmatization through qualitative research methods, other research has examined this experience using quantitative research methods. A study by Unkelbach, Schneider, Gode, and Senft (2010) found that women wearing hijabs were less likely to be considered for employment despite achievement levels. Furthermore, women wearing hijabs were more quickly rejected compared to women not wearing hijabs. This study built on earlier work done by Unkelbach, Forgas, and Denson (2008) that found there was a shooter bias against targets wearing turbans or hijabs when compared to targets wearing nothing on their head. This shooter bias was comparable to the shooter bias against Blacks in the United States (Correll et al., 2007). The researchers labeled this Muslim shooter bias the “turban effect” and found that it was even more pronounced when participants were in a good mood, thus suggesting that preexisting schemas held by the participants were largely responsible for the bias.

There have been two studies to date that have examined implicit attitudes towards the Muslim population. In 2005, Rowatt, Franklin, and Cotton used the Implicit Association Test (IAT), a computer program that records reaction times of participants as they categorize names of Christians and Muslims with pleasant and unpleasant adjectives. Participants were also assessed for explicit bias by completing self-report measures of attitudes towards Christians and Muslims and personality constructs previously shown to correlate with ethnocentrism (right-
 wing authoritarianism, social dominance orientation, religious fundamentalism, etc.). Results showed that there was both a self-reported and implicit preference for Christians relative to Muslims. With regards to the personality constructs measures, results showed that self-reported anti-Arab racism, social dominance orientation, right-wing authoritarianism, and religious fundamentalism were associated with more positive attitudes towards Christians relative to Muslims on self-report measures, but not implicit preferences, indicating a main effect for preference for Christians.

The second study to examine implicit attitudes towards Muslims consisted of three parts (Park, Felix, & Lee, 2007). The first part was a conceptual replication of the Rowatt et al. (2005) study in which participants’ response times on the IAT in linking Judeo-Christian and Muslim names with good and bad adjectives is measured to determine implicit preference for Judeo-Christians or Muslims. Results indicated that participants showed a relative bias for a preference towards Judeo-Christians relative to Muslims. Researchers also compared IAT scores with responses to an open-ended question about what participants knew about Muslims and measures of explicit bias. Participants who provided terrorist-related responses had demonstrated more prejudice in IAT responses than those that did not. Additionally, explicit measures also showed a relative preference for White over Muslim. Part two of the study was similar to part one with regards to measures and procedure, but compared preference for Blacks or Muslims. Results showed that participants showed both implicit and explicit preference for Blacks relative to Muslims and that terrorism-related responses to the open-ended question were related to stronger preference for Blacks relative to Muslims. These findings are particularly striking given the extensive data on strong anti-Black bias in the United States (Amodio et al., 2004; Blair & Banaji, 1996). The final portion of the study compared explicit and implicit measures of bias
between three groups: a group exposed to a newspaper article from September 12, 2001 (negative information), a health report on drinking water and daily health (neutral information), or an introduction to Arab-Muslim culture (positive information). It was found that exposure to the negative information was related to significantly more prejudiced responses on IAT when compared to the neutral condition. Additionally, prejudiced responding on the IAT was significantly lower in the positive condition compared to those in the negative and neutral conditions. Taken together, the results from this study show that not only do people display more bias towards Muslims relative to Whites as well as Blacks, but that external information acquired from one’s environment (newspaper articles) can affect levels of bias towards a group of people.

In summary, research on stigma and bias towards the Muslim community has been limited despite the increase in experienced bias and discrimination including a 1,600% increase in hate crimes against Muslim individuals following 9/11 (Zogby, 2003). Only the small number of aforementioned studies have examined bias, and no studies measured Muslim bias in health professionals. Other research has shown that biases held by both physical and mental health practitioners have affected treatment of other highly stigmatized groups (Brotman, Ryan, & Cornier, 2003; Davis-Coelho, Waltz, & Davis-Coelho, 2000; Hebl & Xu, 2001; Jillson, 2002; Young & Powell, 1985). Without information regarding level of bias among health care providers, it is unlikely that bias towards Muslims in health care settings can be addressed and reduced, so research in this area is not only lacking, but extremely important.

