Factors affecting dental anxiety and beliefs in an Iranian population

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ABSTRACT

Introduction: The dentists feel influenced in taking care of patients, showing fear, anxiety, and avoidance in the dental situation.

Objective: The aim of this study was to decide current prevalence of dental anxiety and fear in a population of high school students in Qazvin, Iran

Method: The study group comprise of seven hundred and eighty randomly selected high school students participate in this research. There were 315 (40.38%) boys and 465 (59.62%) girls of the ages between 15 and 16 years. The questions were formulated to evaluate information without the need for dental examination. The data were obtained from the epidemiological study to assess anxiety and fear, with the questionnaire were used. We distributed questionnaires of, Dental Anxiety Scale (DAS), Dental Fear Survey (DFS).

Result: According to the results, dental anxiety and fear were found to be noticeably higher in the study group. 29% were found High anxiety and also in 21.8% of students had high fear in 30.4% of the study subjects, in that order the highest anxiety and fear levels were found in adolescents who had an extraction at their last visit. Those adultcent who had visited the dentist recently found to have higher fear and anxiety levels, while lower fear and anxiety levels were associated with adolescents who had never been to the dentist. The lowest fear and anxiety levels were oral prophylaxes.
Conclusion: According to our finding it may conclude that anxiety and fear are high among the students with previous traumatic dental exposure

Keywords: Dental anxiety; Fear; Dental health; Epidemiology; Iran

Introduction

Fear of dental practice is one of widespread distressing problem both for the dentist and public[1]. Anxiety may have an impact to the dentist-patient relationship in severe form and it may cause to misdiagnosis. Patients who had experienced of dental anxiety during dental visits reported the worst experiences had occurred during in their earlier lives[2, 3, 4]. More than 50% of the general people may expect to feel some anxiety during dental visits; approximately 7–12% of studies indicate that individual's experience of high levels of dental anxiety or phobia[5-7]. It has been reported as one of the most basic reasons for avoidance and neglect of regular dental care[8]. In many study dental anxiety has shown as one of the major factors associated with behaviors[9,10] .Patients with high dental anxiety are in high risk of experiencing oral health problems[8, 11].

It is important that dentists feel influenced in taking care of patients, showing fear, anxiety, and avoidance in the dental situation. Dentists have a tendency to rank difficult, uncooperative, and nervous patients as one of important main sources of stress[12]. Nearly 40% of the dentists found general psychological problems are the main reason for dental anxiety[13]. It has been recommended that previous experience may serve to establish and maintain trust[14]. Dental Fear Survey (DFS) and Dental Anxiety Scale (DAS) have been both used in measuring of anxiety in many English and non English speaking countries[15, 16].

Limited studies are available regarding dental anxiety and fear in Iran. The purpose of the present study were (a) to find out if there was a association between anxiety and fear with respect to potential or real dental treatment, (b) to find out if there be a relationship between anxiety and fear and the length of time since the last dental visit and the nature of the last dental visit, and (c) to find out the percentages of anxious and fearful adolescents and their range of anxiety and fear, and compare these figures to worldwide results. This study represents the first attempt at such in Iranian inhabitants.

Material and Method

The questionnaire

From a total of 1962 students attending eight different high schools in the industrial city of Alborz and Alvand in the Qazvin Province, Iran. The totals of 780 children's were randomly selected for participation in this study. The student population consisted of 315 (40.38%) boys and 465 (59.62%) girls. The protocol was approved by the Institutional Review Board of Qazvin University of Medical Sciences in agreement with the Declaration of Helsinki. All students were

informed of the nature of the study and a consent form, approved by the Institutional Review Board, was signed by each participant prior to the study (17).

After a brief explanation about the structure and aims of this survey, all participants received an unidentified copy of the questionnaire before lecture class began. The distributed of questionnaire to the students were through the school authorities. The first parts of the survey contain inquiries about age, grade, previous and frequency of visits to the dentist. Questions regarding prior exposure to lectures about oral health and treatment in school and the nature of the last visit to the dentist were also included. We were used by two measures to assess dental fear and anxiety, namely the Dental Fear Survey (DFS) and the Dental Anxiety Scale (DAS), which have been translated into Persian by the researcher, validated, by a psychologist and linguist to make sure that the questionnaires express the same meaning as the original English questionnaires.

The DAS questionnaire is include of four situations about going to the dentist, waiting in the operatory, waiting while the dentist gets his handpeice ready, and waiting for the dentist to get the instruments to clean the teeth. The variety of answers were “relaxed”, “uneasy”, “tense”, “anxious”, “so anxious that I get physically ill”. The answers scored on a scale of 1- 5, and summed to give an overall scale of 20. Low anxiety was considered a score below the 25 percentile (below 7), while moderate anxiety were between the 25 and 75 percentile (between 7-14), high anxiety was scored above the 75 percent (above 15). The DFS has a 20 question form, with various steps on the dental experience like make an appointment, visiting the dentist enter and feeling the drill in your mouth. The answers vary from 'not at all fearful' (20) to 'very much afraid' (100). Low fears were measured below the 25 percentile (below 33), moderate fear between the 25 and the 75 percentile (34-58), and high fear above the 75 percentile (above 59).

