

Anxiolytic Intervention Preference of Dental Practitioners in the Savannah, Chatham County Area: A Pilot Study

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Introduction

Dental anxiety presents a challenge that dental practitioners often face in their daily practice. Hainsworth et al has shown that approximately 31% of the adult population may suffer from some degree of dental anxiety.¹ Negative oral health consequences tend to arise in patients with dental anxiety. Patients who suffer from dental anxiety are nearly 5 times more likely to need immediate treatment to relieve oral-related pain or infection, and they tend to have fewer restored, and more missing, teeth.^{2,3} Another significant factor associated with increased levels of dental anxiety is dental decay. Patients who have dental anxiety show significantly more carious lesions which are more likely to be extensive, painful and expensive to restore than less anxious patients.^{3,4} A contributing factor to this phenomenon may be that patients who experience dental anxiety are more likely to stop or delay receiving dental treatment than those with less anxiety. Dental anxiety may also contribute to difficult patient management by dental practitioners.^{3,5} Use of methods that may reduce dental anxiety may prove beneficial to both the patient and the dental provider. The purpose and focus of this study was to determine the anxiolytic interventions (AI) preferred and utilized by dental professionals in the Savannah, Georgia area.

Abstract

Purpose: The purpose of this study was to identify preferred anxiolytic interventions (AI) employed by dental practitioners in the Savannah, Chatham County area.

Methods: A questionnaire was developed to test dental practitioner preferences of 11 AIs shown to reduce anxiety in dental patients. The sample consisted of dental hygienists, dental assistants and dentists, randomly selected via the telephone book. A total of 305 surveys were distributed. Prior to voluntary completion of the questionnaire, respondents received oral and written instructions regarding the purpose of the study.

Results: A 43% return rate (n=131) was achieved. Results from analysis with the Median and Kruskal–Wallis tests suggested that the most commonly used AI was ambient background music (n=109, 83.2%). The second most commonly used AI was having literature available for patients to read (n=99, 75.6%), followed by providing a way for the patient to inform their provider of their anxiety (n=88, 67.2%), the use of pharmaceutical agents (n=79, 60.3%) and decorating the walls (n=68, 51.9%).

Conclusion: It is important for dental professionals to employ interventions and management techniques that may reduce dental anxiety.

Keywords: Anxiolytic intervention, dental anxiety, dental stress

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Review of the Literature

Sources of Anxiety

Appreciation of the sources of patient dental anxiety may lead to the development of strategies and/or interventions that reduce anxiety. Patients' anxieties often arise from trypanophobia (fear of injections and needles), pain and sounds from dental drills and hand pieces. Moreover, the odor of tooth debris from the dental hand piece may also trigger anxiety.⁶ Patients have also reported that they experience pseudodysphagia (fear of choking) during dental treatment.⁶ Other

common sources of dental anxiety are memories of pain previously experienced during one's own dental visit, knowledge of another person's negative dental experience or locus of control. Researchers have found that dental hygiene treatment is strongly correlated with pain perception.^{7,8} According to de Jongh and Stouthard, merely the expectation of pain tends to increase patient anxiety levels during oral hygiene procedures.⁷ Investigators have noted a positive correlation between the level of dental anxiety and the level of dental pain fear.⁹

Additionally, the lack of explanation about the treatment plan may cause the patient to feel anxiety about the proposed procedures.⁵

In a randomized, controlled study of 119 patients, Dailey et al found patient anxiety levels decreased significantly when the dentist was made aware of the patient's anxiety prior to dental treatment.¹⁰ Having the anxious patient complete a survey, such as the Dental Anxiety Scale or Dental Fear Survey by which fear levels can be assessed, may be helpful to the dental team in reducing patient discomfort.¹¹ In fact, Eitner et al revealed that when anxious patients are referred to an office where the staff does not utilize anxiety reducing methods, the anxiety is renewed.⁴ Locker, et al reported that initial incidences of fear occur during childhood and adolescence for the majority of patients who report dental anxiety.¹² It also has been reported that anxiety levels increase when a dental professional does not seem empathetic, personable or supportive of the patient's fears.^{13,14} Additionally, Levin et al concluded that, during childhood, the patient's regularity of dental visits played a significant role in the development of dental anxiety. If, during childhood, the patient sporadically attended dental visits, then the patient was more likely to become an anxious dental patient. Alternatively, those who visited dental offices on a regular basis tended to have less dental anxiety.^{13,15} Firat et al also detected a positive statistical relationship between dental fear and age – as one ages there is a tendency to be more fearful.¹⁶ Similarly, Kumar et al concluded in a study of 1,235 individuals that older patients experienced significantly higher dental anxiety levels than those who were younger.¹⁷ However, Udoe et al found opposing results, i.e., the Dental Anxiety Scale scores for older individuals were significantly lower.¹⁴ Settineri et al found that gender also plays a role in dental anxiety, as female patients tended

