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Research Article

Self-Management of Dental Pain by Patients of Imam Abdurrahman Bin Faisal University's Dental Hospital

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Abstract

Toothache is the most common cause of oral pain and can impact routine daily activities such as eating, working, and socializing. Moreover, toothache often requires professional dental treatment. Public and private healthcare is available to the population of Saudi Arabia; however, some people cannot access healthcare due to long waiting lists and the cost of private treatment. The aim of the present study is to assess the prevalence of dental pain, self-management modalities, and attitudes and behaviors related to self-management modalities for dental pain among patients visiting the Dental Hospital of Imam Abdurrahman Bin Faisal University (IAU). A survey-based, cross-sectional study was conducted at the Dental Hospital of IAU from December 2017 to May 2018. A questionnaire was distributed, and statistical analysis was performed using SPSS version 20.0. Out of the 600 subjects to whom the questionnaire was distributed, 596 (216 [36.2%] males and 380 [63.8%] females) responded (response rate 99.3%). Among 596 subjects, 85% reported experiencing dental pain within the past year; of them, 52% reported seeking dental treatment. Subjects between (18 - 34) years of age were significantly more likely than those in the other age groups to report self-management of their dental pain using analgesics ($P < 0.05$), and those over 65 years of age were more likely to use herbs for their dental pain. Dental pain is prevalent among patients at IAU's Dental Hospital. The subjects used self-prescribed medications or herbs and dental treatment to manage their dental pain.

Keywords: *Dental Pain; Self-Management; Self-Care; Self-Medication; Herbs; Analgesics; Antibiotics*

Introduction

Toothache is the most common cause of oral pain and can impact routine daily activities such as eating, working, and socializing [1]. The prevalence of orofacial pain in the northwestern United States (US) during 2014 was 16.1%, most frequently in the dentoalveolar (9%) and musculo-ligamentous tissue (7%) [2]. Professional dental treatment is the most effective means of managing oral health problems [3]. However, in the United Arab Emirates, 44% of the population self-medicate for relief of dental pain [4], compared to 57.3% in Pakistan [5] and 72% in India [6,7]. More than one-half of the US adult population use some form of alternative therapy [8]. Public and private healthcare is available to the population of Saudi Arabia; however, some people cannot access healthcare due to long waiting lists and the cost of private treatment [9,10].

We assessed the prevalence of dental pain,self-management modalities, and attitudes and behaviors related to self-care remedies for dental pain among patients of the Dental Hospital at Imam Abdurrahman Bin Faisal University (IAU).

Methods

A survey-based, cross-sectional study was conducted from December 2017 to May 2018 at the Dental Hospital of IAU. The questionnaire was divided into the following four sections: demographic characteristics (e.g. socioeconomic level and educational level); previous experience of dental pain; and attitudes and behaviors related to self-management remedies. The questionnaire was circulated in the patients' waiting areas at IAU's Dental Hospital.

Statistical analysis was performed using SPSS version 20.0. Univariate analyses were performed to calculate the frequencies and proportions of categorical variables. A bivariate analysis was used to assess the relationship between the demographic variables and self-ma-

nagement modalities. The chi-squared test was employed to assess the associations of self-management modalities with the demographic variables. A P-value of ≤ 0.05 was considered indicative of statistical significance.

Results

The questionnaire was distributed to 600 subjects who visited the Dental Hospital at IAU), 596 responded to the questionnaire (response rate of 99.3%). Among the subjects who responded, 216 (36.2%) were males and 380 (63.8%) were females; 471 (79%) were of Saudi nationality, and 125 (21%) were of other nationalities.

The subjects (mean age 34.7 ± 12.08 years) were divided into five age groups (Figure 1). Most of the subjects had a high educational level (Figure 2) and 507 (85%) had experienced dental pain in the past year. Of the subjects, 513 (86%) experienced intermittent dental pain and 83 (14%) continuous pain. The mean pain score of the subjects, on a scale of 1-10, was 6.46 ± 2.12 (severe) (Figure 3).