**Rationale for the current study and hypotheses**

As described above, there accumulating evidence that health professionals hold high levels of stigma towards obese clients (Hebl & Xu, 2001; Teachman & Brownell, 2001). Some
of this research demonstrates stigma experienced by patients can deter them from receiving the levels of care they require (e.g., gynecological screenings; nutritionist referrals, mental health evaluations; Hebl & Xu, 2001). This is a significant public health concern given the prevalence of obesity as well as the health risks known to be associated with obesity. This study will broaden the literature on this topic by assessing obesity stigma in health professions students (i.e., the health care providers of the next generation). Levels of obesity stigma will be compared with two highly stigmatized populations: stigma against a sexual minority group (LGB) and stigma against a religious minority group (Muslims). A previous study that compared bias against these three groups found a significant difference when comparing means on three versions of the Universal Measure of Bias (UMB-OBES, UMB-LGB, and UMB-MUSLIM) in a sample of undergraduate university students. Obesity bias was found to be significantly greater than bias against both other groups. Additionally, Muslim bias was greater than bias towards LGB individuals. Given that health professionals have demonstrated high levels of obesity stigma, and obesity bias has been shown to be greater than other forms of bias in previous research, it is hypothesized that health professions students will demonstrate greater levels of obesity bias in comparison to bias towards sexual and religious minorities.

Additionally, to date, no studies have compared levels of stigma across different health professions. The current study will compare levels of obesity stigma across different health professions programs. A review of the literature would suggest that levels of obesity stigma do not greatly differ across the different health professions. However, no study has directly measured this. Psychologists are trained to assess and reduce their own biases (Diaz-Lazaro, 2011; Morrow & Deidan, 2011), and students in the professional psychology program in the current study are required to complete extensive coursework on diversity-related issues (two
diversity courses and an experiential diversity lab). Thus, it is hypothesized that students in the professional psychology program will report significantly lower levels of obesity stigma than those in the other health professions programs.

Lastly, given that there is sparse research on obesity stigma in health professions students, levels of stigma have not been researched in relation to number of years enrolled in a health professions program. The results of a study measuring levels of stigma towards LGB clients, shows a decrease in stigma with more education (Jones, 2000). While the Jones (2000) study examined LGB stigma cross-sectionally and compared undergraduate students, graduate students, and professional psychologists, their results suggest that stigma may dissipate through education. Thus, it is hypothesized that levels of obesity stigma will negatively correlate with number of years enrolled in health professions programs (i.e. students who have been in school longer will report significantly lower levels of obesity stigma).

Proposed Questions

1. Will health professions students show higher levels of stigma towards obese, LGB, or Muslim individuals?
2. Will levels of obesity stigma vary across different health professions programs?
3. Will levels of obesity stigma vary by number of years enrolled in health professions programs?

Hypotheses

1. Health professions students will report significantly higher levels of obesity stigma as compared to levels of stigma towards LGB or Muslim individuals.
2. Students in the professional psychology program will report significantly lower levels of obesity stigma than those in the other health professions programs.
3. Levels of obesity stigma will negatively correlate with number of years enrolled in health professions programs (i.e. students who have been in school longer will report significantly lower levels of obesity stigma).

**Method**

**Participants**

Participants were 98 adult (i.e., 18 years of age or older) students enrolled in each of the health professions programs at a university in the Pacific Northwest including the School of Dental Health Science (12%), the School of Occupational therapy (14%), the School of Pharmacy (7%), the School of Physical Therapy (7%), the School of Physical Assistant Studies (1%), the School of Professional Psychology (55%), and the Masters of Healthcare Administration (4%). Of the 98 participants, only 12 were male, and 3 identified as “other.” The mean age was 27.5 and ranged from 21 to 42 and the mean time enrolled in a health professions program was 2 years. Eighty-six percent of the sample identified as Caucasian, with 1% identifying as African American, 5% Asian American, 4% Latino/Hispanic, and 4% Biracial. A summary of participant demographics can be found in Table 1.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Summary of Participant Demographics</th>
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<tr>
<td></td>
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<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12</td>
</tr>
<tr>
<td>Female</td>
<td>83</td>
</tr>
<tr>
<td>Other</td>
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</tr>
<tr>
<td>Ethnicity</td>
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<tr>
<td>African American</td>
<td>1</td>
</tr>
<tr>
<td>Asian American</td>
<td>5</td>
</tr>
<tr>
<td>Latino/Hispanic</td>
<td>4</td>
</tr>
<tr>
<td>Native Hawaiian/Pacific Islander</td>
<td>0</td>
</tr>
<tr>
<td>Native American/Alaskan Native</td>
<td>0</td>
</tr>
<tr>
<td>Caucasian</td>
<td>80</td>
</tr>
<tr>
<td>Biracial</td>
<td>4</td>
</tr>
<tr>
<td>Program</td>
<td></td>
</tr>
</tbody>
</table>
Measures

