

# Relationship of Dental Anxiety with Different Coping Styles in Children

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## ABSTRACT

**Background:** Children face a moderate to a high degree of stress attached to all kinds of dental treatment resulting in compromised dental treatment. The way children cope with stress has been the focus of psychological and behavioral management research.

**Aim:** To find a relationship between anxious children to different coping styles that could help the pediatric dentist for planning treatment for the child to aid in effective coping.

**Design:** The anxiety level of 100 children aged between 8 to 12 years was assessed using a modified child dental anxiety scale (faces). They were then asked to fill up a monitoring-blunting dental tool in which certain dental situations along with their appropriate options were given. Children were asked to answer yes or no to those options. Scores were calculated individually for monitoring and blunting. The highest score was taken as the coping style of that particular child.

**Results:** A Chi-square test was performed to examine the relationship between the anxiety level and coping strategy and it was found to be non-significant. However, it was seen that children with moderate to high anxiety preferred monitoring coping style than blunting.

**Conclusion:** Monitoring-Blunting coping style is effective in reducing a child's dental anxiety.

**Keywords:** Coping strategies, Dental anxiety, Monitoring - Blunting

## 1. INTRODUCTION

Dental anxiety is related to several detrimental dental health behaviors like dental care avoidance <sup>1</sup>, greater numbers of caries/decayed tooth surfaces <sup>2</sup> and increased postoperative morbidity. It is thus important in examining how one copes with the anxious visits to the dentist. It is also important to observe the variability in coping strategies of different individuals that can aid in the skilful management of dental anxiety<sup>3</sup>.

Coping strategy as defined by American Psychological Association is an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation or in

modifying one's reaction to such a situation<sup>4</sup>. It refers to the cognitive and behavioral efforts made by individuals to master, tolerate, or reduce a stressful situation<sup>5</sup>. Children are extremely active in the use of silent coping in the dental setting with highly structured strategies. Such strategies appear to be effective in managing the internal perceptions and emotions that are aroused in a dental situation<sup>6</sup>.

Miller in 1981 suggested monitoring – blunting theory in which he stated that whenever faced with a threatening situation, individuals can respond either by looking after threatening information (i.e. monitoring) or by keeping away the threatening information (i.e. blunting)<sup>3</sup>. Buchanan & Niven's (1999) survey showed the monitoring and blunting coping styles as the two key psychological styles that deal during health threats. When one faces an aversive event, they either find out information about the threat (i.e. monitoring) or cognitively distract from threat (i.e. blunting). Those with a monitoring style tend to do better when more information is provided to them, and those with a blunting style do better when less information is given, which is referred to as the “congruency hypothesis”. The hypothesis states that interventions are congruent with the individual's preferred coping style and it will be more effective in reducing distress. Miller in 1981 suggested that whenever a threatening stressor is highly uncontrollable, blunting becomes one of the most useful coping styles, as the information obtained by monitoring cannot be used to control the stressor. Dental health care can perhaps be considered as a fairly fractious situation for children because the essential decisions about dental health care are more likely to be taken by the parent or a dentist. In essence, blunting has been the most frequently used strategy for pediatric patients in dental scenarios.

Dentists who are aware that dentally anxious children resort to behavioral coping strategies, will allow them to adjust to their anxiolytic interventions according to the emotional needs of the child. This information can help dental practitioners to modify his or her treatment to the child's emotional needs<sup>7</sup>. As a result, a study was designed to investigate children's coping strategies by using a self-report questionnaire tool and to provide efficacious anxiety-reducing interventions to various groups of children.

## 2. MATERIALS AND METHODS

This questionnaire based study was carried out among 100 children between 8 to 12 years of age who were having their first dental visit. Informed consent was obtained from children's parents or their legal guardians. Ethical approval was taken from the institutional ethical committee.

*Inclusion criteria:* Children with first dental visit and parents/guardians giving informed consent.

*Exclusion criteria:* Physically or mentally handicapped children and children with any medical history.

