



Knowledge, Attitude and Practice of Aromatherapy in Management of Dental Anxiety in Pediatric Patients among Pediatric Dentists and Post Graduates

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Abstract:

BACKGROUND: Dental anxiety is one of the most common obstacles to dental care, especially for children. Hence, dental anxiety in children should not be underestimated because it prevents children from receiving treatment and causes further health problems.

Aromatherapy is one such alternative medical approach that includes the inhaled, absorbed, or ingested use of essential oils for prophylactic treatment. Hence, children are likely to accept essential oils that they find pleasant.

AIM: To assess the knowledge, attitude and practice regarding Aromatherapy in managing dental anxiety in pediatric patients among Pediatric dentists and Post Graduates.

SETTING AND DESIGN: Descriptive Cross-sectional study conducted among Pediatric dentists and post graduates in Mangalore.

MATERIALS AND METHOD: This is a questionnaire study which consists of 20 questions and distributed to the participants through online platform as Google forms. 62 participants are included in the study among Pediatric dentists and post graduate students. Prior to the study ethical clearance has been obtained. Informed consent was obtained from the participants.

STATISTICAL ANALYSIS: Descriptive statistics used for analysis.

RESULTS: Results were statistically analysed and concluded that awareness among Aromatherapy in managing dental anxiety in children in the Pediatric dentists and post graduates students is satisfactory. But the practical knowledge about the aromatherapy is very scarce.

CONCLUSION: Aromatherapy for managing Dental anxiety is an excellent alternative technique to reduce and calm the pediatric patients during their dental treatment.

KEYWORDS: Aromatherapy, dental anxiety, pediatric patients

I. Introduction

Dental anxiety is one of the most common obstacles to dental care, especially for children. The prevalence rates of dental anxiety range from 3 to 43% in different populations. Cognitive and emotional conditions of patients affect the central nervous system, which leads to an increase in blood pressure and heart rate. Hence, dental anxiety in children should not be underestimated because it prevents children from receiving treatment and causes further health problems. [1] The prevalence of dental fear and anxiety (DFA), i.e., dental fear and anxiety in children and adolescents range from 5% to 20% in various countries. Dental stimuli have the potential of inducing anxiety. There are various anxiety-provoking factors in a dental setting such as the sights, needles, sounds, drilling, smells of cut dentine, medicaments, and sensation of high-frequency vibration.[2] Dental anxiety also affects the working lives of dental professionals. Dealing with anxious patients leads to increased tension that may potentially compromise performance. One common way of managing anxiety in the dental surgery is through conscious sedation or general anesthesia.[3]

Recently, contemporary and alternative medicine approaches have been considered for use in dental and medical settings. Aromatherapy is one such alternative medical approach that includes the inhaled, absorbed, or ingested use of essential oils for prophylactic treatment.[4] The concept of the therapeutic use of aromatic essential oils is supported by this method that can produce a positive physiological effect through the sense of smell. Aromatherapy can induce relaxation and relieve anxiety symptoms in an inexpensive, simple way.[5] The effect of aromatherapy, on adults, in the treatment of medical conditions has been extensively reported. Studies on the effect of this therapy as a palliative medicine on pain, anxiety, emotional distress, quality of life or sleep in patients with cancer observed inconsistent findings; few studies documenting an improvement, while others reporting no effect. The positive effect of aromatherapy on pain, anxiety and depression has also been stated in postpartum woman. Additionally, positive anxiolytic effect of essential oils in healthy adults subjected to anxiogenic challenge is also reported.[6]

Aromatherapy is used in several forms including massage, inhalation, compresses, baths, or topical application. Inhalation and massage are the most widely used forms, especially in medical practices. It involves the inhalation of scented oils, volatile molecules of the oil, which reach the lungs and rapidly diffuse into the blood, causing brain activation through systemic circulation. However, these molecules also bind to olfactory receptors, creating an electrophysiological response, which reaches the brain.[7] Lavender scent, bergamot oil, and apple odors among others have been investigated mostly among the adult population. One study that investigated the effect of gender and ethnicity on preferences and attitudes in children reported that children are very different from adults in their odors and taste preferences. Hence, children are likely to accept essential oils that they find pleasant.

1.1: Need for Study:

Aromatherapy has been practiced worldwide in the medical field, but less experience in dental field. Many studies have showed its effectiveness in calming the anxious dental patients in order to accept the treatments. Fewer studies were reported on its effect on child patients with dental anxiety.

II. Aim and Objectives:

To evaluate the Knowledge, attitude and practice among Pediatric dentists and post graduates regarding the use of Aromatherapy in managing the dental anxiety among pediatric patients.

