CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
SJIF Impact Factor: 7.187
http://doi.org/10.5281/zenodo.4844364

Avalable online at: http://www.iajps.com *Research Article*

KNOWLEDGE, ATTITUDE, MANAGEMENT, AND CLINICAL EXPERIENCE OF DENTISTS REGARDING PATIENTS WITH EATING DISORDERS IN SAUDI ARABIA

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Article Received: February 2021 **Accepted:** February 2021 **Published:** March 2021

Abstract:

Objectives: *The aim of this study was to assess the knowledge, attitude, management, and clinical experience of dentists regarding patients with eating disorder in Saudi Arabia.*

Method and Methods: *A cross-sectional analytical study was conducted to assess and evaluate the knowledge, attitude, management, and clinical experience of dentists regarding patients with eating disorders in Saudi Arabia. Participants for this study were male and female dental practitioners working in governmental or private sector and willing to participate (n= 485). Data was collected using a self-administered structured questionnaire, which consisted of 25 items related to socio-demographics of the participating dentists, their knowledge of ED, clinical experience, attitudes and perceived management preferences.*

Results: *The majority of participants were Saudi female. About 85% (422) of the participants, were aware of eating disorders (ED). More than 45% (230) of the participants rated themselves as average with regards to overall knowledge about ED. 40% (195) were not sure if they could diagnose patients with bulimia nervosa but anticipated that they could. More than half of the participants 54.8% (276) stated that they are qualified enough to provide dental care for eating disorder patients. More than 60% (323) stated that they have never treated patients with eating disorders. About 60% (288) of the professions informed patient and/or parent and referred them for consultation when they were suspected to have ED.*

Conclusion: *According to these findings, dentists in Saudi Arabia reported average knowledge regarding ED and insufficient clinical experience. Therefore, there is a need to increase both undergraduate and continuing education in this field to improve the management that a dentist can provide for ED patients.*

Keywords: *Eating disorders, Dentists, Knowledge, Attitude*

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Please cite this article in press Sanjeev B. Khanagar et al., ***Knowledge, Attitude, Management, And Clinical Experience Of Dentists Regarding Patients With Eating Disorders In Saudi Arabia.,*** *Indo Am. J. P. Sci, 2021; 08(03).*

INTRODUCTION:

Eating disorders (ED) are psychiatric conditions described by abnormal eating habits that result in an impairment of personal physical or mental health [1]. Psychiatric disorders often complicate oral health due to medication related saliva reduction, which leads to xerostomia, dental caries and periodontal disease. Moreover, self-induced vomiting allows the exposure of the enamel to stomach acids, which prompts demineralization resulting in enamel sensitivity and erosion [2,3,4]. Unfortunately, many patients with eating disorders develop irreversible oral diseases due to the lack of oral care and prevention. Providing comprehensive care to ED patients and its prevention needs a multidisciplinary team which includes dental professionals [5]. However, patients with eating disorders are not aware of the importance of dentists' role in providing preventive oral care, and they commonly fail to receive appropriate oral health care. This leads to lower levels of knowledge and clinical experience in the dental profession in managing patients with eating disorders [6]. Treating the oral manifestations is important for the overall management and prognosis of ED patients.

Early diagnosis of eating disorders is the key for better outcome, and it also reduces the risk of oral complications [7]. A lot of systemic diseases have oral manifestations, which enables dentists to diagnose them through regular checkups. However, studies have shown that dentists and hygienists do not have enough knowledge in regard to eating disorders [8]. According to a study conducted among Swedish dentists, the knowledge and clinical experience of eating disorders were insufficient. Saudi Arabia has no data available as to the knowledge, attitude, management, and clinical experience of ED patients among dental health care providers [9,10]. The aim for this study was to assess the knowledge, attitude, management, and clinical experience of dentists regarding patients with eating disorder in Saudi Arabia. The impact of this study reflects the extent in which dental health care providers need to improve their knowledge and attitude about eating disorders.

MATERIALS AND METHODS:

A cross-sectional analytical study was conducted to assess and evaluate the knowledge, attitude, management, and clinical experience of dentists regarding patients with eating disorders in Saudi Arabia. The study was scheduled over a period of three months (September 2020 to November 2020).

Before the start of the study, the Ethical Clearance was obtained from the Institutional Review Board (IRBC/2301/20). Based on the results of the study reported in the literature and using 5% relative precision and 95% confidence level, the required sample size estimated was 485 dentists [1].

Study subjects:

Convenience sampling technique was used for selecting the subjects for the study, considering the selection criteria to meet the sample size of 485. Male and female dental practitioners working in governmental or private sector and willing to participate were included in the study. Dental students were excluded from the study. Also, dental practitioners who are not working in Saudi Arabia were excluded from the study. An online consent was obtained from the willing participants. The participants were assured that the collected data would remain confidential and anonymous. No identifiers or personal information was collected.

