Effectiveness of reframing as behaviour management technique in paediatric dentistry: A scoping review

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Abstract
Background: For children with fear and anxiety, dental appointments are considered as stressful situations. The dental literature has mentioned various behaviour management techniques used to reduce the dental fear and anxiety. Reframing is one such technique which is used for behaviour management with wide applications in health sciences. Hence, exploring this technique in the dental literature is of prime importance.

Objectives: This scoping review aims to identify the evidence on the effectiveness of reframing as behaviour management technique in children undergoing dental treatment in the available literature.

Method: The Joanna Briggs Institute methodology for scoping reviews is followed in this study and relevant published data from case reports, randomized and non-randomized controlled clinical trials and literature reviews published without restricting time line till August 2023 from online databases of PubMed, Scopus, ProQuest were assessed by two reviewers for their suitability with our aim of study. The data were synthesized using content analysis.

Results: Through literature search, 108 articles were found based on search strategy. After screening the titles, keywords and abstract and removing the duplicates only 10 articles were included for full text review. In the end only 5 articles were included for scoping review for their content analysis.

Conclusions: The searched literature has revealed that reframing had changed the behaviour of the child towards dental outcomes but the literature is sparse regarding behaviour management technique for children to alleviate fear and anxiety. Also, there were no clinical trials done to know the efficacy of this technique and means to measure the outcome.

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(Key words: Behaviour management, Children, Dentistry, Fear and anxiety, Reframing)

Background
The primary aim of the dentist is to instil positive attitude in a child towards dentistry by providing quality treatment in a safe environment1. To render successful and high-quality treatment, the cooperation of the child for dental treatment is very important. Hence, the first visit and experience of the child is crucial in moulding the child’s attitude and outcomes towards dentistry2. However, dental fear and anxiety in a child present as a challenge to the dentist, parents as well as to the child, which over time, if not managed properly can lead to avoidance of dental care leading to poor oral health3. Hence, managing the child’s behaviour is very important in dental practice for successful treatment. For this, both pharmacological and non-pharmacological behaviour management techniques have been developed. Nowadays, the non-pharmacological techniques are gaining popularity owing to no risk for the child when compared to pharmacological techniques. There are many techniques that are discussed successfully in the literature like the tell-show-do, modelling, virtual reality, distraction, voice control, memory reconstruction and desensitization, which deal psychologically with the child for alleviating the fear and anxiety4. Medical literature has often used and compared reframing with other strategies for coping in stressful situations and has been found as effective coping strategy in stressful situation567. However, the information available in literature regarding the application of reframing in children for dental outcomes is not clear.

Objectives
The scoping review was conducted to identify the research done in this area and also to find any gaps in knowledge. With this the following research question was formulated: What evidence is found regarding reframing as behaviour management technique in the dental set-up for children in the available literature and also to know its efficacy.

Method
The review protocol for scoping review is not considered (as it is not mandatory for scoping reviews). This scoping review followed Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews. The Joanna Briggs Institute approach using Population, Concept and Context (PCC) is used in this scoping review to guide the development of the research question and the eligibility criteria.
The PCC key element format was used in this scoping review.
P- Population : Children
C- Concept : Reframing
C- Context : Dentistry
Inclusion criteria:
1. Studies conducted on reframing in children in a dental set up.
2. Study design can be case reports, randomized and non-randomised controlled clinical trials, review articles.
4. Studies available in English or any language if their translation is available in English.

Exclusion criteria:
1. Studies conducted on reframing in adult population in a dental set up.
2. Studies conducted on reframing in context of policy making, rules, ethics and regulation in dental practice.
3. Articles which are reported as letter to editors or short communication.
4. Studies conducted on children with special needs and or with medical condition.

Search strategy:
All available relevant documents from literature were searched through the bibliographic databases which were published till August 2023 from PubMed, Scopus, ProQuest. The keywords used in the search strategy were Reframing AND Dentistry AND Children AND Behaviour management AND Fear and anxiety. Gray literature, cross references were hand searched for additional articles.

Electronic search strategy for Scopus database is as follows
<keywords> Reframing AND Dentistry AND Children>
<keywords> Reframing AND Dentistry AND Behaviour management>
<keywords> Reframing AND Dentistry AND Fear and Anxiety>

The limits put during the search were articles related to dentistry that were published till August 2023.

Data selection:
Following the search through search strategy the two review authors screened for duplicates through Zotero software version 6.0.26 followed by screening for the titles, abstracts and full texts and included eligible articles which met with inclusion criteria and excluded the others with reason of exclusion. Of the 108 articles that were yielded through search, 47 duplicates were excluded. Only 10 articles were included for full text review after screening through the titles and abstracts. In the end only 5 articles were included for scoping review (Figure 1).

