

Comparison of the Level of Dental Fear and Anxiety among Patients in a Private Dental Institute and in a Rural Health Centre- A Questionnaire Survey

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Abstract: Dental treatment is perceived by most patients as painful and invasive. Several scales have been developed to measure dental fear in the clinic. Armfield developed the Index of Dental Anxiety and Fear (IDAF-4C+). The aim of the study was to compare the level of dental fear and anxiety among patients in a Private Dental Institution and in a Rural Health Centre using IDAF-4C+ Questionnaire. It has three modules: Base module, Phobia module and Stimulus module. Simple random sampling methodology was used to select 200 patients each at dental OPD of a private dental institution and a rural health centre. The participants were guided to fill the questionnaire. Results reported that level of dental fear and anxiety were more among patients in rural health centre. Dental practitioners can anticipate the level of dental fear and anxiety in patients and provides opportunity to improve their skills in identifying and managing fearful individuals.

Keywords: Dental fear, Dental anxiety, Questionnaire survey, primary health centre, private institution

What we already know:

- Fear about dental treatment is common among all population across the world
- Fear level is determined using various tools and Index of Dental Anxiety and Fear (IDAF-4C+) is one such validated tool used to measure dental fear and anxiety
- Dental fear and anxiety prevent general population from visiting the dentist which affects early diagnosis and prevention of oral/dental diseases.

What this article adds:

- Rural residents have a higher level of dental fear than urban residents
- This data helps dentists to identify and manage fearful individuals in both rural and urban settings

- Data regarding dental fear is helpful in formulating public health policies, conducting awareness camps and treatment camps at these settings.

Introduction:

Although the latest techniques and equipments have made dental experience more patient friendly, the fear of dental treatment and the resultant avoidance remains high ¹. The skills of the dentists and the use of other measures to control pain are very important to reduce dental fear. In spite of all these measures, the fear of dental treatment continues to pose significant threat to both the dentist and the patient ². There is also little evidence that Indian dentists systematically screen for dental fear ³. Several scales have been developed in the past to measure dental fear and anxiety. The drawback of most available scales is usually poor constructed with poor validity and theoretical background ⁴. Armfield in 2010 ⁴ developed a new index known as the Index of Dental Anxiety and Fear which overcomes the problems with other scales. Hence this scale was chosen to measure Dental fear and anxiety in the present study. The full Index of Dental Anxiety and Fear (IDAF-4C) has three modules: Base module (8 items), Phobia module (5 items) and Stimulus module (10 items) ⁴. In particular, the 8-item base module that measures dental anxiety and fear IDAF-4C may be relevant to clinicians who wish to use a general screening questionnaire for dental fear and anxiety. The Index of Dental Anxiety and Fear (IDAF-4C) is a theoretically derived test developed to allow clinicians and researchers to measure a person's level of dental fear and to examine associations between dental avoidance and fear of pain. This questionnaire measures all 4 components (Emotional, Behavioural, Physiological and Cognitive) of Dental fear ⁵. The aim of the current study was to compare the level of dental fear and anxiety among the patients in a Private Dental College and in a Rural Health Centre using the IDAF-4C+ Questionnaire.

Materials and Methods:

A cross-sectional study was done to compare the level of dental fear and anxiety among patients in a Private Dental Institute and in a Rural Health Centre. Simple random sampling methodology was used to select 200 subjects each from the dental out-patient department of Sri Ramachandra Dental College and Vayalanallur Rural Health Centre. Selection criteria was such that the participants should be aged between 20 years to 50 years of age, should undergo some form of dental treatment and be willing to participate in the survey. Ethical approval was obtained from the institutional ethical board. Participation was completely voluntary and a written informed consent was obtained before the questionnaire was given. The selected participants were given the questionnaire after the initial examination and diagnosis but before the treatment was began. That is during the waiting period for the treatment to be rendered. The participants were guided by two nurses at both the centres to fill the IDAF-4C+ Questionnaire. The collected data were statistically analysed.