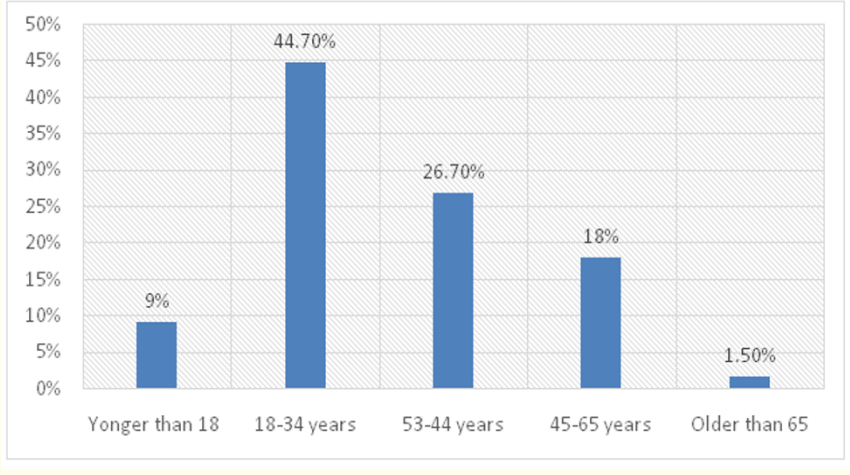

Figure 1: *Distribution of the participants according to their age.*

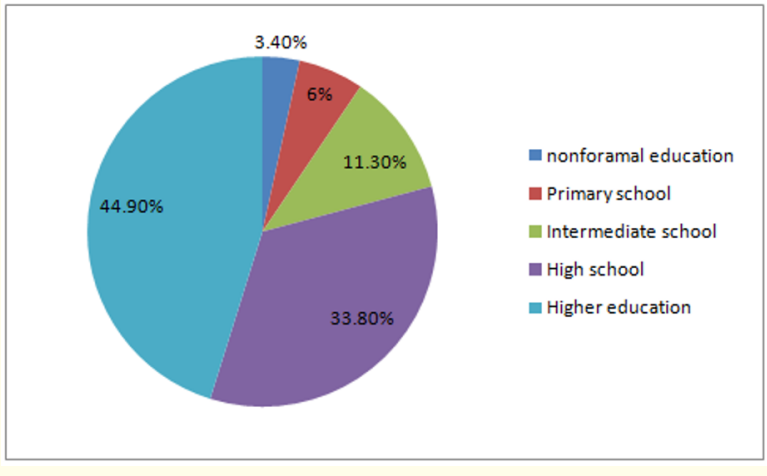

Figure 2: *Distribution of the participants according to their educational level.*

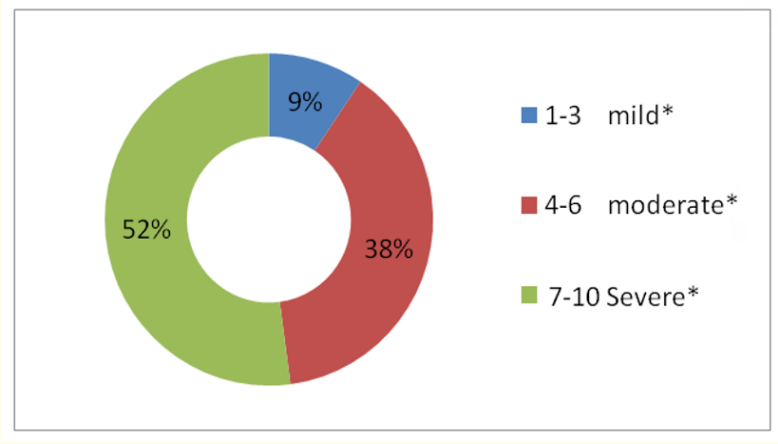

Figure 3: *Distribution of the participants according to the severity of dental pain.*
**Grouping of pain severity done by Scale from 0-10.*

Nearly half of the subjects), 52% reported that they visited a dentist to manage their dental pain. The subjects also used home remedies and non-prescription antibiotics and analgesics to relieve their dental pain (Table 1). Most of the subjects with severe dental pain preferred analgesics for self-management. However, the preferred self-management modality did not differ according to the severity of dental pain. The most frequently cited of the six possible responses to the question "If you use herbs to relieve dental pain what do you usually use?" was rinsing with warm saltwater followed by eugenol and the least frequently cited was Curcuma (Figure 4).

