INTRODUCING A NEWER DENTAL ANXIETY SCALE: DEEPAK VISWANATH'S NEWER DENTAL ANXIETY SCALE BASED ON CHILD'S PERCEPTIONS [Deepak Viswanath's Child's Perceptions Dental Anxiety Questionnaire (DV-CPDAQ)]

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Abstract:

Dental anxiety is a multi-system reaction to a perceived threat or risk. It is a particular, subjective experience that varies from person to person. It is a typical occurrence that ranks fifth among the most generally feared circumstances for humans. In the absence of diagnosis and management, dental anxiety is likely to begin in childhood and grow with time. Understanding the level of anxiety prior to treatment and the variables that contribute to it will enable the dentist to recognise the anxious child and give better anxiety management and a more enjoyable experience. This paper focuses on the development of a new self-reported scale for the assessment of dental anxiety in children.

Keywords: Dental anxiety, Dental Fear, Dental phobia, DV-CPDAQ, child perceptions

Introduction:

An understanding of the development of emotional knowledge and an awareness of age-appropriate effective milestones are essential for behavior management in pediatric dental practice.[1] Goldstein reported that, certain colours generate distinct emotional responses.[1] Color appears to be situationally suitable, representing diverse emotions, thoughts, and behaviours. Color preference in the dental environment could be a measure that reflects and emphasises specific emotional states, fear, and dental anxiety.[1,2] Color perception and preference can be utilised to investigate children's perceptions of events in pediatric clinical settings. Studies also reported that the color can be used to assess dental anxiety and dark colour such as black and red shows negative emotions

Previous Scales:

The ***Children's Fear Survey Schedule Dental Subscale (CFSS-DS)*** is a fifteen-question psychometric scale questionnaire used to assess dental fear in children. [3,4,5]

Another scale is ***Modified Child Dental Anxiety Scale (MCDAS)*** which analyses additional anxiety-provoking dental situations Dental injections, general anaesthesia, extraction, and sedation. [4,5] Children assisted in the development of a child-appropriate response format for the MCDAS. Howard KE et al (2007) introduced a ***faces version of the MCDAS (MCDASf)*** that incorporates faces (similar to the Facial Image Scale, but the final face on this scale is crying) within the response format. The faces version of the measure was created to be more appropriate for children as young as three years old, as well as those with limited cognitive functioning. [4]

The ***Abeer Children Dental Anxiety Scale (ACDAS)*** is a valid cognitive dental anxiety scale developed by Abeer Al-Namankany that can be used for children aged 6 and up. ACDAS assesses the child's experience with dentistry in the same way that the CFSS-DS does, but it also assesses other important factors such as the child's perception of losing control, feelings of shame, and loss of self-confidence, all of which are related to the cognitive nature of the child and may play a role in anxiety. [6,7]

The ***Dental Fear Schedule Subscale Short Form (DFSS-SF)*** is a condensed version of the CFSS-DS that asks children to rate their level of fear in response to eight specific dental-related situations/treatments. [4]

The Venham Picture Test (VPT) is a pictorial measure of dental anxiety that includes eight images, each of which depicts two cartoon boys displaying opposing emotions. The participant is asked to choose which of the eight images of boys best represents their feelings at the time. The measure was designed for children as young as three, so the use of pictures eliminates the need for children to have developed language skills, as children can respond to the measure nonverbally. One of the measure's main drawbacks is that some of the emotions depicted in the eight images are ambiguous (that is, it is unclear what behavior/feelings they are displaying). [4,5]

The Facial Image Scale (FIS) consists of one item with five response options (ranging from a very sad to a very smiley face). Children are asked to indicate which of the faces they most closely resemble at the time, resulting in a 'state' measure of anxiety. [4,5]

A seven-item facial image scale is included in the ***Smiley Faces Programme (SFP) and Revised SFP*** as an interactive response format. The original SFP asks children to respond to four dental scenarios (for example, 'having to have dental treatment the next day'), and the Revised SFP adds a fifth dental scenario ('about to have a tooth extracted'). [4,5,8]

According to Shetty et al., the ***RMS-Pictorial scale*** consists of a row of five faces that range from extremely happy to extremely unhappy. The child was shown a hardcopy of scale and asked to choose one of the five faces based on how they felt at the time in the dental clinic. Sadana G et al (2016) developed ***the Chota Bheem-Chutki Scale***, which consists of two cards with Chota Bheem cartoon images for boys and Chutki cartoon images for girls. Setty JV et al (2019) recently introduced the ***Animated Emoji Scale (AES)***, which contains 5 graphics of animated emoji faces. The scale had scores ranging from 1 (very happy emoji) to 5. (Very unhappy emoji). [5]