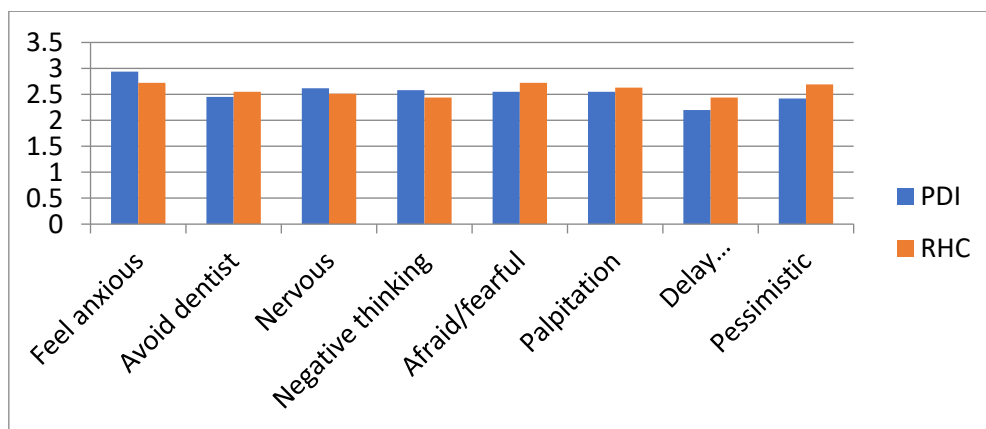
The aim and objectives of the study was to assess the level of Dental fear and Anxiety among the outpatients in a private dental institution and in a Rural Health centre, to compare the difference in dental fear among patients of different age and sex, to establish whether the level of dental fear differs among patients undergoing different types of dental treatment and to assess whether the number of dental visits has an influence on dental fear and anxiety levels.

Statistical analysis: Statistical analysis was done using SPSS 16 (IBM). The descriptive statistics were expressed in terms of frequency, percentage, mean and standard deviation. Mann-Whitney U test and Kruskal Walli's test were used in this study. P value ≤ 0.05 was considered to be statistically significant.

Results:

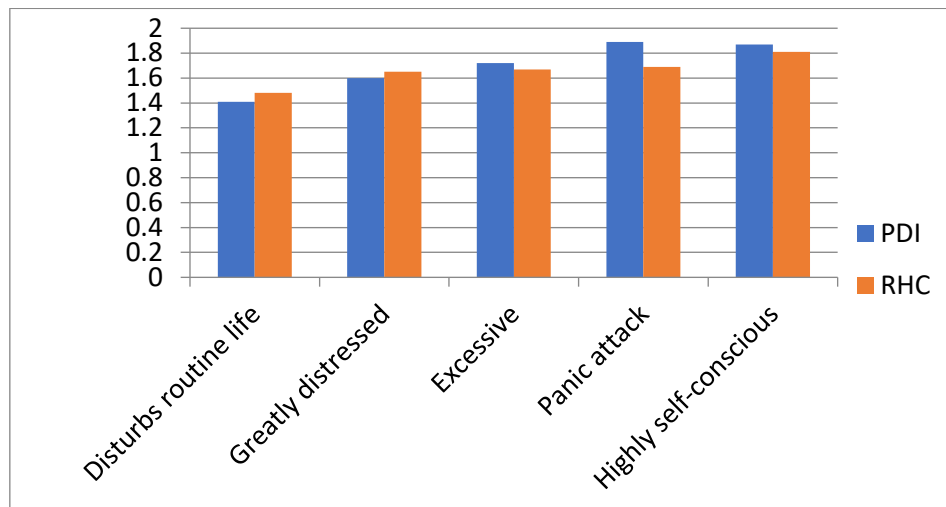
On comparing the base module scores between a private institution and a rural health centre, it was found that feeling anxious before visiting dentist and getting nervous about the upcoming dental visit is more in a rural health centre compared to that of a private institution. On the other hand, feeling pessimistic and feeling fearful while visiting a dentist is more in a private institution when compared to a rural health centre (Figure 1).