Questionnaire:

The data was collected using a self-administered structured questionnaire. The questionnaire was designed after referring similar studies reported in the literature [2]. The questionnaire consisted of 25 questions. Most of the questions had multiple choice format and two of them were open-ended questions. The questionnaire was divided into four sections: socio-demographic data, knowledge, attitude and management, and clinical experience. The socio-demographic section consisted of age, gender, nationality, length of professional years, type of practice (government, private or both), and professional position. The knowledge section included a set of questions that assessed the general and oral knowledge of eating disorders. Dental practitioners' attitude and management of eating disorders as well as their clinical experience were assessed in the last sections of the questionnaire.

Pilot study:

A pilot study was conducted to assess the reliability and feasibility of the questionnaire. 15 dentists who participated in the pilot study were asked to fill the questionnaire and comment. The final questionnaire was adjusted based on their comments and suggestions.

Statistical analysis:

The data was entered and analyzed using JMP. The categorical variables were compared using the chi-square ($\chi 2$) test. Pearson's correlation coefficient was used to check the association between the demographic variables and the participants' responses. A p value ≤ 0.05 was considered to be significant.

RESULTS:

1. Socio-Demographic and Personal Data:

In the present study, 50.1% (245) of the participants were between 21 and 25 years of age. 32.3% (158) participants were within 26- 30 years of age, 6.7% (33) participants were within 31-35 years, 6.7% (33) participants were within 36-40 years, and 3.1% (15) participants were above 41 years of age (Figure 1). The female participant were 50% (245) as male participants were 49.8% (244) as shown in (Figure 2). Nationality of the participants was assessed and the majority of the participants 96% (471) were Saudi nationals with 3.6% (18) only being Non-Saudi (Figure 3)

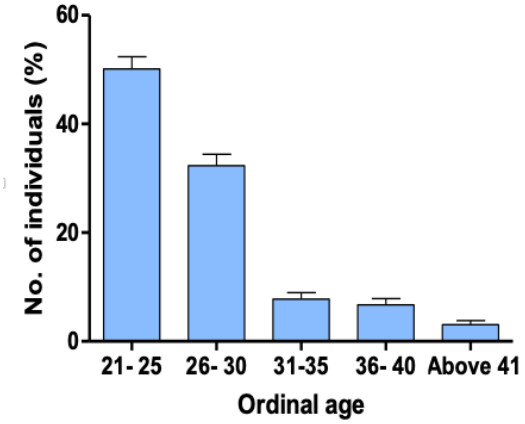

Figure 1: Distribution of participants by ordinal age.

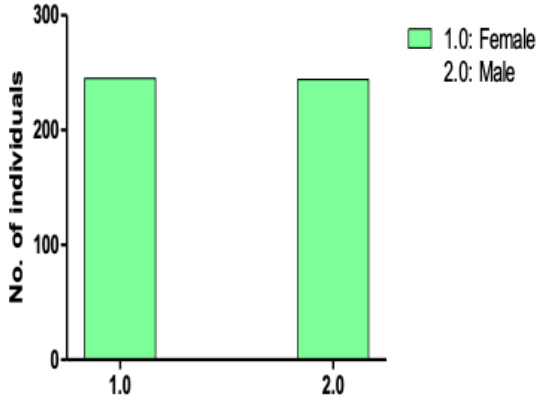

Figure 2: Number of female and male participants

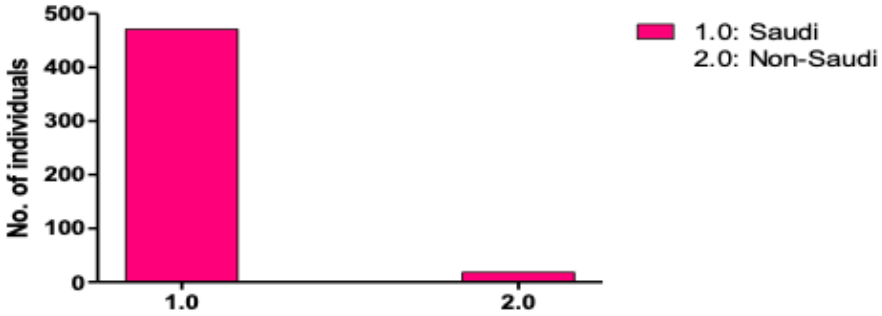

Figure 3: Nationality of Participants.

2. Frequency of Professional Experience, Type of Practice and Professional Position:

84.2% (412) of the participants had an experience between zero to five years at the time of the study, which sites majority being residents. 9% (42) participants and 3% (14) had experiences between 6-11 and 12-17 years respectively. Only 2.2% (11) of the participants had an experience of 18 years and above (Figure 4). The number of participants that practice both in government and private sector were 14% (67) with the majority of the participants, 65% (318), practicing their career in government facilities. 21% (104) of the participants practice in the private sector (Figure 5). The results from this data confirms the age experience, with majority 83% (412) having between zero to five years of experience. The number of Interns/ Residents was 57.6% (277). General dental practitioners were 29.4% (144) as dental specialists and consultants 9.2% (45) and 4.7% (23) respectively. (Figure 6)

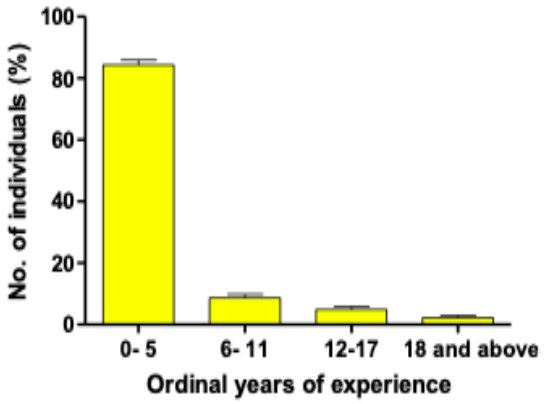

Figure 4: Frequency of professional experience age.