We have done pre-tested questionnaires to ensure the understanding of the questionnaire by student, the effortlessness of answering the questions and the time needed to fill out the questionnaire. We visited each school only once, and all students present in their classes that day were included in the study. The field work was carried out during Feb-2006-Jun-2006.

Statistical Analysis

Data were entered using the Epi Info computer program after which was transferred to SPSS, version 13, program for analyses were performed by using Pearson’s test to find the correlation between anxiety and fear, and the Chi-Square test was used to find the relationship between anxiety and fear with time-lapse since last visit and treatment at last visit.

Ethical Aspects

The study was permitted by the Ethics in Research Committee of Qazvin University of Medical Sciences**.**

Results

A total of 780 patients (465 girls and 315 boys) aged 15-16 years were study. The respondents were 91%. The mean age of the adolescents in the sample was 16 years (SD= 1.64), with an age range of 15-16 years. Fourteen point three percent of the students presented low anxiety, 49.3% moderate anxiety, and 36.4% of reported high anxiety (Table 1). A low fear was reported by 16.2% of the students, moderate fear by 55.4%, and 28.4% of the students reported high fear (Table 1). There were a high positive association between anxiety and fear (r=0.695). Amazingly, only 62 (8%) of the students had never visited the dentist before.

According to our respondents 8% reported low anxiety, 35.5% moderate anxiety, and 56.5% high anxiety. In regards to fear,11.2% reported low fear,66.1% moderate fear, and 22.6% high fear (Table 2) Slightly over half of the students,406 (52%) had been visit the dentist within the previous six months to one year, of these 17.2% low anxiety,53.4% moderate anxiety, and 29.4% reported high anxiety. In regards to fear, 21.4% low fear, 52.2% moderate fear, and 23.9% reported high fear (Table 2). Only 148 (19%) of the students had been to the dentist within the previous 1-2 years, of these 10.1% reported low anxiety, 47.3% moderate anxiety, and 42.8% reported high anxiety. In regards to fear 16% reported low fear, 55.4% moderate fear, and 28.6% high fear (Table 2). Approximately, 164 (21%) of the adolescents had not been to the dentist in over two years. Of these 13.4% reported low anxiety, 45.7% moderate anxiety, and 40.9% reported high anxiety. In regards to fear, 5% reported low fear, 53% moderate fear, and 42% high fear (Table 2).

Even though there was a significant difference between anxiety and the time fall since the last visit (P=0.0003), there significant differences in fear levels p (0.00002). Different specific dental treatments appeared to obtain variable levels of anxiety and fear (Table 3). Results show that there are no significant differences in anxiety and fear levels among adolescents subjected to different treatment procedures at their last dental visit (p=0.081

and p=0.17, respectively). The highest reported anxiety and fear levels were among 15 years olds who had an extraction at their last dental visit (46.2% and 29.8%). Based in our finding the lowest anxieties were in orthodontics with 10% and fear was in extraction with 11.3%. And highest in anxiety was in extraction with 46.2% and fear in orthodontics with 31.4% (Table 3).

Discussion

Dental fear is a worldwide occurrence of treatment of children. It has been recognized as a source of serious health problems and it may persevere into adolescence, which may lead to an avoidance of seeking dental care or disruptive behavior during treatment (18).Proximately 25% of patients avoid visits and treatments, and approximately 10% reach phobic levels of anxiety. It has various endogenous and exogenous causes (19).

The problem is most important for several reasons: (a) avoidance causes worse oral health and quality of life; (b) high levels of anxiety and phobia may impinge on the dentist/patient relationship, may prevent proper dental treatment, and be a cause of intraoperative

complications; and (c) the sympathetic response to stress caused by anxiety may yield harmful reactions, such as vasovagal syncope, hypertension, tachycardia, and cardiovascular accidents. The latter is highest importance in patients with increased risk (namely ASA class P2 and higher), where the diagnosis and treatment of dental anxiety becomes necessary for patient's safety (20).

*A possib*le bias was introduced by the fact that only students were questioned. Those students who may not have any experience of visiting or having problem with their teeth were interviewed. The psychosocial impact of dental anxiety and fear is well-documented (21). This survey was performing to test and explain the possible factors that may affect dental anxiety of Iranian population. And the relationship between anxiety and fear. However, the relationship between anxiety and fear may be due to variable use of words by patients and dentists are highly positive (21).

Our study found higher reports of fear and anxiety in Iranian girls than boys. The girls showed 21.9% higher anxiety than their counterpart in Edinburgh, UK (22). They also showed 8.9% higher fear than Brazilian and 4.2- 18% higher fear than Singaporean young adults (15). According to a random sample research of 3000 UK residents, the interaction of dental anxiety, dental health and socioeconomic status and found that people with high rates of dental anxiety were twice as possible to be among the group with the poorest (22). This might be due to the best addition of females in this study chosen because schools are separated by gender at age 6 in the Iran. Studies have shown worldwide that females be likely to report higher percentages of anxiety and fear (22).