Figure 1: Base module scores



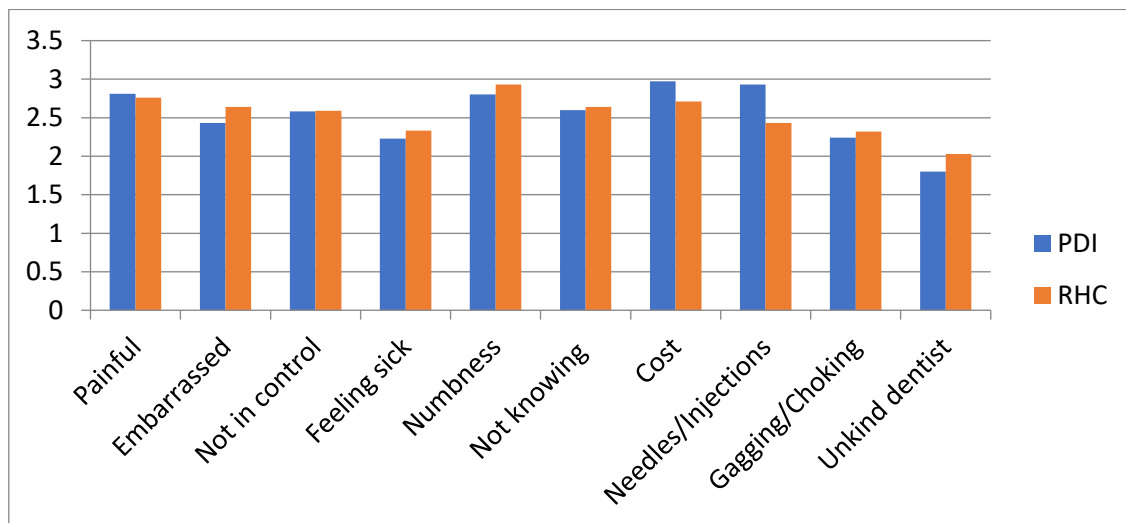
On comparing the phobia module scores, it was evident that fear of having a panic attack during dental treatment and concern about being watched is more in a private institution than that of a rural health centre (Figure 2).

Figure 2: Phobia Module scores



On comparing stimulus module scores, it was found that fear of getting numbness after an injection and fear of getting embarrassed is more in rural population, but the fear about the cost of the dental treatment is more in a private institution (Figure 3).

Figure 3: Stimulus Module scores

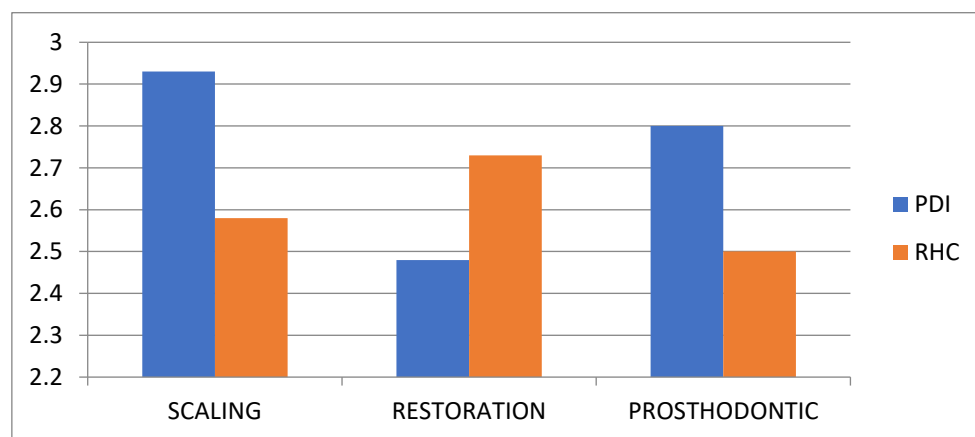


Overall results related to delay in making appointments, feeling embarrassed and being pessimistic were statistically significant at the rural health centre, while fear about the cost of the dental treatment, fear of getting an injection and fear of having a panic attack during treatment procedure were statistically significant at the private dental institution. This result was statistically highly significant.