to have higher rates of dental anxiety than male patients due to chair positioning. The researchers reported that the supine position of the chair caused the female patient to have a feeling of lack of air, an absence of muscle tension and being in a subordinate position.⁶ Similarly, Firat et al found that females scored higher on the Dental Fear Scale.¹⁶ Researchers agree that, although men frequently experience genuine dental fear and phobia, women tend to be more likely to have dental anxiety.^{18–21}

Anxiolytic Interventions

As previously noted, studies have been conducted to determine the interventions most effective in reducing anxiety in dental patients. Interventions range from simple environmental changes (i.e. aromatics) to more involved interventions such as relaxation, hypnosis and guided imagery techniques.^{22,23} Bare et al found in their study that patients tend to prefer dentists who are friendly and talkative.⁵ It was found that anxious patients preferred a male dentist (93%) more than a female dentist (73%). Hainsworth et al suggest that the fear of the unknown may underscore a patient's anxiety, so it is recommended that the dentist keep the patient well informed about their treatment¹ and to reassure them that treatment will be completed with minimization of pain or discomfort.^{5,23} A study by Dailey et al found that patients who inform the dentist about their apprehension can significantly reduce anxiety.¹⁰ Eitner et al found that many patients expected they would receive better treatment if their dentist understood their anxiety.⁴

Most dental anxiety is caused by the anticipation of and the use of drills, hand pieces and needles.²⁴ In an effort to avoid use of such instruments, an alternative approach to restoration procedures that may be utilized is the Atraumatic Restoration Treatment (ART) approach.²⁵ This technique uses hand rather

than mechanized instruments for restorative procedures, thereby often eliminating the need for local anesthesia.²⁵

Subtle changes in the dental office environment may also be helpful. Investigators have found that patients prefer pleasant brightly decorated walls and the availability of a large selection of magazines, books, background music and pleasant scents while they await treatment.^{5,13} Moreover, the available reading material should include information packets or leaflets about the services or treatments available. Additional studies have shown that aromatics in the dental environment have the capability to change one's emotional state. Lehrner et al found that aromatics of orange and lavender in the dental office reduced patient anxiety and increased a sense of mood enhancement and calmness.²⁶ Hainsworth et al found that the use of basil, chamomile, cypress, jasmine, juniper, rose and sage scents were beneficial in reducing patient anxiety.¹

According to Buchanan and Coulson, support groups were beneficial for individuals suffering from dental anxiety.²⁷ The growth of the internet has increased the opportunity for people to find help and support for dental health related issues online. The authors claim that support groups give patients the ability to share experiences from the past and discuss their dental fears in an environment that is supportive.²⁷ These groups may not eliminate their participants of their fears in every case, but they can help participants realize that others share their apprehensions about dental procedures, which may improve their coping strategies and bolster their confidence to confront their fears.

According to researchers, relaxation therapies, breathing techniques and biofeedback have proven to be beneficial for the treatment of adults with dental anxiety and/or fear.^{1,28} Through the use of these

techniques, a patient can explore ways to self-cope with their dental anxiety. Patients have successfully used relaxation and breathing techniques because they are easily learned, unobtrusive and quickly utilized in a dental environment.¹ According to Bare and Dundes, a more common method of managing an anxious patient prior to dental

treatment is by the administration of pharmacological agents. Nitrous oxide and other compounds have been known to significantly reduce dental anxiety.⁵

Equipped with the knowledge of previous and ongoing studies regarding AIs, dental practitioners have numerous AI options from which to choose. Results from this literature review suggest that little data exists concerning the use of AIs and, if interventions are used, how often specific AIs are incorporated into dental practices. Therefore, the purpose of this pilot study was to determine the current use of anxiolytics and plans for future use in private dental practices in the Savannah, Georgia area.