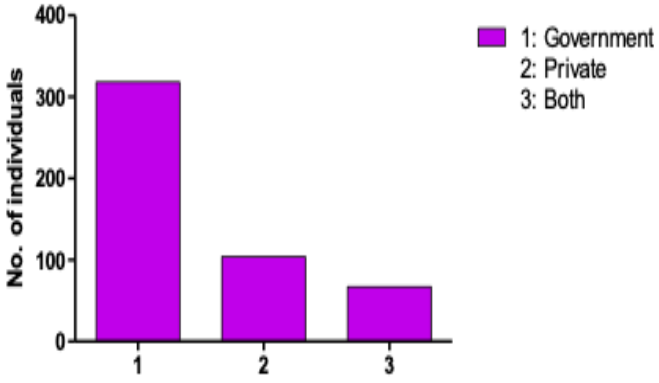

Figure 5: Type of practice among dentists.

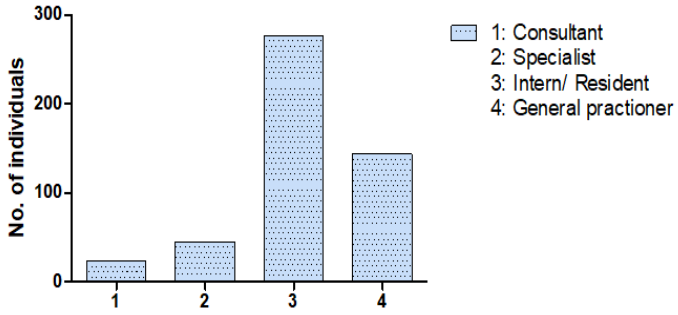

Figure 6: Professional position

3. Knowledge

Majority of the participants, 86% (422), were aware of eating disorders (ED) as 14% (67) were not aware of eating disorders. There was a significant difference ($p< 0.05$) between the responses Yes and No (Figure *7*). 88.9% (439) of the participants stated that psychological factors are involved in the etiology of eating disorder. 70.5% (357) and 51.8% (263) stated sociocultural factor and Hereditary/genetic factors respectively. 7.8% (38) did not know factors involved in etiology of eating disorders. There was a significant difference ($p< 0.05$) in these responses (Figure 8). 84.7% (427) of the participants stated that erosion of teeth is a finding in ED patients. 24.1% (121) recognized parotid enlargement, 37.6% (188) angular stomatitis, 50.6% (259) oral petechia/ ulcers/ abrasions, and poor oral hygiene responses contributed 52.0% (262). 8.8% (43) did not know oral findings in patients with eating disorders. There was a significant difference ($p< 0.05$) in these responses (Figure 9).

