



ORIGINAL ARTICLE

Knowledge, perceptions, and attitudes of dental students towards obesity



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KEYWORDS

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Abstract *Aims:* Obesity is a chronic medical condition associated with various oral health problems. The aim of this study was to assess the knowledge, perceptions, and attitudes of dental students towards obesity.

Material and methods: Second-, third-, and fourth-year dental students completed a self-administered questionnaire. An ethics committee approved the study. Participants were asked questions focused on three areas: (i) knowledge, (ii) perceptions, and (iii) attitudes about obesity. Data analyses were carried out using SPSS version 20.

Results: Among the dental students, 78.9% received 0–1 h of formal education about obesity. The mean score of the total time allocated for obesity-related education was 1.31 ± 0.23 h. Eighty-nine percent of the dental students agreed that obesity is a chronic medical condition, 30% agreed that they would modify their equipment and office furniture to accommodate obese patients, and 46.8% were interested in learning more about obesity in dental school.

Conclusion: Obesity-related education should be implemented as a formal component of dental student training. Oral health practitioners should also provide their patients with information about how weight loss is beneficial to both general and oral health.

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1. Introduction

Obesity is a global health problem that is spreading at an alarming rate across the world, particularly in the Asia–Pacific Region. The worldwide prevalence of obesity is 27.8% (WHO, 2008). According to the Global Burden of Disease Study, Pakistan is ranked as the ninth most obese population in the world (Ng et al., 2014). Since obesity has a high prevalence worldwide, it is considered and prioritized as a major issue with regard to the economics of developed nations (Cecchini et al., 2010).

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Obesity is a disease with multiple aetiological factors, with genetics and specific obesity-related genes playing key roles (Stunkard et al., 1986). However, there are also some environmental links to obesity (von Deneen et al., 2011). Due to the recent trends associated with urbanization, including increased refined food product consumption, unhealthy dietary habits, and a lack of physical activity, obesity is spreading fast (Lamb et al., 2010). Obesity has been identified as a risk factor for various systemic diseases, including hypertension, cardiovascular disease, metabolic diseases, osteoarthritis, respiratory difficulties, and some oral diseases, such as periodontal disease (Eckel et al., 2005; Haslam and James, 2005; Stumvoll et al., 2005; Wilson et al., 2002). In addition, obesity is associated with an increasing burden of oral diseases and adverse effects on oral health-related quality of life (Ritchie and Connell, 2007; Saito et al., 2005, 2001). As a result, medical and dental professionals are facing challenges associated with identifying patients with obesity and prioritizing their general and oral health care needs (Basdevant and Ziegler, 2002).

Health care professionals are responsible for preventing and identifying weight issues and for providing advice to the patients (Basdevant and Ziegler, 2002; Jackson et al., 2013). Studies focused on patient beliefs have reported that health professionals are the primary group capable of helping patients identify obesity and its associated health risks (Bocquier et al., 2012). However, physicians were found to be hesitant to carry out obesity prevention and management counselling to their patients (Kristeller and Hoerr, 1997). The reasons for this are unknown, but may be due to a lack of knowledge and negative attitudes of health care professionals towards obesity management (Foster et al., 2012; Harvey and Hill, 2001a,b; Hebl et al., 2003).

As obesity is one of the major predisposing factors for oral diseases, there is a need to counsel patients visiting dental hospitals and clinics in order to identify the underlying causes of obesity and carry out obesity management and prevention procedures. There is a lack of data about the understanding of dental professionals with regard to obesity management (Ritchie and Connell, 2007). Studies have reported that more than one-third of dental students and dental hygiene students had one hour or less of obesity education as part of their dental school curriculum (Magliocca et al., 2005). These findings suggest that there is an urgent need for additional training about obesity-related health risks as part of the dental school curriculum. Therefore, the purpose of this study was to understand and identify the underlying reasons for why dental professionals are often neglectful, reluctant, and hesitant when treating obese patients, and to determine the current state of knowledge, perceptions, and attitudes of dental students with regard to obesity and its management.

2. Material and methods

2.1. Study population and design

This was an anonymous, cross-sectional study conducted among second-, third-, and fourth-year dental students of the Faculty of Dentistry, Riphah International University, Islamabad, Pakistan, over a three-month period from January through March 2014. Students were given the self-administered questionnaire along with detailed instructions for completing the questionnaire individually. The questionnaires

were distributed to the students during breaks from lectures or work. The students were required to complete the questionnaires on site and to return them immediately to the research team. Approval of the study was obtained from institutional research and ethics committees. Social demographic factors of age (mean \pm SD), sex, year of education, and geographic locations were assessed.