Methodology

This descriptive study was conducted in the Savannah, Chatham County area, after Institutional Review Board approval was granted from Armstrong Atlantic State University. A total of 305 surveys were hand delivered to 45 dental offices during the winter of 2008. Using simple random sampling, the dental offices selected for the survey were found in the Yellow Pages telephone book for the Savannah, Georgia area. Each office

representative received a brief verbal introduction to the study and was instructed to make the surveys available to all dental hygienists, dental assistants and dentists for voluntary completion. The office representative also received a plain white envelope in which the completed survey was to be placed, a measure to maintain anonymity. Each office staff was allowed a period of 2 weeks to complete the survey, at which time the survey was collected by the researcher. For this study, AI is operationalized as a method used to reduce dental anxiety.

The Survey

A survey questionnaire was created by the researcher to inquire about dental practitioner preference of 11 interventions that suggest reduction of anxiety in dental patients (Table I). Each intervention was ranked according to a Likert Scale of: (1) unlikely, (2) somewhat likely, (3) neutral, (4) likely, (5) most likely and (6) currently in use.

The survey also asked for participant demographic information, such as role in dental office (e.g., dental assistant, dental hygienist or dentist), gender, ethnicity and age.

These factors were collected to determine if relationships existed among specific interventions. A cover letter accompanied the survey to describe the purpose of the study and to obtain informed consent.

Statistical Analysis

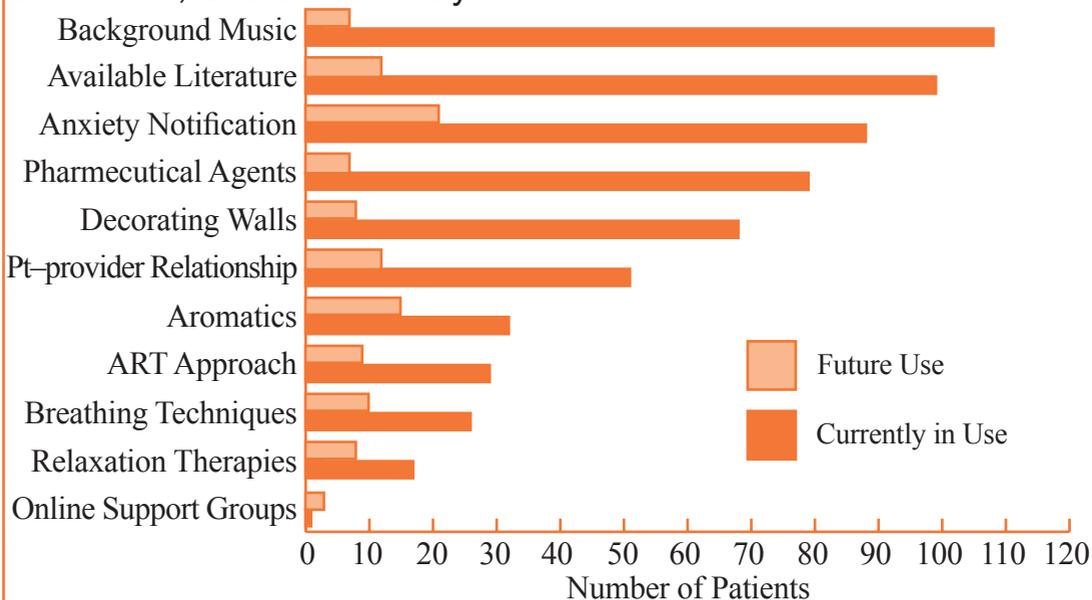
Using the statistical software SPSS 15.0 for Windows, each demographic factor was cross analyzed with each of the 11 AIs. The Kruskal-Wallis test was used to investigate statistically significant differences in the data at the $p=0.05$ level.