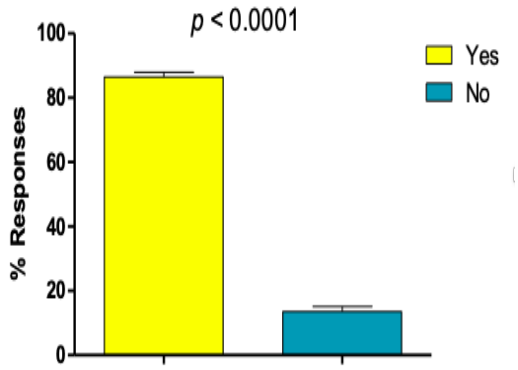

Figure 7: Awareness of eating disorders

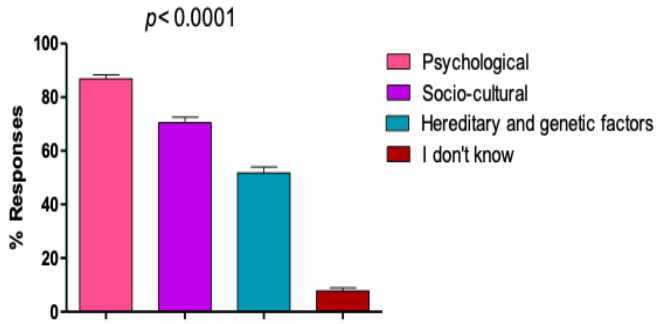

Figure 8: Factors involved in the etiology of eating disorders

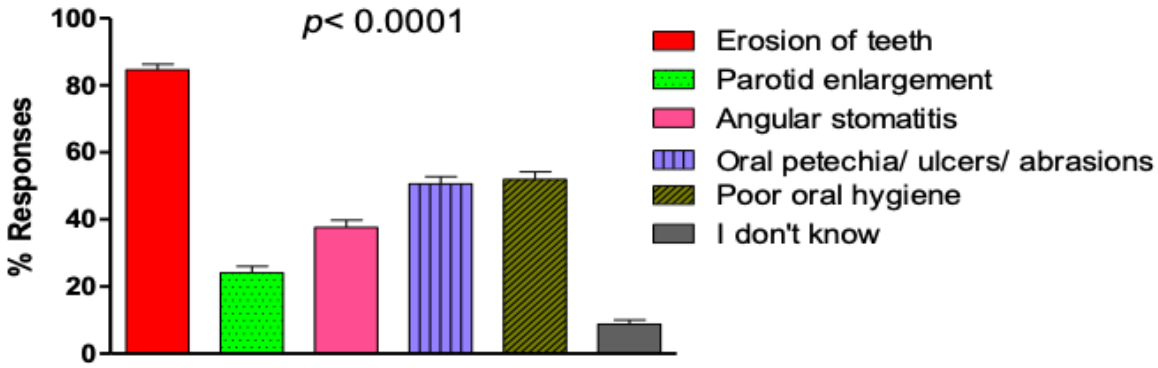

Figure 9: Oral findings in patients with eating disorders

36% (180) of the participants stated that they could diagnose anorexia nervosa, and 47% (237) were not sure but anticipated that they could. 17% (87) stated that they could not diagnose it in their clinic. There was a significant difference (p< 0.05) in these responses (Figure 10). 40% (202) of the participants stated that they could diagnose bulimia nervosa, and 41% (209) were not sure but anticipated that they could. 19% (93) stated that they could not diagnose it in their clinic. There was a significant difference (p< 0.05) in these responses (Figure 11). 45% (223) of the participants could differentiate between anorexia nervosa and bulimia nervosa. 26% (130) could not differentiate, as 29% (147) did not know how to differentiate. There was a significant difference (p< 0.05) in these responses (Figure 12).