To compare the strength of different forms of biases, potential participants were asked to complete the Universal Measure of Bias (Latner et al., 2008). The Universal Measure of Bias (UMB) is a 20-item scale designed to tap into the underlying domains of bias. In doing so, the scale is able to measure bias across different targets as opposed to scales that measure bias against specific targets. Scale items are Likert style with responses ranging from “Strongly Agree” to “Strongly Disagree” (see Table 2). The UMB can be used on any target population since the name of the target group is inserted into the scale questions. This study will utilize three versions of the UMB, one for each of the target groups being studied: obese individuals (UMB-OBESE), sexual minorities (UMB-LGB), and religious minorities (UMB-MUSLIM).

The scales have been shown to have adequate internal consistency (Cronbach’s α; UMB-OBESE = 0.87, UMB-LGB = 0.33, UMB-MUSLIM = 0.91) when tested on a sample of university students from the United States and New Zealand. The three versions of the UMB were also shown to have good convergent validity (Latner et al., 2008). When correlated with scales known to measure the biases towards these groups, Pearson’s product-moment correlations ranged from 0.50-0.81. There has been no research on cutoff levels for the
interpretation of UMB scores. Thus the scores can only be interpreted as numerical values and cannot be labeled as falling into categories of low, medium, or high stigma.

Table 2

*Universal Measure of Bias*

<table>
<thead>
<tr>
<th>Statement</th>
<th>People</th>
</tr>
</thead>
<tbody>
<tr>
<td>_____ people tend toward bad behavior.</td>
<td>_____</td>
</tr>
<tr>
<td>_____ people are sloppy.</td>
<td>_____</td>
</tr>
<tr>
<td>Sometimes I think that _____ people are dishonest.</td>
<td>_____</td>
</tr>
<tr>
<td>_____ people have bad hygiene.</td>
<td>_____</td>
</tr>
<tr>
<td>In general, _____ people don’t think about the needs of other people.</td>
<td>_____</td>
</tr>
<tr>
<td>I would not want to have a _____ person as a roommate.</td>
<td>_____</td>
</tr>
<tr>
<td>I like _____ people.</td>
<td>_____</td>
</tr>
<tr>
<td>I don’t enjoy having a conversation with a _____ person.</td>
<td>_____</td>
</tr>
<tr>
<td>I would be comfortable having a _____ person in my group of friends.</td>
<td>_____</td>
</tr>
<tr>
<td>I would like having a _____ person at my place of worship or community center.</td>
<td>_____</td>
</tr>
<tr>
<td>I find _____ people attractive.</td>
<td>_____</td>
</tr>
<tr>
<td>_____ people make good romantic partners.</td>
<td>_____</td>
</tr>
<tr>
<td>I find _____ people to be sexy.</td>
<td>_____</td>
</tr>
<tr>
<td>_____ people are a turn-off.</td>
<td>_____</td>
</tr>
<tr>
<td>I find _____ people pleasant to look at.</td>
<td>_____</td>
</tr>
<tr>
<td>Special efforts should be taken to make sure that _____ people have the same rights and privileges as other people.</td>
<td>_____</td>
</tr>
<tr>
<td>Special efforts should be taken to make sure that _____ people have the same salaries as other people.</td>
<td>_____</td>
</tr>
<tr>
<td>Special efforts should be taken to make sure that _____ people have the same educational opportunities as other people.</td>
<td>_____</td>
</tr>
<tr>
<td>Special efforts should be taken to make sure that _____ people have the same housing opportunities as other people.</td>
<td>_____</td>
</tr>
<tr>
<td>I try to understand the perspective of _____ people.</td>
<td>_____</td>
</tr>
</tbody>
</table>

**Setting**

The data was gathered at a health professions campus at a university located in the Pacific Northwest. The primary investigator entered and analyzed the data on a password-protected laptop designated specifically to be used for the current study. All data was stored using a double-lock method (e.g., locked cabinet in locked office).