These possible observations could be due to real differences in anxiety levels between genders, and greater readiness among females to acknowledge feelings of anxiety to possibly both acting combination factors. (21). an additional factor may be that younger people have been shown to be more anxious than older people (16). The significantly higher percentages were reports in the high anxiety among adolescents' students who had never been to the dentist. On the other hand, the lowest levels of fear were reported by adolescents who had never been to the dentist. This confirms the difference between anxiety and fear. Even though students who had never been to the dentist may not really fear the dentist, they might have an uneasiness regarding their dental visit.

Anxiety and fear was found to be significantly higher among adolescents who had dental extraction at their last dental visit (40% and 33.5%). Invasive procedures for instance an extraction may cause trauma to the adolescent thereby creating a recurring fear of the dentist. Procedures that obtain high fear should be avoided by the prevention of their incidence. This can be achieved by oral hygiene education, motivation and instruction.

Low levels of fear were reported among students who had never been to the dentist. This could be because these adolescents at that time had no defined concept of dental treatment, and do not assume dental treatment to be fearful. These groups of students need continued positive motivation and dentist patient relationship. This may be reinforced by a non-threatening process such as an oral prophylaxis, which elicited the lowest levels of anxiety and fear (25.5% and 34% respectively). It is important to educate and motivate before these patients at this stage of life. As most studies reported dental fear beginning at age 15, it seems likely that they had encountered a

bad experience at this time due perhaps to their never having visited the dentist as a child before, and were subjected to a traumatic experience at their first encounter with dental treatment at this late age of 15 years.

Our study faces the limitation of smaller boy student than girl population, and further studies are needed to address the dental anxiety levels in different and more populations, which will help dental care providers to better manage their patients.

Conclusion

Our information show the dependability of the Iranian version and the data obtained in this study provided that:

1. There are high prevalence of fear and anxiety among female in regarding clinical dental treatments.

2. Invasive procedures should be avoided until the trusts are developed between doctor/patient understanding.

3. Females student have never been to the dentist do not appear to have preset ideas of fear of dental treatment.

4. Irregular fear and anxiety associated with dental care procedures in these young students may reduce the number of fearful and anxious in future.

Acknowledgements

The authors would like to express thanks to Dr Parvez Asadi, Dr Farhad Shamloo for their cooperation and also the school staff, the students whose interest and willing co- operation this study would not have been possible.

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Table 1: Number and percentage of students reporting anxiety and fear

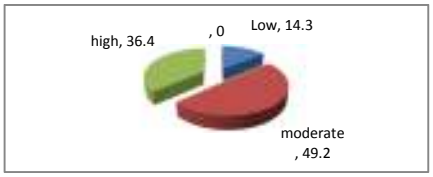
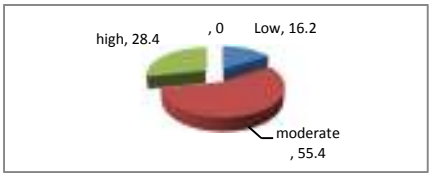
Anxiety			Fear		
Low	Moderate	High	Low	Moderate	High
112	384	284	126	432	222
14.3%	49.2%	36.4%	16.2%	55.4%	28.4%
					

Table 2: Number & percentage of anxious and fearful students according to last dental visit.

Last dental visit	Anxiety			Fear		
	Low	Moderate	High	Low	Moderate	High
Never	5	22	35	7	41	14
	8%	35.5%	56.5%	11.2%	66.1%	22.6%
6m-1y	70	217	119	87	222	97
	17.2%	53.4%	29.4%	21.4%	52.2%	23.9%
1-2 year	15	70	63	24	82	42
	10.1%	47.3%	42.6%	16%	55.4%	28.6%
>2year	22	75	67	8	87	69
	13.4%	45.7%	40.9%	5%	53%	42%

Table 3: Number & percentage of anxious and fearful students according to the last dental treatment.

	Anxiety			Fear		
Dental last treatment	Low	Moderate	High	Low	Moderate	High
Checkup	20	70	35	21	78	26
	16%	56%	28%	16.8%	62.4%	20.8%
Filling	16	49	36	20	60	21
	15.8%	49%	35.2%	19.8%	59.4%	20.8%
Endo	35	142	96	39	160	74
	12.8%	52%	35.2%	14.3%	58.6%	27.1%
Prophyl.	11	21	15	13	28	6
	24%	45%	31%	27.6%	59.5%	12.9%
Ortho	7	31	32	13	35	22
	10%	44%	46%	18.6%	50%	31.4%
Extraction	18	58	65	16	83	42
	12.7%	41.1%	46.2%	11.3%	58.9%	29.8%
Other	5	13	5	4	12	7
	21.7%	56.5%	21.8%	17.4%	52.2%	30.4%