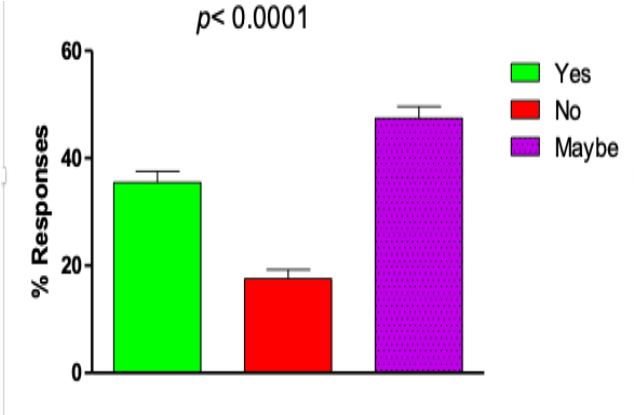

Figure 10: Anorexia nervosa diagnosis in the clinic

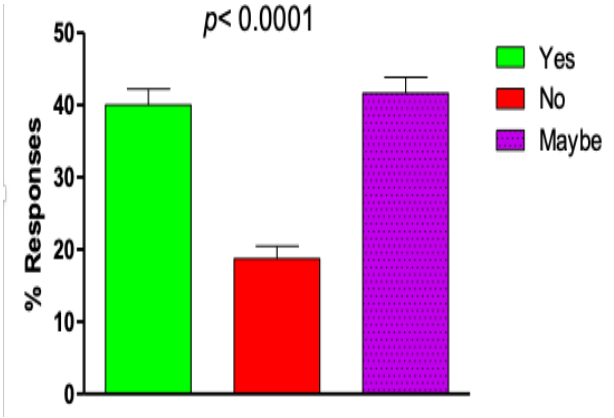

Figure 11: Bulimia nervosa diagnosis in the clinic

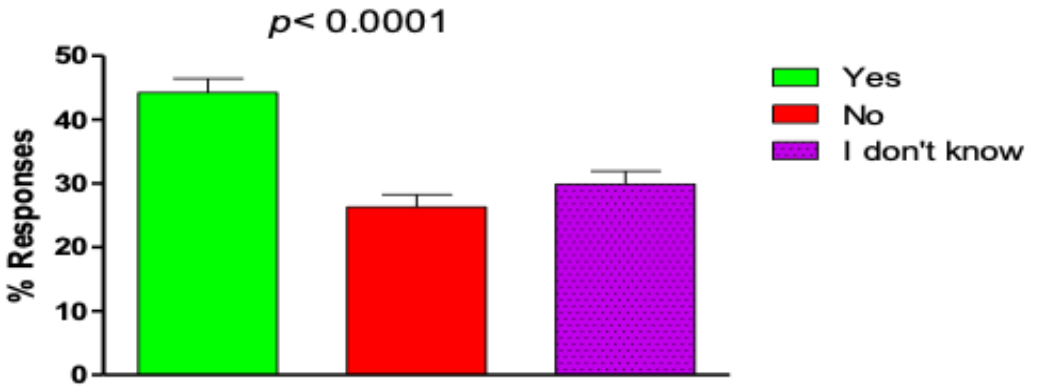

Figure 12: Differentiate anorexia nervosa from bulimia nervosa

76.4% (385) of the participants stated that dental school was their source of information about ED. Media, own experience and self-studies' responses were 28.7% (144), 17.5% (87), and 42.4% (216) respectively. 8.5% (43) stated courses as 2.0% (9) stated other sources contributed information about eating disorders. There was a significant difference ($p< 0.05$) in these responses (Figure 13). 47% (237) of the participants rated themselves as average with regards to overall knowledge about ED. 4.6% (23), 23.4% (118), 16.5% (83), and 8.5% (43) stated their knowledge as being excellent, good, fair and poor respectively. There was a significant difference ($p< 0.05$) in these responses (Figure 14).

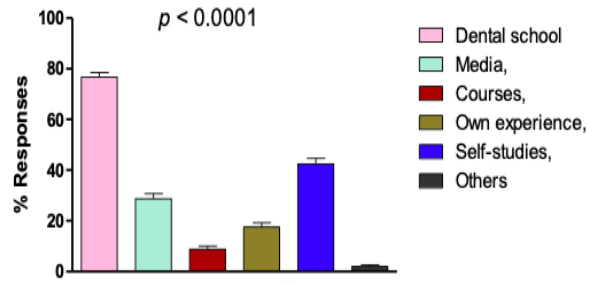

Figure 13: Source of information about eating disorders

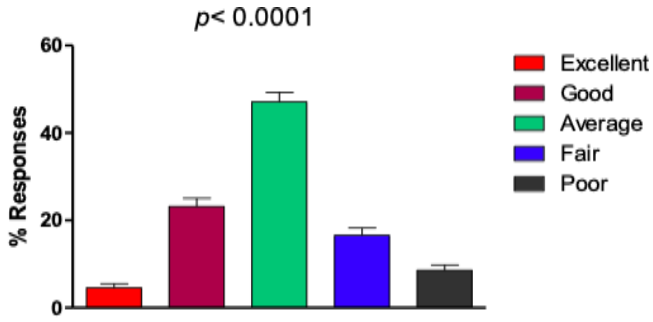

Figure 14: Overall knowledge about eating disorders

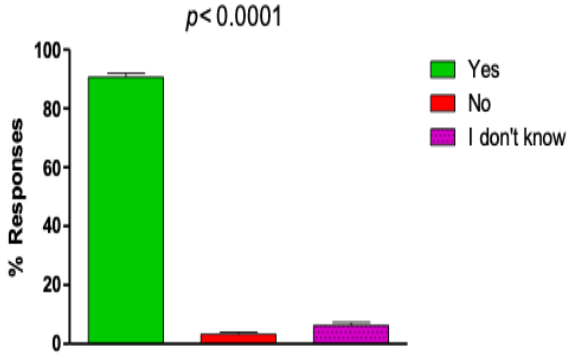

Table 15: Dental treatment is important in the overall medical management

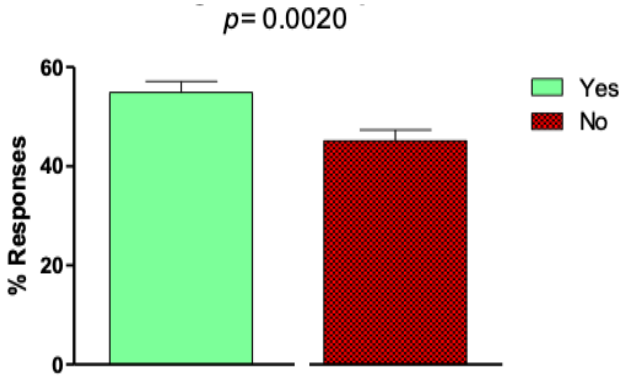

Table 16: Qualified enough to provide dental care

4. Attitudes and Management

90.6% (457) of the participants agreed, that dental treatment is important in the overall medical management of patients with eating disorder. Marginal responses of 3.2% (16) disagreed as 6.2% (31) did not know if the question was true or false. There was a significant difference (p< 0.05) in these responses (Figure 15). 54.9% (276) of the participants stated that they are qualified enough to provide dental care for eating disorder patients. 45.2% (228) admitted to being less qualified. There was a significant difference (p< 0.05) in these responses (Figure 16). Majority of the participants, 51.5% (259), have never been in a difficult situation informing patients and/or parents about suspected ED. 28.5% (145) were in difficult situation sometimes as 16.2% (81) have never been in difficult situation. 3.8% (19) of the participants always found it difficult informing them. There was a significant difference (p< 0.05) in these responses (Figure 17). 74% (373) of the participants stated that they would recommend eating disorder patients to seek other medical care. 14.6% (73) stated they would treat them as ordinary patients, and 11.6% (58) did not know. There was a significant difference (p< 0.05) in these responses (Figure 18). 64.1% (312) participants stated that consultants should dentally manage eating disorder patients, while 78.8% (385), 61.3% (298) chose specialists and general dentists respectively. Only 33.3% (161) stated that dental hygienist should dentally manage ED patients, which was the least. There was a significant difference (p< 0.05) in these responses (Figure 19).