**Procedure**
Following institutional IRB approval, participants were recruited through a campus wide email sent to all students enrolled in a health professions program at the university. The email included a link to the study via an online survey website (SurveyMonkey). Participants were also recruited through flyers hung around the campus that contained tear off portions with the direct link to the study. Students were then asked to complete a consent form, demographics questionnaire, and the three aforementioned versions of the UMB (UMB-OBESE, UMB-LGB, UMB-MUSLIM). Efforts to keep data as secure as possible during data collection were implemented (e.g., de-identifying data, locked file cabinets, password protected computer files, password protected laptop). Upon completion of the questionnaire, participants were given instructions on how to enter into an optional lottery to win one of 35 $10 Target gift cards.

**Proposed Statistical Analysis**

To assess for relative strength of bias against obese, LGB, and Muslim individuals, a repeated-measures analysis of variance (ANOVA) was used. The independent variable was a target group that had three levels: obese, LGB, and Muslim, and the dependent variable was the level of stigma. The repeated-measures ANOVA test is used to compare the means of three or more group means where the participants are the same in each group.

The repeated-measures design is based on the assumptions of independence, normality, and homogeneity of variance. The assumption of independence posits that the scores on the dependent variable represent a random sample from the population and are independent of each other. If this assumption is violated, the ANOVA F ratio will yield inaccurate p values. The normality assumption presumes that the dependent variable is normally distributed within each level of the independent variable. If this assumption is violated and the distribution is skewed, the power of the ANOVA test as well as the p values could be compromised. The homogeneity
of variance assumption assumes that the amount of variance in each of the groups is approximately equal. If the homogeneity of variance assumption of violated, the $p$ value for the omnibus $F$ test may not be accurate. Tests to confirm the data met these assumptions were performed prior to analysis.

To compare levels of stigma across different health professions programs, a one-way analysis of variance (ANOVA) was planned to be used. The independent variable was program membership and included seven conditions (School of Dental Health Science, the School of Occupational Therapy, the School of Pharmacy, the School of Physical Therapy, the School of Physical Assistant Studies, the School of Professional Psychology, and the Masters of Healthcare Administration) and the dependent variable was the level of obesity stigma. The aforementioned assumptions of independence, normality, and homogeneity of variance were confirmed prior to analysis.

Lastly, a Pearson product-moment correlation was used to determine whether the number of years students had been enrolled in a health professions program was related to level of obesity stigma. A Pearson product-moment correlation determined not only the direction of a possible relationship, but also the strength of that relationship. The Pearson product-moment correlation is based on the assumptions that the variables are measures on either an interval or ratio scale, there is a linear relationship between the two variables, the data is normally distributed, and there are no outliers. The test is especially sensitive to the later two assumptions and will yield inaccurate results if either (or both) are violated; so both were tested before running the Pearson correlation and results indicated no violations of the assumptions.

**Results**
A repeated-measures ANOVA was conducted to assess for relative strength of bias against obese, LGB, and Muslim individuals across all participants. The results showed that there were significant differences in bias towards LGB, Muslim, and obese people $F(1.65, 160.27) = 34.55, p < .05$, 95% confidence interval (CI) = 8.71-18.78 (See Figure 1). Health professions students reported significantly more bias towards obese people ($M = 52.65, SD = 19.49$) than LGB people ($M = 38.91, SD = 18.57$). Additionally, health professions students reported significantly more bias towards obese people ($M = 52.65, SD = 19.49$) than Muslim people ($M = 42.04, SD = 15.89$), 95% CI = 9.64 - 17.85 (See Figure 1). There were no significant differences in level of bias towards LGB compared to Muslim individuals. The effect size was small and indicated that 26% of the variability in stigma levels was due to group membership.