Results

The surveys were distributed to 305 potential participants. A total of 131 surveys were returned for a response rate of 43%. Usable surveys totaled 124 (41%). Eighty-three percent of the respondents were female ($n=100$) and approximately 49% were dental hygienists ($n=61$).

Figure 1 displays the current and future uses of AI in the dental offices studied. The most commonly used AI was ambient background music with 83.2% ($n=109$) participants currently incorporating it into their practices. The second

Figure 1: Anxiolytic Preference of Dental Practitioners in the Savannah, Chatam Country Area



most commonly used AI (75.6%) was having available literature such as magazines, books and dental literature for patients to read. The third, fourth and fifth most commonly used AIs were provision of ways for the patient to inform their provider of their anxiety (67.2%), the use of pharmaceutical agents (60.3%) and decorating the walls (51.9%). Projected future use of AI, those interventions dental practices were “most likely” to incorporate, included anxiety notification (n=21), the use of aromatics (n=15), making literature available (n=13) and altering the patient-provider relationship (n=13).

The Kruskal–Wallis Test cross-analysis of the demographic factors and the AIs enabled possible relationships to be recognized. Specifically, statistical analysis of the median tests of each gender with each AI revealed no association between gender and any ranking of AI except the ART approach ($p < 0.001$). Comparison of reported intention to utilize AI techniques by dental office role (i.e., dental assistant, dental hygienist or dentists) resulted in no statistically significant differences. Other than with the ART approach, the participants of each gender appeared to have similar preferences of the AI. Only 20% of male participants (n=25) versus 52% of female participants (n=64) reported a likelihood greater than “neutral” of incorporating the method into their practice. Similarly, no statistically significant differences existed between the participants’ roles in any AI except the ART approach ($p = 0.001$).

Discussion

This study was a pilot test to investigate the current and future use of AI in dental practices. Due to the small sample size and the limited location of the study, the results cannot be generalized to the

rest of the population. However, the study may enhance the body of knowledge regarding the frequency of and types of AIs used in dental offices. The results may also add support to previous studies regarding various AIs in the reduction of dental anxiety.

The study did reveal similar results of previously conducted studies regarding the types of AIs used. Bare and Dundes found that up to 89% of the patients in their sample population reported that music, available literature and decorated walls in a dental office setting were helpful in reducing anxiety.⁵ Likewise, in our study, the same 3 AIs ranked in the top 5 most commonly applied AIs. Additionally, anxiety notification, included in the top AIs in the Bare and Dundes’ study, ranked third overall in our study. De Jongh et al concluded that one of the best AIs for patients with mild dental anxiety is establishing their trust, and that a part of developing this trust is having the practitioner acknowledge the patient’s dental anxiety. In addition to developing patient-provider trust, pharmacological support may also be necessary.²⁹ Incorporation of conscious sedation has proven to be “reliable and safe” and has traditionally been used to help manage dental anxiety.¹ Not surprisingly, the application of pharmacological agents was reported the fourth most commonly used AI in the Chatham county area. Although the results from this study showed AI preference of practitioners rather than AI preferences of patients, it seems that the preferences are similar for both patient and practitioner. Similarities in the results of provider AI preferences and patient AI preferences from other studies were also consistent with the least preferred AI online support groups. Although this manner may be easy and effective, this result is not surprising, considering the idea of online sup-

port groups is still relatively new.²⁷ “To date, there has been relatively little attention given to understanding the online experiences of dentally anxious or phobic patients.”²⁷ Therefore, it is recommended further studies pursue this area of research. Excluding the ART approach, results indicated that the respondents in this study appeared to have similar preferences for AI use as were reported in previous studies. Since the majority of the dentists were male and nearly all dental assistants and dental hygienists were female, one may explain similarities in association of roles in the dental office and gender with the ART approach. This study raised perhaps as many questions as were answered. Therefore, additional research is warranted in this type of patient management.

Conclusion

Dental anxiety represents an important issue among the adult population. Study results, as well as anecdotal findings, reveal that there are detrimental effects that dental anxieties can have on a person’s oral health. Therefore, it is important for dental professionals to employ interventions and management techniques that may reduce dental anxiety. Further research may suggest broader applications.

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