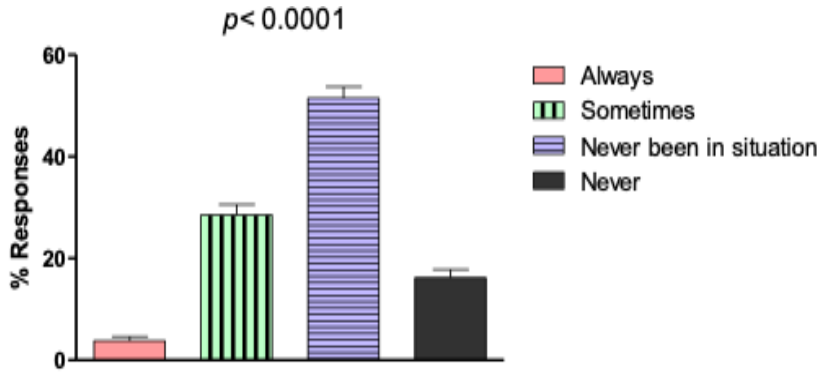

Figure 17: Difficult experience in informing patients and/or their parents about suspected

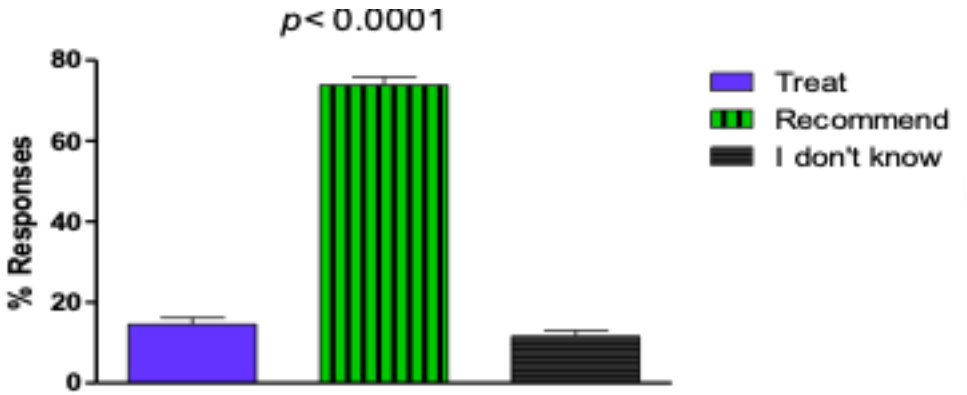

Figure18: Eating disorder patient management.

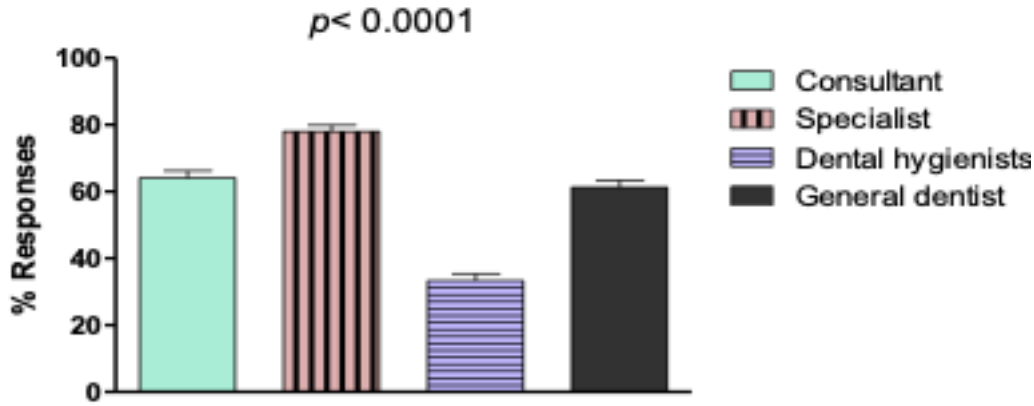

Figure 19: Who should dentally manage eating disorder patients.

5. Clinical Experience I and II

66.3% (323) stated that they have never treated patients with eating disorders. 22.4% (107) had treated between 1- 2 patients, and 7.6% (37) had treated 3-4 patients. 4.6% (22) stated that they had treated 5 or more ED patients. There was a significant difference ($p< 0.05$) in these responses (Figure 20). Several ways are used to know if the patient has an eating disorder. 48.5% (237) knew by doing general and oral examination. 25.7% (126) of the participants stated that they were informed by the patients. 12.3% (59) and 15.2% (73) stated they were informed by patient's parent and patient's medical records respectively. There was a significant difference ($p< 0.05$) in these responses (Figure 21). 65.5% (320), 59.6% (293), 55.6% (271) of the participants stated that dentine hypersensitivity, periodontal diseases, and dental caries respectively, as the common dental problems encountered by ED patients. 21.6% (107), 31.6% (156) and 47.3% (230) of the participants supported TMD, dental fear and anxiety, and aesthetics respectively. 5.3% (26) stated other dental problems are commonly encountered by eating disorders patients. There was a significant difference ($p< 0.05$) in these responses (Figure 22). 63.2% (308) rated their experiences with ED patients as neutral, 8.8% (43) and 26.3% (127) found it easy and difficult respectively. 2.9% (14) stated their experience with ED patients as very difficult and 3.5% (17) as very easy. There was a significant difference ($p< 0.05$) in these responses (Figure 23).