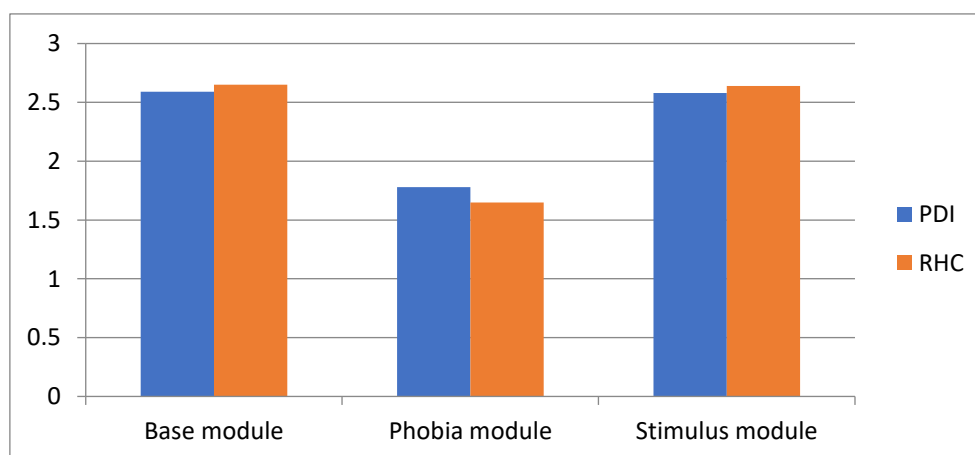
Comparing the IDAF score with age signifies that, as age increases the level of dental fear and anxiety also increases. IDAF score based on gender shows that males in a private institution are more anxious than females but on the other hand females are more anxious in a rural health centre. More than 80% of females in both private and

rural set up are feeling anxious about going to a dentist and are also afraid of the numbness caused by injections, with statistically significant results. IDAF score based on different treatment rendered or planned showed that patients at private hospital reported more level of fear for scaling and prosthodontic treatment, while patients at rural health centre reported more level of fear for undergoing restorations (Supplemental Figure number 4). Influence of number of visits on dental fear shows that, as the number of visit increases, the fear decreases. Overall comparison among all modules revealed statistically significant results for the base and stimulus modules (Supplemental Figure number 5).

Supplementary Figure number 4: Comparison of IDAF scores with treatment planned



Supplementary Figure number 5: Comparison of IDAF score for each module



Discussion:

Despite advances in both pain control and patient management, dental fear and anxiety still remains a serious issue for the patient as well as the dental clinician. Prevalence of fear vary in pattern across different culture and population.

A systematic review⁶ reported that, females have a greater prevalence of fear than males, which is the same in our study. This may be due to the common characteristics of women throughout the world, making them more open to express fear than male.

Ter Horst and de Wit⁷ reviewed the behavioural pattern in dentistry and documented that younger people are generally found more anxious than older people. However, conflicting results were found in the present study that as age increases, the fear also increases, which was similar to the study conducted by Carlsson et al⁸. The prevalence of dental anxiety in adult population was calculated and was found that younger adults have least fear among any adult group. Similar results were found by Thomson WM, Stewart J F et al⁹ who reported that prevalence of dental fear among Australian adults aged 35-44 yrs was 19.7% compared to 15.1% among younger adults aged 18-34 yrs.

Hallstrom T, Halling A¹⁰ reported that lower socio- economic backgrounds have higher fear. Moore et al also found that both low income and low education to be a risk factor for moderate dental anxiety level. This study showed that non-working population had more dental fear compared to that of working population and this result was statistically significant. Similar results were obtained by J M Armfield, A J Spencer et al¹¹ which showed highest prevalence of dental fear was found among those who are unemployed while low prevalence was found for people with full time employment and students and people who were retired had low prevalence of dental fear.

It was found that the prevalence of dental fear among people who visited dentist 12 months ago was 14.2% compared to 31% in people who visited dentist more than 10 years ago⁴. People who made their last dental visit to a clinic operated by health insurance or school dental services had lowest prevalence of dental fear, in contrast to people who visited private clinic showing highest prevalence, which may be due to the fear of cost of the treatment. Even in the current study people were more scared about the cost of the treatment in a private institution than in a rural set up. In the rural health centre treatment was done free of cost.

Conclusion:

Dental anxiety and fear pose a significant problem in patient management. Dental fear is such a pervasive barrier to oral health so it is important that a dentist and allied staff must anticipate and are trained to identify anxious patients. More often fearful patients tend to cancel the appointment or delay scheduled recalls. They must be identified by verbal or body languages.

Recommendations:

Such studies provide opportunity for a dentist to explore patient's issues and concerns and to determine possible treatment approaches. Patient must be explained about the procedures before the treatment. Extra caution must be taken when administering local anaesthesia to a female patient. The patient must be clearly explained about the various treatment options and their cost of the same. All necessary treatment must be

completed in a single visit and steps must be taken to minimize the appointments. Dentist must improve their communication skills to make the patients more comfortable and gain confidence on the dentist. Efforts need to be made to develop a population norm to calculate the dental fear and anxiety.

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