2.2. Instrument and data collection

Our study used a modified version of the self-administered questionnaire developed by Foster et al. (2003) to assess the knowledge, perceptions, and attitudes of dental students towards obesity. The questionnaire was peer-reviewed, piloted, and determined to be comprehensive. The questionnaire consisted of 16 items, with three sections: (i) knowledge, (ii) perceptions, and (iii) attitudes. Participant responses were based on the Likert scale, which included five responses ranging from strongly agree to strongly disagree. All participants completed the questionnaire during a single meeting using indelible pencil. Knowledge-based questions were focused on the total number of credit hours allocated to obesity education in dental school and the ability of the participant to define, diagnose, and understand obesity as a health problem. Perception-based questions were focused on the ability of participants to describe their motivation towards making accommodations for obese individuals in the dental setting and towards assessing patient dietary habits. Attitude-based questions were focused primarily on the behaviour and feelings of the dental students towards obese patients.

Negative responses graded under strongly disagree and disagree were categorized as disagree, whereas positive responses graded under strongly agree and agree were categorized as agree. The neutral response was input with the mean value of response for each question.

2.3. Data analysis

Data were analysed using Statistical Package for the Social Sciences (Released 2009. PASW Statistics for Windows, Version 18.0. Chicago: SPSS Inc.). The frequency distribution was used to analyse each participant's characteristics and the number of hours allocated for obesity-related education among dental students. Participant responses were assessed based on the frequency and percentage of participants who agreed or disagreed with the questions.

3. Results

A total of 218 dental students participated in this study. The response rate of participants was 99.09%. Among the participants, 63.3% were female and 36.7% were male, with a mean age of 24.0 ± 1.3 years. Table 1 shows the distribution of demographic characteristics of the participants. Seventy-nine percent of the participants reported having 0–1 h of obesity-related education as part of their dental curriculum. However, the mean score of the total time allocated for obesity-related education was 1.3 ± 0.2 h. Fig. 1 summarizes the total number of hours allocated for obesity-related education, as perceived by the dental students. The responses of participants to knowledge-, attitude-, and perception-based questions are shown in Table 2.

When participants were asked whether they had attended any prior courses that helped increase their professional acumen in relation to obesity, 70.6% participants responded positively. While the majority

Table 1 Socio-demographic characteristics of the participants.

Characteristic	(N = 218)	%
<i>Age</i>		
≤21	31	14.2
22–23	103	47.2
≥24	84	38.5
<i>Gender</i>		
Male	80	36.7
Female	138	63.3
<i>Year of study</i>		
2nd year	66	30.3
3rd year	80	36.7
4th year	72	33.0

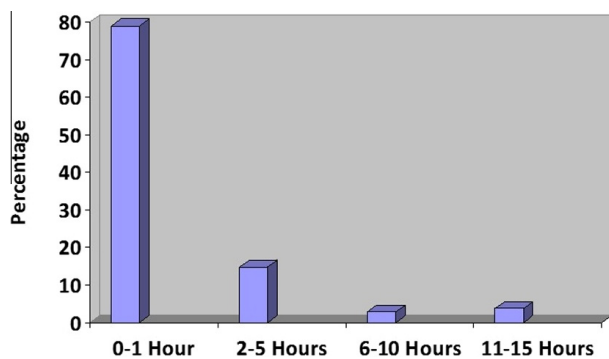
of participants (89%) reported that obesity is a chronic medical disease, only 12.8% thought that small weight loss could have beneficial effects. More than half of the participants (59.6%) perceived obesity as a serious medical condition, but only a small proportion was able to define obesity (22%) or provide a differential diagnosis for obesity (35.8%). Knowledge-based questions and their responses are provided in Table 2.

Participants responded about their professional impressions of obesity in sequenced questions. Around 30% of participants agreed that they would make special accommodations in their dental offices for obese patients with their equipment and office furniture. Although the majority of participants reported that the assessment of the dietary habits of their patients is important, only 47% of participants stated their interest in obesity-related courses in dental school.

When asked questions about their attitudes towards obese patients, more than half of the participants reported that they feel uncomfortable examining obese patients and asking them about their dietary habits and history of appetite suppressants. Around 63% of participants thought that obese individuals are lazier than normal weight patients, and 35% of participants thought that obese patients lack will power and motivation for health.

4. Discussion

The principle objective of this study was to evaluate the knowledge, perceptions, and attitudes of dental students about obesity. The results of this study provide insights into the lack of curriculum and its overall impact on obesity-related attitudes among dental students. More than two-thirds of the dental

**Figure 1** Total number of hours allocated for obesity as perceived by the dental students.

students reported having between 0 and 1 h of formal obesity-related education as part of their dental school curriculum. Other studies have also identified a similar lack of dedicated obesity-related education in the dental school curriculum (Fogelman et al., 2002; Magliocca et al., 2005). One study reported that 40% of dental students had 0–1 h of formal obesity-focused education as part of their dental school curriculum (Magliocca et al., 2005). Another study reported that 72% of primary care physicians believed that they lack proper training for providing obesity-related education to their patients (Fogelman et al., 2002). These findings are disappointing and may be a result of a lack of interest and priority-setting by institutions and health authorities with regard to obesity-related education. Since Pakistan is ranked as the ninth most obese country worldwide (Ng et al., 2014), both dental and medical school curriculums should be revitalized to include courses providing obesity education.