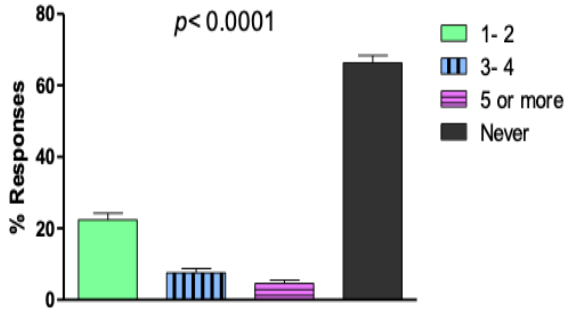

Figure 20: Number of ED patients treated.

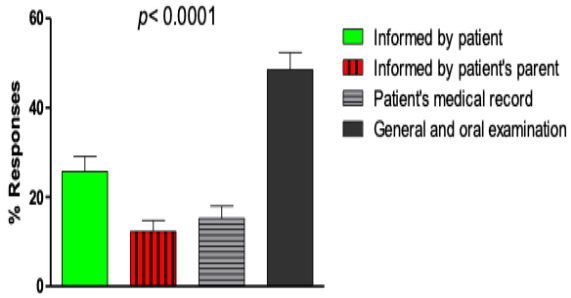

Figure 21: Know-how on patients with ED.

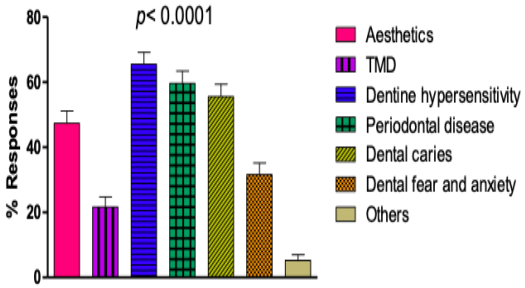

Figure 22: Common dental problems encountered by ED patients.

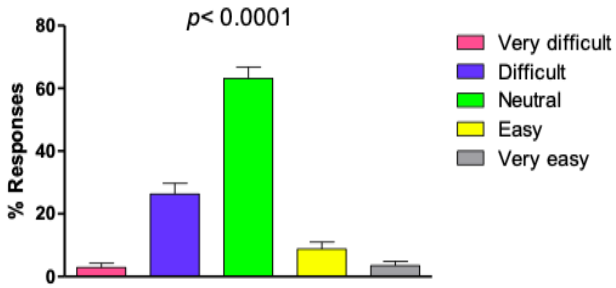

Table 23: Rating experience with ED patients.

59% (288) of the professions informed patient and/or parent, and referred them for consultation when they were suspected to have ED. 41% (200) just informed the patient without referring them. Marginal dental professions, 2.4% (12) did not inform the patient and/or parent. There was a significant difference ($p< 0.05$) in these responses (Figure 24). Several reactions were given by the patients diagnosed with ED. 60.2% (49) admitted, 33.7% (28) denied and 34.9% (29) requested referral to a physician for confirmation. Only 9.6% (7) discontinued their dental treatment. There was a significant difference ($p< 0.05$) in these responses (Figure 25).

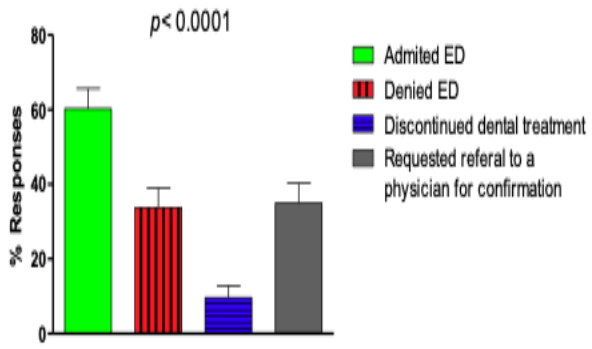

Figure 24: Actions taken when ED is suspected.

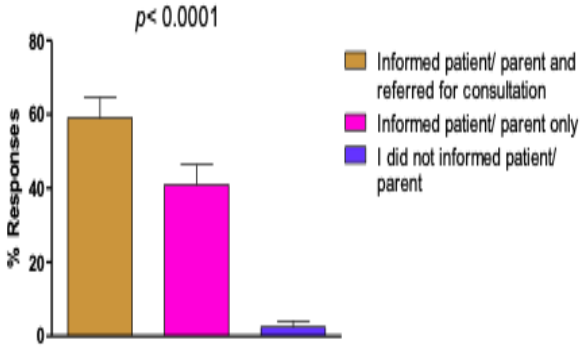

Figure 25: ED patients' reactions when informed them that their oral status could be indicative of ED

DISCUSSION:

Dentists have a crucial rule in the diagnosis of eating disorders because they are in a position to assess the patients' oral health more than other health care providers. Therefore, it is important to raise the dentist knowledge and attitude regarding eating disorders to guide the patients before they develop more severe symptoms, which could affect the dental treatment plan and the overall health of the patient.