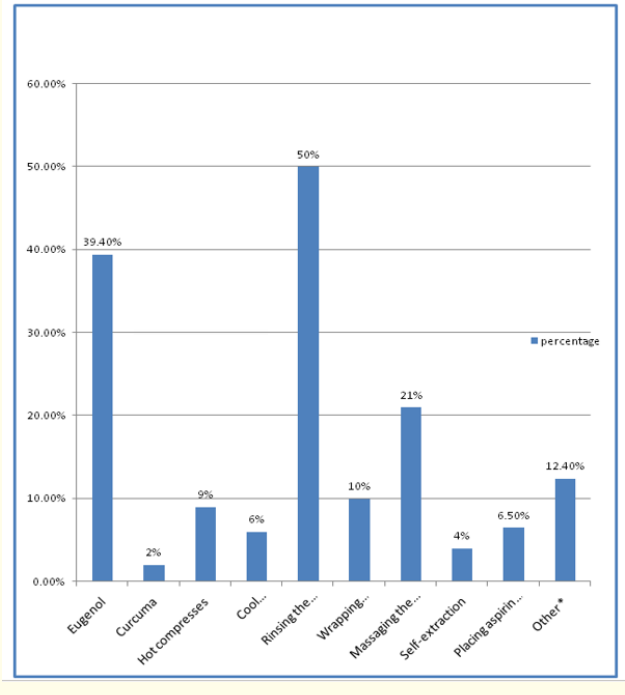

Figure 4: *Home remedies and self-care strategies used to manage dental pain.*
**Other: Rinsing, teeth brushing, olive or sesame oil, garlic on tooth, apply pressure on the tooth.*

How to manage the pain	No. of participants	Percentage
Going to dentist	304	52%
Taking Pain killer	302	50.7%
Taking antibiotics	67	11.2%
Using herbs	80	13.4%
Rinsing	179	30%
Brushing or using mouthwash	191	32%

Table 1: *Management of dental pain*

A significantly higher proportion of the subjects from 18 to 34 years of age compared to those in the other age groups used analgesics, while those more than 65 years of age preferred herbs for the self-management of dental pain (Table 2). Also, a significant proportion of the subjects with a low level of education used herbs to manage dental pain, compared to analgesics and antibiotics by the subjects with intermediate and high levels of education, respectively.

	Herb users	Analgesics users	Antibiotics users	P value
Gender				
Male	13%	51.85%	13.4%	0.834
Female	13.6%	50%	10%	
Age				
Younger than 18	15%	43.3%	2%	0.001
18 - 34	13%	54.7%*	10%	
35 - 44	15%	24.8%	15%	
45 - 65	10.3%	36.7%	12.2%	
Older than 65	22%*	22%	11%	
Average income (SR)				
Less than 10,000	14.6%	49%	14.3%	0.298
10,000 - 20,000	10.8%	46%	7.6%	
More than 20,000	11.7%	48.5%	4.4%	
None	25%*	15%	5%	
Primary school	13.8%	30.5%	11.1%	0.001
Intermediate school	16.4%	58.2%*	12%	
High school	9.4%	49.7%	38.8%*	
Higher education	14.4%	54.4%	10%	
History of dental pain in last year	13.6	53.2%*	11.8%	0.001
Yes				
No				
Nature of pain				
Intermittent	11.69%	49.31%	10.52%	0.784
Continues	13.25%	45.78%	14.45%	
How long does the pain last				
Seconds	16.66%	20%	5%	0.015
Minutes	11.25%	50.33%	6.62%	
Hours	12.12%	53.67%	14.28%	
Day	8.69%	45.65%	8.69%	
Days	12.03%	53.70%	15.74%	

Table 2: *Association between demographics variables and self management.*

**Significantly higher proportions at 5% level of significance.*

A large proportion of the subjects stated that they self-managed dental pain for reasons of cost and/or dental phobia (Table 3). Subjects who preferred to use herbs or antibiotics to self-manage their dental pain reported that herbs were the optimum modality for relief of toothache (Table 4).