Anxiety level was checked using a modified child dental anxiety scale faces version (figure 1) and was given a form including monitoring blunting dental scale (questionnaire). This scale contains seven questions about different dental scenarios. These questions were modified from the originally proposed questionnaire by Buchanan and Niven in 1996, based on attempts to make it as relevant and comprehensible as possible. Each question was having six options, in which three suggest monitoring coping style and three suggest blunting coping style. Children were asked to imagine these seven dental scenarios and answer “yes” or “no” accordingly. This would be based on whether they would prefer to use that particular coping style for the respective scenario or not. The scores were then summed up differently with a possible score range of 0 to 21 for both monitoring as well as blunting. The highest score was taken as a coping style for that particular child.

*Statistical analysis:*

The data was tabulated and analyzed using SPSS software (version 23). A Descriptive statistics were done for each variable of the study (age and anxiety score) and a chi-square test of independence was performed for examining the relation of the anxiety and coping style. The significance level was set at  $p < .05$ .

**3. RESULTS**

For every nominal variable, frequencies as well as percentages were calculated (Table 1). Table 2 shows the summary statistics of age and anxiety scores. The most frequently observed category of gender was female ( $n = 52, 52\%$ ). The most frequently observed category of between monitor and blunter was monitor ( $n = 57, 57\%$ ).

The observations for age had an average of 9.59 ( $SD = 1.25, SEM = 0.12, Min = 8.00, Max = 12.00, Skewness = 0.25, Kurtosis = -0.90$ ). The observations for score had an average of 21.96 ( $SD = 6.61, SEM = 0.66, Min = 8.00, Max = 40.00, Skewness = -0.26, Kurtosis = 0.17$ ). When the skewness  $> 2$  in absolute value, the variable is considered to be asymmetrical about its mean. When the kurtosis  $\geq 3$ , the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers (Table 2).

The children were divided into two age groups - 8 to 10 years and 10 to 12 years (Table 3). An anxiety score above 16 indicates moderate to high anxiety and coping style was assessed among that group of children (Tables 4 and 5).

A chi-square test of independence was performed to examine the relationship between both the age groups and it was found to be not significant  $\chi^2 (1, N = 80) = 0.0529, p = 0.818075$ . Similarly, the same test was used to find the relation between both the coping strategies and age (separately for each age group) and was found to be non-significant ( $p > .05$ ). However, it was seen that children with moderate to high anxiety (anxiety score more than or equal to 16) prefer monitoring coping styles than blunting coping styles.

Table 1 Frequency Table for Nominal Variables

Variable	<i>n</i>	%
<b>Gender</b>		
Female	52	52
Male	48	48
Missing	0	0
<b>Monitor and Blunter</b>		
Monitor	57	57
Blunter	43	43
Missing	0	0

Table 2 Summary Statistics Table for Interval and Ratio Variables

Variable	<i>M</i>	<i>SD</i>	<i>n</i>	<i>SEM</i>	Min	Max	Skewness	Kurtosis
Age	9.59	1.25	100	0.12	8.00	12.00	0.25	-0.90
Anxiety Score	21.96	6.61	100	0.66	8.00	40.00	-0.26	0.17

Table 3 Frequency distribution table for age

CLASS	COUNT(n)	PERCENTAGE (%)
8-10	77	77
10-12	23	23
<b>Total</b>	100	100

Table 4 Frequency distribution table for anxiety score

CLASS	COUNT	PERCENTAGE (%)
8-15	20	20
16-23	37	37
24-31	39	39
32-39	3	3
40-47	1	1
<b>Total</b>	<b>100</b>	<b>100</b>

Table 5 Anxiety score of more than 16

Anxiety Score More Than Equal To 16			
Age group	Monitor/Blunter	Sex	Total
8 to 10	Blunter	F	11
		M	10
	Monitor	F	14
		M	13
10 to 12	Blunter	F	7
		M	7
	Monitor	F	11
		M	7