III. Methodology:

This is a descriptive cross sectional study conducted among the Pediatric dentists and Post graduates on managing dental anxiety among pediatric patients. 62 participants were selected for the study from the Pediatric practitioners and Post graduates. A set of 20 questions were prepared and distributed to participants through online platform, Google forms. The questionnaire was prepared based on the following parts:

- 1) Demographic data
- 2) Knowledge and Attitude based
- 3) Practice based

Data was collected and compiled using Excel software. Descriptive statistical analysis was performed to obtain the results.

IV. Results

In the present study the online questionnaire was filled by the participants from Pediatric practitioners and Post graduates. The study included 59.6% Pediatric dentists and 40.3% Post Graduate students (Table: 1). Among Pediatric dentists most of them participated in the study have experience below 5 years (88%), 5-10 years (8%) and 10-15 years (4%) (Table: 2). Post graduates responded to the questionnaire is First year (29.7%), Second year (32.4%) and Third year (32.8%) (Table: 3).

Table: 1 Practitioners and post graduates calculation

| | |
|-------------------|-------|
| Pediatric Dentist | 59.6% |
| Post Graduates | 40.3% |

Table 2: Practitioners year of experience

| | |
|---------------|-----|
| Below 5 years | 88% |
| 5-10 years | 8% |
| 10-15 years | 4% |

Table 3: Post Graduate year of study

| | |
|-------------|-------|
| First year | 29.7% |
| Second year | 32.4% |
| Third year | 32.8% |

Table 4 and Table 5 demonstrates the knowledge and attitude based and Practice based questions respectively among Pediatric dentists and Post graduate students in managing the dental anxiety of pediatric patients by Aromatherapy. Most of the Pediatric dentists (25.8%) and Post graduates (33.9%) feel that children are reluctant to visit dentist due to both pain and dental anxiety and fear. Pediatric dentists (37.1%) and Post Graduates (56.5%) find it important to address and manage the dental anxiety in pediatric patients. Aromatherapy is an alternative method to manage the dental anxiety and 27.4% Pediatric dentists and 40.3% Post graduates think this method maybe adaptable.

| Knowledge and Attitude based | Designation | Percentage |
|------------------------------------------------------------------------------------|--------------------|------------|
| 1) Do you know the reasons why children are reluctant to visit dental personnel? | | |
| a) Pain | Pediatric dentists | 0.0 % |
| | Post Graduates | 1.6 % |
| b) Dental anxiety and fear | Pediatric dentists | 14.5 % |
| | Post Graduates | 24.2 % |
| c) Both | Pediatric dentists | 25.8 % |
| | Post Graduates | 33.9 % |
| 2) Do you feel the need to address dental anxiety in a pediatric patient? | | |
| a) Very essential | Pediatric dentists | 40.3 % |
| | Post Graduates | 59.7 % |
| 3) How important do you feel about managing dental anxiety in a pediatric patient? | | |
| a) Yes | Pediatric dentists | 37.1 % |
| | Post Graduates | 56.5 % |
| b) No | Pediatric dentists | 3.2 % |
| | Post Graduates | 3.2 % |
| 4) Are you aware of using aromatherapy to manage dental anxiety in children? | | |
| a) Yes | Pediatric dentists | 25.8 % |
| | Post Graduates | 37.1 % |
| b) No | Pediatric dentists | 9.7 % |
| | Post Graduates | 14.5 % |
| c) Not sure | Pediatric dentists | 4.8 % |
| | Post Graduates | 8.1 % |
| 5) What is your opinion about aromatherapy therapy? | | |
| a) Useful | Pediatric dentists | 11.3 % |
| | Post Graduates | 19.4 % |

| | | |
|----------------------------------------------------------------|--------------------|--------|
| b) Not useful | Pediatric dentists | 1.6 % |
| | Post Graduates | 0.0 % |
| c) Maybe adaptable | Pediatric dentists | 27.4 % |
| | Post Graduates | 40.3 % |
| 6) Do you feel children will be influenced by aroma? | | |
| a) Yes | Pediatric dentists | 19.4 % |
| | Post Graduates | 30.6 % |
| b) No | Pediatric dentists | 3.2 % |
| | Post Graduates | 1.6 % |
| c) Not sure | Pediatric dentists | 17.7 % |
| | Post Graduates | 27.4 % |
| 7) Do you believe that aroma can calm down the nervous system? | | |
| a) Yes | Pediatric dentists | 32.3 % |
| | Post Graduates | 51.6 % |
| b) No | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| c) Not sure | Pediatric dentists | 8.1 % |
| | Post Graduates | 8.1 % |
| 8) How was dental anxiety reduced by aromatherapy? | | |
| a) Olfactory stimulation | Pediatric dentists | 29.0 % |
| | Post Graduates | 45.2 % |
| b) Autonomous deactivation | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| c) Acting on Amygdala | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| d) All of the above | Pediatric dentists | 11.3 % |
| | Post Graduates | 14.5 % |
| 9) How does aromatherapy affect the brain? | | |