![Figure 1](image_url)

**Figure 1.** Means and 95% confidence intervals of scores representing level of bias toward obese, Muslim, and LGB individuals as reported on three versions of the Universal Measure of Bias (UMB-OBESE, UMB-MUSLIM, and UMB-LGB).
While it was originally planned to use a one-way ANOVA to assess for differences in level of obesity stigma across the health professions programs, due to an uneven distribution of respondents from different programs (i.e., 54% of respondents from School of Professional Psychology and a maximum of 13% from other programs), the author chose to use an independent samples \( t \)-test to compare levels of obesity stigma in psychology students against obesity stigma in all other health professions programs. This decision was also theoretically driven. By nature of their work, psychologists are trained to be highly empathic and were thus expected to have lower levels of reported obesity stigma in this study. However, the independent samples \( t \)-test was not significant \( t(95) = 1.17, p = .25 \). Thus there was not support for the hypothesis that students in the professional psychology program \( (M = 50.80, SD = 19.97) \) would report less obesity stigma than the other health professions as a whole \( (M = 55.47, SD = 18.92) \).

To assess the relationship between level of obesity stigma and years enrolled in health professions programs, a Pearson product-moment correlation was used. Results were not significant \( r(96) = .06, p = .54 \). Thus results of this study did not support for the idea that level of obesity stigma was related to number of years enrolled in a health professions program.

**Discussion**

The purpose of this study was to examine levels of stigma towards obese, Muslim, and LGB individuals in health professions students. Previous research has shown that health professionals hold alarmingly high levels of obesity stigma (Puhl & Heuer, 2009). Furthermore, studies have shown that because of this stigma, obese individuals do not receive adequate healthcare (Hebl & Xu, 2001), a significant concern given the increase in prevalence of obesity and the large number of health concerns related to obesity. General research on stigma against LGB and Muslim individuals is lacking and even more sparse when considering stigma in health
professionals specifically. In fact, there are currently no studies that examine stigma towards Muslims in health professionals. Given the evidence that stigma can reduce quality of health care for patients, it seems imperative that there be more studies on health professionals’ stigma towards highly stigmatized groups (i.e. obese, LGB and Muslim individuals) and whether or not stigma is affecting quality of care for these patients.

This study proposed three separate hypotheses. The first hypothesis was that health professions students would have significantly more bias towards obese individuals than against Muslim or LGB individuals. As expected, findings from the one-way repeated-measures ANOVA revealed that the participants showed significantly more bias towards obese individuals than either LGB or Muslim individuals. While this result was not surprising given the extensive research on high levels of obesity stigma in health care providers discussed above, it should still be considered notable given the comparison to other highly-stigmatized groups.

This result is similar to findings from a study that compared levels of bias against these three highly stigmatized groups in an undergraduate student population (Latner et al., 2008). The mean levels of stigma reported among health professionals were slightly lower than the levels of stigma reported by the undergraduate student sample in the study by Latner and colleagues (2008). Future research could directly compare levels of stigma in health professionals against that in the general public to help understand levels of stigma in health professionals in more depth.

The other two analyses were not significant, thus the data did not support the hypotheses that level of obesity stigma would be associated with type of graduate program (i.e. lower in psychology students) or related to number of years enrolled in a health professions program. Lack of significant differences between programs could potentially be explained by the high
prevalence of obesity stigma in the general public. It is likely that level of obesity stigma was
determined more by ethos in the larger culture as opposed to program membership. Additionally,
the average number of training and diversity programs attended by students in this study was one,
and could be an explanation of the finding that level of obesity stigma being unassociated with
number of years enrolled in a health professions program. Without proper awareness and
education on obesity stigma specifically, and diversity in general, it will be much less likely that
students address, and subsequently reduce levels of stigma. Furthermore, despite specific
training and attention to empathy in psychology graduate programs, the psychology students did
not report significantly less bias than students in the other programs. This lack of significant
differences in the comparison of obesity stigma in psychology students against obesity stigma in
all other health professions programs suggests that increased empathy may not necessarily
translate to lower levels of stigma. However, replication with a larger sample size is warranted
to further examine this issue.