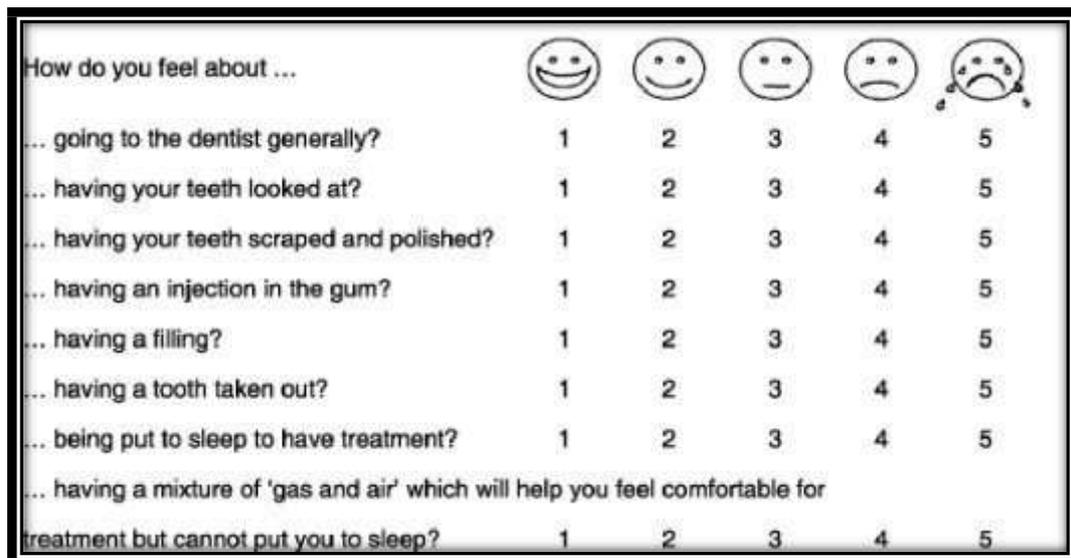


Figure 1 - Modified Dental Anxiety Scale - Faces

*Questionnaire - Monitoring Blunting Dental Scale (MBDS)*

Answer in yes or no -

I. *If you had to go to the dentist tomorrow.*

1. I might think up questions that I would like to ask the dentist.
2. I might want to speak to my family and friends about the appointment.
3. If there was a program about going to the dentist on the TV I would watch it.
4. I would keep myself busy to take my mind off the appointment.
5. I would not want to talk about the appointment with anyone.

6. I might push all thoughts of the dentist out of my mind.
- II. *If you were sitting in a waiting room waiting to have a treatment done.*
  7. I would read the pamphlets on “Going to the Dentist” that were in the waiting area.
  8. If there was someone with me (like mum or dad) I would chat with them about the dental treatment.
  9. I would read all of the posters on the wall about dental treatment.
  10. I would watch the waiting room TV even if I didn’t much like the show that was on.
  11. I would read the magazines or books in the waiting room, whatever they were.
  12. I might attempt to think about something nice which may happen in the future.
- III. *Having your tooth looked up (check-up).*
  13. I would find out about what the visit will be like, or what procedures will be done before I go.
  14. I would ask the dentist about my teeth.
  15. I would ask the dentist to give me a mirror so I can watch what is happening.
  16. I would avoid watching the dentist so I would not get nervous.
  17. I would think of some cartoon characters to distract myself.
  18. I would think to tell my friend about my visit to a dentist.
- IV. *Having your teeth cleaned and polished.*
  19. I would ask the dentist what he or she is going to do.
  20. I would ask the dentist whether I will feel pain or not.
  21. I would ask the dentist the reason for doing this procedure.
  22. I would think of a joke or story to distract myself.
  23. I would try to think about what I will do after the visit is over.
  24. I would try to avoid looking at the instruments and would try to look at other things.
- V. *If you were about to have a tooth drilled.*
  25. I would watch all of the dentist’s movements.
  26. I would listen out for the sound of the drill.
  27. I would want the dentist to tell me exactly what he or she was going to do.
  28. I would watch the TV on the wall if there was one.
  29. I would sing a favorite song in my head.
  30. I would think about what I was going to do when I got home.
- VI. *If you were about to have an injection in your gum.*
  31. I would want the dentist to tell me when I would feel pain.
  32. I would want the dentist to tell me exactly what he or she was doing step-by-step.
  33. I would ask the dentist questions about the injection.
  34. I would close my eyes or look away so I couldn’t see the needle coming towards me.
  35. I would try to push any thoughts about the needle or injection out of my head.
  36. I would try to think about nice stuff that’s happened lately.
- VII. *If you were about to have a tooth taken out.*
  37. I would ask the dentist to make me understand the importance of taking the tooth out.
  38. I would ask the dentist about my new tooth.
  39. I would ask the technique to explain it to me.
  40. I would sing a song in my mind.
  41. I would try to avoid looking at the instruments and would try to look at other things.