| | | |
|-------------------------------------------------------------------------------------------------|--------------------|--------|
| a) Improves mood | Pediatric Dentists | 27.4 % |
| | Post Graduates | 41.9 % |
| b) Increases memory | Pediatric Dentists | 12.9 % |
| | Post Graduates | 17.7 % |
| c) Decreases stress | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| d) All of the above | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| 10) Are you aware of the effects of aromatherapy on Blood pressure and oxygen saturation? | | |
| a) Yes | Pediatric Dentists | 8.1 % |
| | Post Graduates | 14.5 % |
| b) No | Pediatric Dentists | 8.1 % |
| | Post Graduates | 17.7 % |
| c) Don't know | Pediatric dentists | 24.2 % |
| | Post Graduates | 27.4 % |
| 11) Are you aware of any methods to adopt in aromatherapy? | | |
| a) Yes | Pediatric dentists | 12.9 % |
| | Post Graduates | 24.2 % |
| b) No | Pediatric dentists | 11.3 % |
| | Post Graduates | 14.5 % |
| c) Don't know | Pediatric dentists | 16.1 % |
| | Post Graduates | 21.0 % |
| 12) Are you aware of different induction techniques of aromatherapy used in pediatric patients? | | |
| a) Yes | Pediatric dentists | 12.9 % |
| | Post Graduates | 24.2 % |
| b) No | Pediatric dentists | 11.3 % |
| | Post Graduates | 14.5 % |

| | | |
|------------------------------------------------------------------|--------------------|--------|
| c) Don't know | Pediatric dentists | 16.1 % |
| | Post Graduates | 21.0 % |
| If yes, which are the different techniques used in aromatherapy? | | |
| a) Inhalational | Pediatric dentists | 13.0 % |
| | Post Graduates | 21.7 % |
| b) Topical application | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| c) Both | Pediatric dentists | 19.6 % |
| | Post Graduates | 45.7 % |

Table 4: Knowledge and Attitude Based questions

| Practice based | Designation | Percentage |
|-----------------------------------------------------------------|--------------------|------------|
| 13) Do you follow pre-appointment behaviour modification? | | |
| a) Yes | Pediatric dentists | 17.7 % |
| | Post Graduates | 33.9 % |
| b) No | Pediatric dentists | 4.8 % |
| | Post Graduates | 4.8 % |
| c) Sometimes | Pediatric dentists | 17.7 % |
| | Post Graduates | 21.0 % |
| 14) How do you manage dental anxiety in your clinical practice? | | |
| a) Behaviour treatments | Pediatric dentists | 33.9 % |
| | Post Graduates | 50.0 % |
| b) N ₂ O inhalation or sedation | Pediatric dentists | 4.8 % |
| | Post Graduates | 4.8 % |
| c) Othes | Pediatric dentists | 1.6 % |
| | Post Graduates | 4.8 % |
| 15) Which are the most widely used aromas in managing anxiety? | | |
| a) Lavender | Pediatric Dentists | 9.7 % |

| | | |
|------------------------------------------------------------------------|--------------------|--------|
| | Post Graduates | 19.4 % |
| b) Orange essential oil | Pediatric Dentists | 0.0 % |
| | Post Graduates | 3.2 % |
| c) Lemongrass oil | Pediatric dentists | 3.2 % |
| | Post Graduates | 4.8 % |
| d) All of the above | Pediatric dentists | 27.4 % |
| | Post Graduates | 32.3 % |
| 16) Which of these aromas are proved to be more effective in relaxing? | | |
| a) Lavender | Pediatric Dentists | 22.6 % |
| | Post Graduates | 38.7 % |
| b) Orange essential oil | Pediatric Dentists | 6.5 % |
| | Post Graduates | 6.5 % |
| c) Lemongrass oil | Pediatric dentists | 11.3 % |
| | Post Graduates | 14.5 % |
| 17) Which do you think is the most effective methods of the following? | | |
| a) Patches | Pediatric Dentists | 12.9 % |
| | Post Graduates | 11.3 % |
| b) Incense stick | Pediatric Dentists | 14.5 % |
| | Post Graduates | 27.4 % |
| c) Room freshner | Pediatric dentists | 12.9 % |
| | Post Graduates | 21.0 % |
| 18) In which age category is aromatherapy contraindicated? | | |
| a) 0-3 years | Pediatric Dentists | 21.0 % |
| | Post Graduates | 53.2 % |
| b) 3-6 years | Pediatric Dentists | 8.1 % |
| | Post Graduates | 3.2 % |
| c) above 6 years | Pediatric dentists | 11.3 % |
| | Post Graduates | 3.2 % |