While stigma against obese individuals was higher than stigma towards Muslim and LGB
individuals, it should be noted that stigma was still present towards all three groups. Since there
are no specific cutoff scores for determining levels of stigma with the UMB, the scores were
interpreted strictly based on their numerical values, with higher scores indicating more negative
attitudes. This study adds to the literature on stigma against LGB individuals in health
professionals by showing that health professions students in a wide array of programs do report
stigma towards LGB populations. Given the long-standing history of discrimination and
prejudice against gay, lesbian, and bisexual individuals in the United States, it is notable, that
stigma towards LGB individuals was the lowest of the three groups measured in this study. This
could potentially be evidence of the growing acceptance of homosexuality in the general public.
This research was the first to assess stigma towards Muslims in health care providers. Given the dramatic increase of hate crimes against Muslim individuals following 9/11 (Zogby, 2003), it is not surprising that the health professions students in this study reported stigma towards Muslims. It is important for future studies to continue to explore this bias given previous research on how stigma towards other populations (i.e., obese or LGB individuals) impacts health care providers’ ability to provide adequate health care (Brotman, Ryan, & Cornier, 2003; Davis-Coelho, Waltz, & Davis-Coelho, 2000; Hebl & Xu, 2001; Jillson, 2002; Young & Powell, 1985).

This study has some notable limitations, which should be taken into consideration when interpreting the results. One possible threat to the internal validity of this study is instrumentation. The three UMB measures used for this study were administered as part of a larger study on obesity stigma. The measures were placed at the end of battery and, participants first had to complete four other measures related to obesity stigma before completing the UMB. This may have influenced scores on the measures because participants were most likely aware that the overall purpose of the study or studies was to measure stigma with a particular focus on obesity stigma. Furthermore, it is possible that participants were tired, bored, or less interested in the study by the time they began the UMB measures, and may have been less careful in completing the measures at the end of the battery.

Another consideration when interpreting the results is the location of the study. This study took place in a large city in the Pacific Northwest. This region is known for having an active LGB community and a population that is highly liberal and accepting of differences in terms of sexual orientation and identity. Therefore, participants may have held lower stigma towards the LGB community than individuals in other parts of the United States and other parts
of the world. The findings may not generalize to other regions. Furthermore, the area is predominantly white in racial make up and participants in this study may have lower levels of interaction with Muslim individuals than in other areas of the country. In fact only 0.5% of the population in this area is Muslim (The Pew Forum, 2008). Therefore, participants may have reported less stigma towards this group due to their limited interaction. This, of course, could be argued the other way as well; that it could have been expected that participants would report higher levels of stigma towards Muslims due to inexperience with the population. Finally, it should be noted that the sample was collected from a small private university primarily comprised of a homogeneous student body in regards to age, race, etc., which limits the generalizability of the findings.

There are other limits to the external validity of this study as well. One limit is that not all of the health professions are represented in this sample. The sample includes students from the School of Dental Health Science, the School of Occupational therapy, the School of Pharmacy, the School of Physical Therapy, the School of Professional Psychology, and the Masters of Healthcare Administration. There were no participants from the Graduate Certificate Program in Gerontology and the School of Physical Assistant Studies only had one respondent. Thus the later two programs were not adequately represented. Furthermore, the programs were unequally represented, which precluded the initially planned analyses of comparison by training program.

Lastly, a possible threat to construct validity is social desirability bias. It is plausible that participants indicated that they had higher levels of stigma towards obese individuals because it is more socially acceptable to be openly biased against obesity as opposed to acknowledging
stigma against LGB and Muslim individuals. Including measures of implicit bias in future research could help resolve this.

This study adds evidence to the existing literature that obesity stigma is prevalent in the health care providers. Specifically, this study compared levels of stigma across highly stigmatized groups and demonstrated that level of obesity stigma is not only present in health care providers, but is significantly higher than stigma reported against both sexual and religious minority groups. This study appears to be the first to examine obesity stigma in health professions students. This shows that obesity stigma is not just a problem at the professional level in the medical field, but that it is also present at the student level and needs to be addressed as these are health care providers of the future. With two-thirds of the population meeting WHO criteria for overweight or obese weight categories (Ogden & Carroll, 2010) and the association between obesity and multiple medical conditions (Pi-Sunyer, 1999), it is clear that all providers in the medical and mental health fields will work often with overweight and obese patients and they should be able to do so in a respectful, professional manner as an integral part of providing quality care.