Table 2 Details of the responses given by the participants.

Responses	Agree		Disagree	
	N	%	N	%
<i>Knowledge score</i>				
a. I have taken other courses prior to dental school that educated me about obesity	154	70.6	64	29.4
b. Obesity is a chronic medical disease	194	89.0	24	11.0
c. Small weight losses (5–10% of body weight) can produce important medical benefits for obese patients	28	12.8	190	87.2
d. Obesity is associated with serious medical conditions	130	59.6	88	40.4
e. I can correctly identify the WHO definitions of overweight, obese, and morbidly obese patients	48	22.0	170	78.0
<i>Perception score</i>				
a. Treating obese patients in dentistry means I will need to make accommodations in equipment and office furniture	64	29.4	154	70.6
b. In my discipline, it is important to assess a patient's dietary habits	170	78.0	48	22.0
c. I would be interested in learning about obesity in dental school	102	46.8	116	53.2
<i>Attitude Score</i>				
a. I have negative reactions towards the appearance of obese patients	144	66.1	74	33.9
b. It is difficult for me to feel empathy for an obese patient	110	50.5	108	49.5
c. I feel uncomfortable when examining an obese patient	130	59.6	88	40.4
d. Overweight people tend to be lazier than the normal weight people	138	63.3	80	36.7
e. Overweight people lack will power and lack motivation in comparison to normal weight people	76	34.9	142	65.1
f. I would feel uncomfortable asking an obese patient about his or her dietary habits	100	45.9	118	54.1
g. I would feel uncomfortable asking an obese patient about his or her past use of appetite suppressants or current and past anti-obesity medications	108	49.5	110	50.5

The majority of the participants in our study were unable to define obesity. In addition, most of the participants failed to identify obesity and to recognize potential health benefits associated with weight loss. Similar findings were observed in previous studies of dental students who had a limited understanding of obesity (Magliocca et al., 2005). This lack of knowledge in identifying obesity and its related health risks poses a significant challenge to dental professionals and raises serious questions about their clinical training. Encouragingly, more than 70% of the participants recognized obesity as a chronic medical condition. This finding was consistent with other studies, where 92% of primary care physicians and 56.3% of dental students were reported to recognize obesity as a chronic medical condition (Foster et al., 2003; Kumar et al., 2012).

In our study, only around 30% of participants reported feeling a need to make special accommodations with their dental office equipment and furniture for obese individuals. A similar finding was reported by Kumar et al. (2012), where 54.4% of the dental students responded negatively towards making special accommodations for obese patients in their dental offices. This may be due to a fear that the prerequisite to make special accommodations for obese patients may affect the cost-effectiveness and feasibility of their dental set-up. The majority of the participants in our study believed in the importance of dietary assessments for their patients. This finding is very important, as it may help establish obesity-related risk factor assessments and facilitate the implementation of prevention protocols, such as dietary modifications, increased physical activity, and exercise programs. Notably, almost half of the participants in our study were in favour of having more obesity-related courses during their dental school training. These findings were consistent with Kumar et al. (2012), where 60.6% of dental students were interested in learning more about obesity. This suggests that dental students are motivated to learn about obesity, and that the proper implementation of a curriculum focused on obesity prevention and rehabilitation may play a key role in controlling obesity.

Our assessment of the attitudes of dental students towards obesity yielded some worrisome findings. It revealed that dental students considered obesity to be related to personality and aesthetics. It showed that the dental students attributed personality characteristics, such as appearance, laziness, feeling uncomfortable, lack of self-control, and low motivation, to obesity. Around 64% of the dental students considered obese people to be lazier than normal weight people. Over 50% of the dental students reported that they feel uncomfortable asking obese patients about their dietary habits and diet control medications. Similarly, more than half of the participants reported a negative reaction to the appearance of obese patients and were uncomfortable with examining obese patients. Several other studies have reported similar obesity-related attitudes among health care providers (Blumberg and Mellis, 1985; Cecchini et al., 2010; Harvey and Hill, 2001a,b; Lamb et al., 2010; Lois and Kumar, 2009; Maroney and Golub, 1992; Najman et al., 1982). On the contrary, our findings were inconsistent with those of a study by Neumark-Sztainer et al. (1999), conducted among health care providers, where the majority of respondents did not associate obesity with personality characteristics.

5. Conclusion

Dental education reforms lack the basic and specialized concepts of obesity-related education as a core component of the dental curriculum. Since obesity is a potential modifying factor for a variety of dental conditions, it should be an integral part of the dental curriculum, with a focus on the need for implementing proper obesity-related education in response to dental treatment needs. Oral health physicians should also educate their patients about the benefits of weight loss with regard to both their general and oral health.

Conflict of interest

The authors have no conflicts of interest to declare.

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