| | | |
|--------------------------------------------------------------------------------------------------------|--------------------|--------|
| 19) What are the benefits of aromatherapy? | | |
| a) Reduction of stress and anxiety | Pediatric Dentists | 19.4 % |
| | Post Graduates | 30.6 % |
| b) Decrease muscle tension | Pediatric Dentists | 0 |
| | Post Graduates | 0 |
| c) Pain relief | Pediatric dentists | 0 |
| | Post Graduates | 0 |
| d) All of the above | Pediatric dentists | 21.0 % |
| | Post Graduates | 29.0 % |
| 20) Do you recommend aromatherapy for anxiety management in pediatric patients to other practitioners? | | |
| a) Yes | Pediatric Dentists | 19.4 % |
| | Post Graduates | 50.0 % |
| b) No | Pediatric Dentists | 1.6 % |
| | Post Graduates | 0.0 % |
| c) Not sure | Pediatric dentists | 19.4 % |
| | Post Graduates | 9.7 % |

Table 5: Practice based questions

V. DISCUSSION:

This study was done to assess Knowledge, attitude and practice among Pediatric dentists and post graduates regarding the use of Aromatherapy in managing the dental anxiety among pediatric patients. This study was an online survey which was done among 62 participants including Pediatric dentists and Post graduates. The questionnaire was divided into three parts, i.e, demographic data, knowledge and attitude based questions and practice based questions towards managing the dental anxiety among pediatric patients.

According to the results of this present study, most of the Pediatric dentists (37.1%) and Post Graduates (56.5%) find it important to address and manage the dental anxiety in pediatric patients. Aromatherapy is an alternative method to manage the dental anxiety and 27.4% Pediatric dentists and 40.3% Post graduates think this method maybe adaptable.

Recently, contemporary and alternative medicine approaches such as aromatherapy (use of essential oils, scented, and volatile liquid substances for therapeutic purposes) have been considered in dental settings. This method supports the concept that common oils can produce positive pharmacological, psychological, and physiological effect on humans by its aroma. Anxiety in a child alters the levels of pulse rate, blood pressure, and oxygen saturation. Pulse rate in the present study was recorded, as was also recorded by previous studies conducted by Westra et al. [2]

There are various aromas proved to be effective in calming and relaxing the patients. Few of them are Lavender, Orange essential oil, Lemongrass oil and others. Most of the Pediatric dentists (22.6 %) and Post graduates (38.7%) thought Lavender is most effective in managing the dental anxiety among the pediatric patients. Among the different methods of induction of aromatherapy, incense sticks proved to be effective according to Pediatric dentists (14.5%) and Post graduates (27.4%) in the current study. Several studies have reported the anxiolytic effect of aromatherapy with different essential oils in medical settings. It has been shown that lavender aromatherapy may be an efficient therapeutic option for managing the pain. Karaman et al. introduced the lavender aromatherapy as a beneficial choice for managing anxiety and pain during peripheral venous access placement. Cho et al. showed the effectiveness of aromatherapy with the oil blend of lavender, roman chamomile, and neroli in reducing the anxiety, improving the sleep, and stabilizing the blood pressure of patients undergoing cardiac stent insertion.[5] Aromatherapy is one among the proposed, and this has an added clinical advantage of being non-invasive and inexpensive.[6]

According to this current study, Pediatric dentists (21.0%) and Post graduates (53.2%) thought aromatherapy is contraindicated in children of age group of 0-3 years. Consequently, dental anxiety in children should not be underestimated because it prevents them from receiving the proper treatment and causes further oral health problems for them during childhood.[9] In a study by Lawrence, et al. in 1991 this technique had the lowest acceptance among parents as well.[15]

In the current study, the benefits of aromatherapy were thought to be reduction of stress and anxiety, decrease muscle tension and pain relief. Pediatric dentists (21%) and Post graduates (29%) thought all the properties mentioned above are benefits of aromatherapy. Almost all of the Pediatric dentists and Post graduate students participated in the present study were willing to recommended Aromatherapy to manage dental anxiety among the pediatric patients. Anxious and fearful children experience the pain of higher intensity and longer duration. Hence, the main focus of research is to reduce these emotions. To accomplish this, pediatric dentists employ many behavior guidance techniques, either non-pharmacological or pharmacological. Aromatherapy is one among the proposed, and this has the added clinical advantage of being noninvasive and inexpensive. This therapy uses essential oils which are scented, volatile liquid substances removed from plants using steam or pressure.[16]

The present study assessed the Knowledge, attitude and practice among Pediatric dentists and post graduates regarding the use of Aromatherapy in managing the dental anxiety among pediatric patients and concluded that most of the Pediatric dentists and post graduates have a good opinion about the Aromatherapy and recommends to other practitioners to manage the dental anxiety among pediatric patients.

VI. CONCLUSION

Aromatherapy for managing Dental anxiety is an excellent alternative technique to reduce and calm the pediatric patients during their dental treatment.

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