Research on obesity stigma in health professions students is a fairly new topic, and while this study adds to that literature, there is still much to learn when it comes to understanding this issue. Future research could include a study with a larger, more diverse sample to see if the results are replicated or effect sizes increase when more participants and multiple training programs are included in the analysis. A replication study could also aim to recruit a larger number of participants from each program in order to better understand possible differences in obesity stigma between students in different programs.
Another possible direction for future research would be a study that applied an intervention to help reduce obesity stigma in health professions students. To date, there has only been one such study (O’Brien, Puhl, Latner, Mir, & Hunter, 2010). This study found that levels of obesity stigma increased when students were exposed to a curriculum on the controllable reasons for obesity (i.e. diet, exercise) and that obesity stigma was reduced when students were presented evidence on the uncontrollable reasons for obesity (i.e. genes, environment). Their study provides initial evidence that education can have an impact on reducing levels of obesity stigma. More research is needed in this area to create successful training or educational programs aimed at reducing obesity stigma and thus increasing quality of care for obese patients.

One possible educational curriculum could include a focus on both the controllable as well as the uncontrollable reasons for obesity. Doing so would teach that, while diet and exercise are important targets for health behavior education, changes in these behaviors will not always lead to weight loss and that a strict focus on healthy behavior change in obesity treatment could lead health professionals to blame themselves or their patients when positive behavior change does not lead to weight loss. Longitudinal designs can also help determine whether or not obesity stigma reduction programs can have lasting effects.

Some research has shown that simply paying attention to the language one uses can not only reduce stigmatizing attitudes, but also the experience of stigma by persons who are obese. Kyle, Puhl, Williams, Kyle, and Kahan (2013) found that health professionals who use people-first language (i.e. “a person with obesity”) exhibit less bias towards people with obesity than those who use condition-first language (i.e., “obese person”). Furthermore patients found people-first language to be more acceptable from their doctors. Thus, educational programs
aimed at helping health professions students incorporate person-first language into their vernacular could be extremely influential in reducing all kinds of stigma in health professionals.

It has been shown that stigma in health care providers impacts treatment of highly stigmatized groups (Brotman, Ryan, & Cornier, 2003; Davis-Coelho, Waltz, & Davis-Coelho, 2000; Hebl & Xu, 2001; Jillson, 2002; Young & Powell, 1985). Given that this study found high levels of stigma towards obese individuals in health professions students, it is necessary to consider the current state of obesity treatment in both the medical and mental health communities. Increased attribution of obesity to biological causes has been shown to be negatively correlated with stigmatizing attitudes (Ebneter, Latner, & O’Brien, 2011). Historically, health professionals have heavily focused on behavioral interventions for weight loss with weight loss as the primary outcome measure. These treatments do not take into consideration the strong influence of the biological, environmental, and other influences of obesity. It might be helpful to consider treatment options that shift the focus from weight loss, to other goals that are better indicators of patients’ success at making healthy lifestyle changes. Doing so may help remind both health professionals as well as patients that weight loss and obesity are not entirely dependent upon behavior.

One treatment paradigm that may be particularly useful could be Acceptance and Commitment Therapy (ACT). There have been a small number of studies that have found positive results using ACT for weight loss (Forman, Butryn, Hoffman, & Herbert, 2009; Forman et al., 2007) and obesity prevention (Katterman, 2013). ACT allows clients to experience cravings and remain in the present moment while encouraging behavioral changes that are consistent with desired goals and values. Using either ACT or other acceptance based interventions could not only have potential benefits for healthy lifestyle changes, but might also
help reduce stigma in health care providers using these interventions as it would remind them to also be present, accepting, and focused on value-driven behavior (versus weight loss per se). Future studies should continue to examine the effectiveness of these types of interventions for treating obesity. Similarly, these acceptance-based interventions could be studied as a potential tool for reducing stigma in health professionals.

The results of this study are important because they show that obesity stigma is prevalent in health care professions students. Specifically, levels of obesity stigma were significantly higher than stigma reported toward two other highly stigmatized groups. This is concerning given that these students will soon be practicing health professionals treating increasing numbers of patients with this condition due to the rising prevalence of obesity in recent years. Obesity may be the last form of “acceptable” stigma, but hopefully this study contributes to the growing body of research that elucidates the need to address this problem and help pave the path for reducing stigma in health professions students with the ultimate goal of providing all patients with respectful and high quality care.
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