An open-ended evaluation of dental fear and anxiety using children's drawings has been proposed. Where words fail, children's drawings can help them express themselves. A study proposed analysing these drawings as a method for assessing young children's dental fear and anxiety. After their dental treatment, the children were given drawing materials and time to draw a dental clinic. Their drawings were evaluated using a scoring sheet and the final score reflected the child's level of dental anxiety. [3]

Importance of Perceptions of child:

The causes of the child's fear and anxiety as well as what is unfolding in this universe during dental treatment can be better understood by having knowledge of the child's perception of dental care. Safe methods for identifying children's feelings are critical for establishing appropriate dental treatment. The primary objective of determining children's attitudes toward dentists is to make positive changes or adjustments that will make

children more comfortable in the dentist's office and improve the quality of dental visits. Children have strong preferences for the appearance of their dentist and dental clinics, as well as identifiable fears associated with dental visits.[1] Questionnaires are useful tools for evaluating a child's perception of dental treatment by professionals, which rely solely on verbal information provided by patients.[3] Pictures are preferable because they do not necessitate direct responses and can help express feelings that the child is unaware of or unable to express verbally.[3,5] The identification of the causes of fear and anxiety is critical for the proper management of paediatric patients. In literature not many scales primely focuses on the perceptions of child regarding their dental visit, dentist, and dental treatment. Hence, our newer scale is the first of its kind as its prime objective is to entail the perceptions of child for better understanding of dental anxiety among children.

Therefore, we have developed a newer Self- reporting dental anxiety assessment tool based on child's perceptions DEEPAK VISWANATH'S NEWER DENTAL ANXIETY SCALE (Child's Perceptions Dental Anxiety Questionnaire, DV-CPDAQ)

Uniqueness of our scale:

Various scales are used to assess dental anxiety in which self-reporting scales are mostly used because of the ease of administration and less time consuming.[3,4] Pictorial scales or facial analogue scales are mostly used as children can corelate their emotional state through the pictures shown. Hence, considering these facts, we are introducing a newer scale based exclusively on child's perceptions towards various stimuli and factors that are related to dental anxiety, DEEPAK VISWANATH'S NEWER DENTAL ANXIETY SCALE (Child's Perceptions Dental Anxiety Questionnaire DV-CPDAQ) consisting of 5 pictograms for scoring the dental anxiety.

Our unique scale has two parts-

Part A- **Dental part**- contains 39 questions and 5 pictograms to elicit the answers.

Part B- **Cognitive part**- contains 20 questions, further subdivided into 3 categories and the given responses will be recorded appropriately.

Part A: This section contains the main questionnaire and 5 pictograms to be marked as answers for scoring/assessing the dental anxiety. We have formulated the present questionnaire emphasising on child's perceptions and have further subdivided them into 13 categories each containing 3 questions. These categories include-

Child's perceptions-

- *of visiting a dental clinic*
- *when he/she is in the waiting room*
- *of the dentist when he/she sees him for the first time*
- *dentist examining with dental instruments*
- *on altered taste sensations during treatment*
- *of taking local anaesthetic injection*
- *of different odours from the dental clinic*
- *of different sounds from dental clinics etc ., and so on.*

We have formulated the pictograms keeping in mind the fore-mentioned impact of colors on dental anxiety. Upon critical analysis, we arrived at a decision to choose 5 colors and included 4 additional factors that are closely interlinked with colors and these go on to form one set of complete image. This newer methodology could be an innovative tool to assess the dental anxiety in a child.

Concept behind choosing the following colors with reasoning:

- *Green color* depicts shows positivity and happiness
- *Orange color* depicts restlessness and impatience
- *Yellow color* depicts frustration and fear
- *Black Color* depicts pessimism and fear of loss
- *Red Color* signifies aggressiveness and irritation

Similarly, we have chosen other four additional factors and have reasoned it appropriately.

The child will be made to answer these questions with the help of the given pictograms. The main advantage of our questionnaire is that it is gender friendly and can be answered with ease by both boys and girls alike.

Part B- This is the *cognitive part* that consists of questionnaire to be answered by the child, child's parents, and also the dentists and the responses will be recorded appropriately.

Advantages of DV-CPDAQ Scale-

This scale is the first of its kind and can be very useful in assessing the child's perception towards dental anxiety.

Target Age: Our newly developed tool is a self-reporting scale which can assess the dental anxiety in a child. The scale is a self-reported tool and targets the children from 6-12 years of age.

Acknowledgements-

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