Reasons for using self-remedies	Percentage	Percentage
Fear from the dental procedures	35%	35%
Cost	51%	*51%
Pregnancy	8.4%	8.4%
Difficulty in reaching dentist	25%	25%
Efficacy of home remedies	7.7%	7.7%
Others**	5%	5%

Table 3: *Reasons for using self-management.*
**Significantly higher proportions at 5% level of significance.*
***busy, neglected dental health, no side effect, laziness, long waiting list, wrong treatment.*

	Herb users	Painkillers users	Antibiotic users	p-value
Visiting dentist	10%	3.3%	7.5%	0.001
Using herbs	70%*	3.3%	74.6%*	
Taking painkillers	11.2%	14.2%*	17.9%	

Table 4: *Association between best action to take to manage toothache and Self-management (herbs, painkillers and antibiotic).*
**Significantly higher proportions at 5% level of significance.*

Discussion

Dental pain is a prevalent condition. Oral health has a direct impact on the quality of life, productivity, and social interactions. People who cannot obtain professional dental treatment are more likely to use alternative strategies to control their dental pain. Self-care behavior is more frequent among people who visit a dentist only when a dental problem arises than among those who visit a dentist at regular intervals [11]. Behaviors and attitudes of a person are strongly impacted by his/her sociocultural background. A significant proportion of the population had used several self-management approaches, which varied from self-care remedies to self-prescription, depending on their socioeconomic background.

In this study, the prevalence of dental pain was 85%, which is higher than in prior reports. Singh Wail., *et al*. [12] reported a prevalence of dental pain in the last 6 months of 28.3% in India in 2017. Meanwhile, a 2015 study in Brazil of healthcare personnel reported that the prevalence of dental pain in the last 6 months was 65.7% [13]. Differences in the duration of pain or sampling technique used in each study (e.g. pain in the past year or the last 6 months) may explain these results. In the present study, 46.45% of the subjects experienced severe pain, a frequency like those in previous works.

In India, the prevalence of severe pain in 2017 was 25.8%. In 2009, Cohen., *et al*. [8] reported that the prevalence of severe pain was 45.1%. In Pakistan [5], female patients were more likely to self-medicate (66.4%) than male patients (45.4%). In the present study, there was no significant sex difference in the frequency of dental pain self-management.

Among people of low socioeconomic status [3], 53.9% reportedly used at least one self-management modality for dental pain. In contrast, we found that the frequency of dental pain self-management did not differ significantly according to socioeconomic status. In agreement with this result, no difference was found according to the nature of the pain (intermittent vs. continuous); however, differences in

the use of self-management strategies were found according to educational level and age. Of the subjects, 52.7% reported self-medicating with physician-prescribed analgesics or antibiotics, and 47.3% reported using such medications without a prescription. Overall, these findings are in accordance with those of Abasaeed., *et al* [4]. Among the subjects, 65.8% used medications prescribed to them previously by a physician, and 77.7% kept them in their homes for future use. Among low socioeconomic status residents of Amritsar [3], 75.3% reported that they did not consult a physician to obtain relief from dental pain. Among those who did consult a physician, the majority saw private or public dentists; few consulted other physicians or rural medical practitioners. In the present study, family and pharmacists were the most common sources of self-management strategies. Also, 62% of the subjects used self-management as a temporary solution until they could visit a dentist, and the prevalence of self-medication with analgesics and/or antibiotics was 47.3%.

In the UAE, the prevalence of self-medication with antibiotics was 44% in 2009. Also, keeping medications at home was linked to future self-medication without consulting a physician.

Adedapo., *et al.* [14] reported that 48.9% of the Indian population self-medicated in 2015. In Pakistan in 2015, self-medication was preferred for reasons of cost by members of the lower class (40%), laziness and time by the middle class (55.6%), and dental phobia by the upper class (42%) [15]. In the present study, dental phobia and cost were the most frequently cited barriers to seeking professional dental treatment. This may explain why 60% of the subjects visited the Dental Hospital for an existing dental problem rather than for preventive care.

Conclusion

Dental pain is prevalent among patients of the Dental Hospital of IAU. subjects were used both self-prescribed medications or herbs and sought professional dental care to control their dental pain.

Funding

None.

Conflicts of Interest

No conflicts related to this work.

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