
A review on gender differences in dental anxiety

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Abstract: The aim of this study is to review the gender differences in dental anxiety and the role a dentist plays in it, to assess those patients and treat them according and to make certain exceptions with patients with dental anxiety. Dental anxiety is a major hurdle when it comes to seeking advice in oral and dental problems. Dental pain and dental anxiety are the most common phobias among people. Pain is defined as an unpleasant sensation associated with sensory and emotional stimuli. Anxiety is due to emotion aroused by danger and pain because of distress. Toothache is one of the major causes which brings the patient to a dentist. Dental fear and anxiety are the two major factors that prevent patients from visiting a dentist. There is a common observation where patients only visit a dentist when there is severe Pain otherwise patients with dental anxiety don't go to a dentist. Anxious patients suffer from inferior oral health than non - anxious patients. A review with recent information about gender differences in dental anxiety and its impact on dentists and patients from various search engines like medline, google scholar, bioRxiv, pubmed, chem RXIV, MESH etc. The recent articles discussed in this review helps in gaining knowledge about the gender differences in dental anxiety, how much the influence of anxiety has on patients who need dental treatment. Female patients wish to seek treatment and also have a higher level of anxiety whereas male patients avoid dental treatment because they are frightened about pain, their negative experience and in some cases, worried about the expense of a dental treatment. And in other cases, people do not think dental treatment is necessary at all and thus leading to improper oral hygiene.

Keywords: Dental Anxiety, Dental pain, Gender differences, past experience.

INTRODUCTION

Dental anxiety or anxiety for dental treatment is a major hurdle when it comes to seeking early advice [1] There is a common observation where anxious patients defer their visit to dental practices till the time when it is absolutely necessary to obtain dental treatment [2]. Anxious patients suffer inferior oral health compared to non-anxious patients [3]. Several studies regarding patients' behaviour towards dental treatment is focused on gender differences on the cognitive process of oral health associated with dental knowledge. The experience of pain reported in dental treatments may differ between the two sexes, with women tending to remember the pain more vividly after the completion of the appointment. This may help to explain increased anxiety following dental experiences. Most studies concluded that females bear a higher burden of dental caries compared to males [4]. The most Common fear associated with dental anxiety is the use of instruments such as needles and drills which produced Vibration and noise of which they experienced discomfort [5]. Assessing and Alleviating dental fear and dental anxiety is important as it entrances good oral health. Patients associated with dental anxiety are difficult to treat due to various reasons[6]. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar *et al.*, 2018; Rajeshkumar *et al.*, 2018, 2019; Vishnu Prasad *et al.*, 2018; Wahab *et al.*, 2018; Dua *et al.*, 2019; Duraisamy *et al.*, 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and

Ezhilarasan, 2019; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi *et al.*, 2020; Samuel, Acharya and Rao, 2020)
They shall be discussed below.

OBJECTIVES:

The objectives of this paper are:

- * To do a literature review about gender differences and dental anxiety in dentistry.
- * To summarize management Strategies for the treatment of those patients in dental hospitals.

MATERIALS AND METHODS:

For this review, the articles were selected and referred from search engines like pubmed , google scholar, ChemRXIV, bioRxIV .The articles all of them referred to diabetes, it's complications and considerations for dental management. All these articles were meta-analysis, clinical trials and case-control studies.

Articles selected for this review are selected based on this 5 step process

1. Identification of clear objectives.
2. Identification of relevant articles
3. Selection of articles
4. Data extraction and charting
5. Analysis and report

Inclusion criteria:

- Dental anxiety
- Gender differences
- Oral health behaviour
- Health habits
- Assessment and treatment

Exclusion criteria:

- Genetic contributions
- Systemic conditions

The data collected was analysed for its quality and was sorted as strong, moderate and weak articles. Collected data are analysed and concluded. Thus quality analysis was done.

Previously our team had conducted numerous clinical trials [22,23,24,25,26,27,28,29] and lab studies [30,31,32,33] and in-vitro studies [34,35,36] over the past 5 years. The idea for this review stemmed from the current interest in our community.