42. I would close my eyes so I cannot see the procedure.

**Monitor scores** – \_\_\_/21

**Blunter scores** – \_\_\_/21

**Monitor or blunter** – \_\_\_\_\_.

#### 4. DISCUSSION

In this study, the anxiety level of the child was first measured using the Modified Child Dental Anxiety Scale - Faces. (MCDAS) The MCDAS (Figure 1) is an eight-item self-report measure that assesses the severity of dental fear and anxiety (DFA) with typical dental situations in children aged 8–15 years. This scale asks children to indicate how anxious they are on various items like LA injection, sedation, and getting a tooth filled. It has a five-point severity response scale (1 = not worried to 5 = very worried). Total scores range from 8 (no DFA) to 40 (most severe DFA) <sup>8</sup>. A cut-off value of 16 has been reported <sup>9</sup>.

The reasons for using the anxiety scale are that this gives the dental team a clear indication of the anxiety level of the patient with the help of the cut-off points which guides the clinician in terms of low/moderate/high anxiety. Besides, it helps to guide the dentist to know a particular item of which the child is anxious. For example, a patient doesn't have a high overall score on the scale but does have a high score on one item (children might be very anxious about injections). This helps the clinician in discussing and forming the treatment plan. The other reason is that if the child completes the anxiety scale before the MBDS, it will help the child in articulating what they are anxious about. This will naturally lead to considering how they will cope with these situations/procedures while finishing up with the MBDS <sup>6</sup>.

Coping can be defined as a set of cognitive and effective actions that arise in response to a particular concern which represents an attempt to restore the balance or remove the turbulence for the individual. This may be done by solving the problem or adapting with the concern without bringing about a solution <sup>10</sup>. This concept of monitoring and blunting has gained much attention in coping processes <sup>11</sup>. The MBDS (questionnaire) is useful in helping children to effectively cope with dental treatment. It asks the child how they cope generally and also in specific dental procedures/treatments. However, not all children will fit directly either as monitors or blunter. Some will use blunting strategies for one and a different type of strategy for another procedure. The main thing is to have a way to explore what kind of strategy will work well for them and in what context. Unlike other scales of monitoring-blunting, this scale focuses on a specific range of dental scenarios. This may make the MBDS more appropriate to predict children's actual coping behavior in dental scenarios. However, it also means that this is not going to be a valid measure of children's general coping preference <sup>6</sup>.

A Buchanan & Niven (2003) study asking pediatric dentists regarding the techniques that they mostly use to manage dental anxiety of children stated that monitoring types of techniques (tell show do) were much more frequently used than blunting types (distraction). Studies by Van Meurs and colleagues who have explored coping strategies found that the children in their study used a wide variety of coping strategies in dealing with pain in dentistry and the most frequently used strategies were cognitively based strategies <sup>5</sup>. It was found that younger and more anxious children expressed a greater need for behavioral coping strategies <sup>12</sup> and it was suggested that a relationship existed between the dental anxiety level <sup>13</sup>, previous experience of pain, and the preference of coping strategy <sup>14</sup>.

In another study, Pop-Jordanov et al. <sup>10</sup> examined the psychological impact of dental interventions on the child and the coping strategies children use for stress diminution. They concluded that the three main coping patterns used by children for stress mediation are (a)

developing self-reliance and optimism<sup>15</sup> (b) avoiding problems<sup>16</sup>, and (c) engaging in demanding activity<sup>17</sup>.

Assessing coping style is necessary because knowing the coping styles determines what proportional detail a dentist should put into their communication to make the patient feel more comfortable. Once a dentist assesses the coping styles, it permits him or her to figure out the various treatment options for anxiety reduction with the patient. It would thus ease the mode in which the dental treatment is delivered based on the patient's coping style<sup>6</sup>.

## 5. CONCLUSION

The Monitor-Blunter Dental Scale (MBDS) helps in generating proof-based findings that can inform a clinician about coping with the individual. This tool evaluates the informational coping style, alongside a questionnaire on dental anxiety which helps in knowing the level of anxiety of the child. Thus, it is effective in diminishing a child's dental anxiety using the coping style that a child prefers for his/her own and also helps the dentist to adapt to the child's treatment based on their level of anxiety.

### *Bullet points*

- This study provides a view for knowing the child's coping style which helps them in dealing with the dental anxiety.
- Knowing child's own coping style helps pediatric dentist in communicating with the child.

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