Data charting:
The following data were extracted and charted from the yielded literature. The authors, year of publication, country of origin, aim/purpose, study type, study population, key findings as per JBI methodology guidance for scoping reviews (Table 1).
Table 1: Sources of literature evidence included in this study

<table>
<thead>
<tr>
<th>No.</th>
<th>Authors</th>
<th>Year of publication</th>
<th>Country of origin</th>
<th>Aim/ purpose</th>
<th>Study type</th>
<th>Study population</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Padung N, et al</td>
<td>2021</td>
<td>India</td>
<td>To change behaviour of thumb sucking habit in a child by application of reframing technique by way of symptom prescription.</td>
<td>Case report</td>
<td>Child</td>
<td>The thought perceptions of the individual can be altered by reframing technique by employing ideas of psychoanalytical hypothesis of Freud, cognitive control of Pavlov and cognitive behavior of Eric Berne. Hence by reframing the thumb sucking habit was eliminated by the child.</td>
</tr>
<tr>
<td>2</td>
<td>Yogesh Kumar TD, et al</td>
<td>2014</td>
<td>India</td>
<td>Attempt to explain application of reframing in a clinical setup for habit cessation</td>
<td>Case report</td>
<td>Child</td>
<td>Change in approach by applying reframing helped in bringing the change in attitude and mind of the child thereby terminating the thumb sucking habit.</td>
</tr>
<tr>
<td>3</td>
<td>Nuvvula S, et al</td>
<td>2013</td>
<td>India</td>
<td>Explain psychological perspective behind reframing for clinical use in habit correction</td>
<td>Case report</td>
<td>Child</td>
<td>For effective communication the ego states of both the patient and doctor have to be of adult ego state. Reframing helps in modifying the ego state of the child and helps in effective communication by changing the thought process and associations. Thus, by application of this technique the lip sucking habit was abolished.</td>
</tr>
<tr>
<td>4</td>
<td>Peretz B, et al</td>
<td>2013</td>
<td>Israel</td>
<td>Support and explain reframing as a hypnosis element in managing children’s behaviour during dental treatment.</td>
<td>Review</td>
<td></td>
<td>With reframing technique, the facts do not change but the there is change in the meaning attributed to them.</td>
</tr>
<tr>
<td>5</td>
<td>Peretz B, et al</td>
<td>1999</td>
<td>Israel</td>
<td>The other behaviour guidance technique brings about just the first order change but by reframing second order change is made in a child.</td>
<td>Review</td>
<td></td>
<td>Reframing is a powerful tool used to overcome critical situations like fear and anxiety.</td>
</tr>
</tbody>
</table>

Results

Of the 5 articles included 3 are case reports and 2 are review articles. All the case reports are describing cessation of habit through reframing and these studies are reported in India. The 2 reviews are reported from Israel which have explained the rationale for using reframing in paediatric dentistry. As all the articles deal with psychological aspect they were qualitatively analysed for their content (Table 1).

Discussion

All three case reports have explained the application of reframing for changing the behaviour of indulgence and cessation of oral habit through three principles. They are psychoanalytical theory of Sigmond Freud according to which during stressful situation the change in ego state takes place and adaptive regression happens which changes the thinking, which in turn affects the associations of stimulus response pairs as stated by Pavlov in his classical conditioning. The reframing helps in converting the undesirable stimulus response pair to desirable stimulus response by changing the thinking of an individual by changing the ego state to that of an adult ego state by applying transactional analysis of Eric Berne. According to this the personalities of every individual is made up of three ego states; child, parent and adult. The communication between two individuals can involve six ego states, three for each individual. This will help in understanding one’s ego state with that of others for clear interactions. By knowing the ego state, it helps one to change their ego state and also guide the change in others ego state. The child can accept reframing provided the child has the ability to communicate effectively. 8-10.

The other 2 articles were literature review which gave the appraisal of reframing as behaviour management technique in an anxious child for dental procedures. The authors have described that reframing can be applied in the dental office where in the first order change that happens with Tell-Show-Do technique can be converted to second order change with reframing. In first order change the solution does not change the problems but creates stability but with reframing, second order change happens which resolves the problem. Like in the Tell-Show-Do one says it as injection or rubber dam, these words are fear and anxiety provoking to the child instead they can be reframed as sleepy water and raincoat which sound harmless. So, with this second order of reality the attention and confidence of the child can be achieved. This technique is believed to work well in children as the right hemisphere of the brain is more developed which deals with holistic and analogue issues when compared to left hemisphere which deals with rationality and intellect which is not so developed in children. However, reframing works only if the right hemisphere of the brain is well developed. This development is usually seen in children above three years of age who can communicate and tell stories.11-12.

Although all the case reports have proved the efficacy of reframing in changing the behaviour of the child in oral habit correction and the reviews have outlined the means by which they can be effective, the literature has shown very few studies conducted on reframing. Reframing is a part of neuro-linguistic programming and it involves steps in changing the behaviour. All the articles should have included the various steps involved in reframing. Also, if randomized clinical trials are conducted using this technique, we can assess the efficacy better.

This scoping review has certain limitations. Firstly, only full text articles were reviewed. The relevant literature from other data bases other than the ones searched were possibly neglected; similar articles may have been published in other data bases. The inclusion of these articles in future might be valuable.
As literature has stated that reframing converts unpleasant notions to acceptable notions, hence this reframing can be applied routinely during dental procedures for children. All studies reviewed were case reports and review on the applicability of reframing. However, to know its efficacy comparative randomized clinical trials need to be conducted with other behaviour management techniques. Also, the steps involved in reframing need to be defined appropriately.

Conclusions
The searched literature has revealed that reframing had changed the behaviour of the child towards dental outcomes but the literature is sparse regarding behaviour management technique for children to alleviate fear and anxiety. Also, there were no clinical trials done to know the efficacy of this technique and means to measure the outcome.

References