The participation rate in our online survey was high (102%), with females' participants slightly higher than males (51% females and 49% males). Unlike the Norwegian study, their participation rate was only 40% (47 % women and 53 % men) [2]. A study was conducted by McLeod et al. to review the health care surveys in the United States, they noted a downward pattern of response rates of surveys from 1998 to 2008 [11].

One of the key results of this study was that the majority of dentists were aware of what eating disorders are. This is important because dentists should have a high level of knowledge to be able to recognize signs and symptoms of ED. In fact, 48.5% of the participants recognized that their patient is an ED patient from general and oral examination. However, the majority of them had never treated an eating disorder patient, which indicates that the level of clinical experience is unsatisfactory and limited, comparable to previous studies [2,12]. This result is similar to another article published by Burgard M et al., where they found that most dental practitioners were aware about eating disorders, yet they encountered a low number of cases [13].

More than 50% of the responses in this study were from dental interns or residents, unlike other published articles, which only assessed the knowledge of general practitioners and above [2,12]. This fact might have affected the overall knowledge level, which was reported as average. Unlike other studies, in which the level of knowledge was reported as good to very good [2]. Also, this explains why the length of professional years was mostly reported between 1-2 years.

The knowledge of the dentists in the current study was mostly obtained from dental school. Unlike a previous study done on Norwegian dentists, in which the source of information was mostly acquired from media or own experience [2,12]. In an article published by DeBate RD et.al, they found that 71% of dental program curriculum included the general characteristics of anorexia nervosa [14].

More than 80% correctly identified psychological factors to be involved in the etiology of ED, similar to the study done on Norwegian dentists, which yielded 92% response [2]. This result is critical because being able to categorize the disease helps in referring the patient to the correct physician or specialty.

The most common oral finding recognized by the dentists in the study was erosion of teeth (84.7%), similar to other reported studies [12,14]. However, dental erosion can only be manifested until self-induced vomiting continues for 2 years [15]. Therefore, other symptoms should also be familiar to the dental practitioner in order to identify ED patients. Other findings such as parotid enlargement was only recognized as an oral finding by 24%. Similarly, in a study conducted by DeBate RD et.al, only 29.5% of dentists recognized parotid enlargement as an oral manifestation of ED. They concluded that only 16% of dentists had a high knowledge regarding the oral signs of ED. In a study published in 2010, concluded that oral health care practitioners are most likely the first to see ED

patients [16]. Thus, it is important to know the signs and symptoms of ED to do prompt referral.

In the current study, majority of dentists recommended ED patients to seek medical care or referred them to a physician, similar to a Swedish study. The Swedish study concluded that a more organized collaboration should be formed between the dental team and other partners interested in the care of ED patients [12]. In Norway, the recommendation for ED cases is primarily to be referred to the general practitioner or the psychologist [2].

With regards to the dental management of ED patients, the majority of dentists felt that the patient/relative should be informed in a case of suspected ED, and half of them have never faced difficulties informing patients/parents about suspected ED. It is necessary to note that, among those dentists who informed the patient/guardian about their suspicion of ED, almost half of the patients confirmed the suspicion of ED when being asked. Furthermore, about 35% of patients denied the ED diagnosis. So, a dentist might have encountered an ED patient without knowing, which could explain why the level of knowledge was mostly reported as being average. 45% admitted to being less qualified in providing dental care to ED patients, which means that they need more training to be confident enough to provide dental care to those patients. This confirms the results of previous research and recommendations for additional training in providing care to ED patients in undergraduate and postgraduate dental education [2,12].

One of the limitations of the current study is the method of data collection, which was done through social media platforms. So, the responses might be restricted to users of social media such as Twitter and WhatsApp. In general, the online survey method is a disadvantage to any provider who does not have access to the internet. The other limitation is that more than 50% of the responses where from dental interns or residents, who may not have enough clinical experience with ED patients. Therefore, this may cause bias in the results of the study.

There is a strong need for more in-depth training of dentists in the diagnosis, management and treatment of eating disorder patients. Implementing educational systems and making knowledge readily available will help to resolve these issues.

CONCLUSIONS:

In conclusion, understanding eating disorders is a step towards improving healthcare outcomes for patients with eating disorders. Therefore, the findings of this study suggest more training of the dentists in the diagnosis for the ED patients. Other symptoms should also be familiar to the dental practitioner in order to identify ED patients not only erosion.

The participating dentists in this study reported average knowledge regarding ED and its treatment. Therefore, there is a need to increase education in this field in order to improve preventive and management that a dentist can provide for ED patients.

In this study, the majority of the dentists recommended referring the patient to a physician, therefore, more organized collaboration and interdisciplinary team must be formed between the dentists and the physicians.

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