DISCUSSION

GENDER DIFFERENCES

Several studies have been conducted all over the world in order to investigate the possible gender differences in oral health status and behaviour in populations of various age groups and characteristics. Most of these studies concluded that Females have a higher prevalence of caries than males [7]. Higher Caries prevalence in females is commonly hence, due to earlier tooth eruption in women, longer exposure of teeth to the cariogenic coral environment; easier access to food Supplies by women and frequent snacking during food preparation; vomiting, neglected Oral hygiene and nutritional changes during pregnancy ; social factors Women's social Mole in family like ritual fasting [8. Recently evidence has been provided to demonstrate that higher caries rates in women may also be explained by differences in Salivary composition and flow rate, hormonal fluctuations during puberty, menstruation and pregnancy and genetic variations [9] . On the other chand, it is generally accepted that with the exception of puberty and pregnancy , females exhibit lower periodontal diseases prevalence and severity than males [10]. The difference is mainly attributed to better oral health behaviour and hygiene status among females while hormonal and other physiological and behavioural differences between the two genders may also Contribute to the high risk for periodontal diseases in males than in females [11]. Gender differences relating to dental anxiety may be not only numerical but there may also be qualitative differences. Dental anxiety was found to be more in females in the general population and similarly in a group of university students [12]

DENTAL ANXIETY:

Dental fear, anxiety and phobia have consistently been reported as widespread Problems that persist despite the technological advances that have made dentistry less painful and less comfortable. It is well documented that dental fear has a significant impact on dental care utilization behaviours [13]. The consequences of dental fear in oral health outcomes have been reported in many studies. In general dental fear is associated with poor oral health status, poorer oral health related quality of life and compromised psycho social health such as lower self

esteem and lower morale [14] Dentally anxious patients take longer to trust and often fail to keep their appointments mid elder women severely are fearful patients as well as patients not seeking dental care before have significant poorer oral status [15] Furthermore, acute conditions and treatments make both patient and dentist subject to more stress and significantly less satisfied with the dental care performed [16]. Reports also suggest that people with poorest oral health related quality of life were most commonly found among those with high levels of dental anxiety. Schuller [17] indicated that compared with persons with low dental fear, persons with high dental fear had a higher number of decayed tooth seal, surfaces decayed teeth and missing teeth but a lower number of filled and sound teeth. Haggling [18] noted that high dental anxiety was associated with a high number of missing teeth. High dental fear affects approximately one in six adults and this prevalence figure is similar to that of many countries around the world. Among some sub-groups of the population, such as middle-aged women, the prevalence of high dental fear may be as high as one in three individuals. The impact that this relatively high level of dental fear in the community can have is appreciable. First, people with high dental fear are much more likely to delay or avoid dental visiting and a number of fearful people regularly cancel or fail to show for appointments. Second, people with high dental fear, children and adults, may be difficult to treat, require more time, and present with behavioural problems which can result in a stressful and unpleasant experience for both the patient and treating dental practitioner. Research indicates that trying to manage patients with dental fear is a source of considerable stress for many dentists. Finally, dentally anxious individuals, because of their avoidant behaviours, often have poorer dental health. In particular, those people who delay dental visiting for a prolonged time, even if experiencing considerable pain, might have extensive problems that require more complex and complicated treatment. Dental anxiety is a subjective state of feeling that is often associated with a feeling of danger. Gender differences in dental care utilization and dental fear have been frequently reported in literature. An interesting and consistent finding from the previous studies is that females generally have more dental visits, are more likely to be regular dental attenders and have better compliance with dental appointments and better oral hygiene practices than men [19] despite the fact that dental fear is more prevalent and severe among females. It was suggested that gender difference in dental care utilization and oral health might be affected by factors other than gender differences in dental fear [20]. Many researchers have reported that women have regular dental visiting patterns and engage in more dental care seeking behaviour than men, although the prevalence and level of severity of dental fear are higher among women. Skaret [21] noted that the predictors of dental care might be different for women and men; with men's behaviour being more likely to be affected by their attitudes towards dental care and oral health. The results in the current paper indicate that there is a significant difference in dental fear and anxiety and is found to be slightly greater in females than in males. The experience of pain reported in dental treatments may differ between the two sexes, with women tending to remember the pain more vividly after the completion of the appointment [22]. This may help to explain increased anxiety following dental experience.

IDENTIFICATION AND ASSESSMENT OF PATIENTS WITH DENTAL ANXIETY:

To work successfully with a fearful dental patient, a dental practitioner must first identify that an individual is scared or nervous, and then adopt an appropriate treatment approach tailored to that patient's concerns. Indeed, most dental practitioners will attempt to elicit information from their patients about possible dental concerns, but the approach can be highly variable between dentists and from one patient to the next. However, and despite longstanding recommendations for the use of structured dental fear questionnaires during clinical assessment, the use of dental anxiety measures in general clinical practice is believed to be limited. For example, a study investigating the practices of UK practitioners with a declared special interest in treating patients with dental anxiety, found that only 20% used adult dental anxiety assessment questionnaires. This is surprising as managing dental anxiety requires a tailored treatment approach which firstly requires the dental practitioner to be efficient at detecting the presence of anxiety. [23] While the identification of a fearful patient can happen at various points, the earlier a dental practitioner can determine that a patient is fearful, the greater the likelihood of success in working with the patient.

Eliciting a patient's anxiety and fear towards dental treatment by dental practitioners will determine which treatment approaches to adopt and is a fundamental first step in managing patient anxiety. As stated above, it is recommended that a structured, psychometrically valid scale be used in addition to the dental practitioner's questions for the patient. There are several instruments which are freely available for this purpose, usable for both adults and children. There is evidence that using dental fear scales does not raise anxiety in anxious or non-anxious patients. [19] Further, and even if a decision is made to not formally assess dental anxiety, it is possible that the mere act of asking fearful dental patients to report their level of dental fear prior to treatment may reduce the patients' level of state anxiety.

It is generally considered to be the case that when a patient exhibits only mild anxiety and they present without other complications they can be helped by establishing a trusting relationship and by providing realistic information about the dental treatment. Relatively simple anxiety reduction strategies can also be employed, such as providing the patient with a sense of control and predictability in relation to treatment. Our institution is

passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Mathew *et al.*, 2020)

CONCLUSION

Through this study ,it is revealed that it is possible to identify the fearful patients who need to be treated in ways to minimise the risk of aggravation of dental anxiety. The fear and anxiety of an individual Could affect the patient- dentist relationship and the dental treatment plan. Therefore before starting the dental treatment, patients' anxiety and fear levels should be assessed and a proper counselling should be given. Hence appropriate measures can be taken to overcome this obstacle in future.

ACKNOWLEDGEMENT

I am sincerely thankful to Saveetha Institute of Medical and Technical Sciences for providing me the opportunity to write a research paper on the above topic.

I am also thankful to Dr.Venkatesh Kommi for guiding me in every stage of this research paper. Without his support, it would've been extremely difficult for me to prepare the paper so meaningful and interesting.

I am also thankful to Dr. KeerthiSasanka Lakkoji and Dr. Devaraj Ezhilarasan and who have helped me during this course of research paper in several ways.

Conflict of interest

Nil

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A STUDY ON GENDER DIFFERENCES IN DENTAL ANXIETY

Student: Madhumithaa
Guide: Dr. Shashanth

Tools used: health evidences- quality assessment tools for review articles

S NO.	AUTHOR	YEAR	LEVEL	QUALITY OF RESEARCH
1.	Heft MW et al	2007	Level 2	Moderate
2.	Settineri S et al	2005	Level 3	Strong
3.	Imran farooq et al	2015	Level 2	Moderate
4.	T katenac et al	2018	Level 1	Weak
5.	Saqueeb Ali et al	2014	Level 2	Moderate
6.	Rehab Allam et al	2018	Level 2	Moderate
7.	S Natarajan et al	2009	Level 3	Strong
8.	S Singh et al	2008	Level 2	Moderate
9.	Kiruthika Patturaja et al	2016	Level 3	Strong
10.	A Liddell et al	2006	Level 2	Moderate
11.	Benjamin Peretz et al	2002	Level 1	Weak
12.	Red Moore et al	1993	Level 1	Weak
13.	Dr. Ayala Stabholz et al	2011	Level 2	Moderate
14.	Locker D et al	2001	Level 1	Weak
15.	Chhabbra et al	2012	Level 2	Moderate
16.	Arne balling et al	2009	Level 2	Moderate
17.	Gadbury Amycot et al	2000	Level 2	Moderate
18.	Elif Abala Oktay et al	2009	Level 2	Moderate
19.	Joseph M Holtzman et al	2008	Level 3	Strong
20.	James B Hittner et al	2009	Level 1	Weak