Coping in the chair: A validation study of the Monitoring Blunting Dental Scale

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Abstract

The monitoring-blunting theory of coping in threatening situations (Miller, 1981, 1987) suggests that when faced with a threatening situation, individuals can respond either by attending to threatening information ("monitoring") or by avoiding threatening information ("blunting"). A valid and reliable measure of children's preferred coping styles in dental situations may assist dental staff in providing efficacious anxiety-reducing interventions to diverse groups of children. The current study sought to validate a scale of children's preference for monitoring or blunting in dental situations (the Monitoring Blunting Dental Scale or MBDS). The psychometric characteristics of the scale were assessed in a group of 240 eleven to thirteen year old New Zealand children. Internal consistency reliability was adequate for both the monitoring (α = .743) and blunting (α = .762) subscales. Convergent validity was indicated by strong correlations (> .6) between the MBDS monitoring and blunting subscales and those of an adapted version of the Child Behavioural Style Scale (CBSS-M). Discriminant validity with respect to dental anxiety was strong for the monitoring subscale, r = .079, p = .221, but not the blunting subscale, r = .478, p <.001. Confirmatory factor analysis of the MBDS indicated adequate fit for a two factor monitoring-blunting model (RMSEA = .079), but unacceptable fit for a one factor model (RMSEA = .095). A similar finding was observed when confirmatory factor analysis of the CBSS-M was conducted. These confirmatory factor analyses suggested that the monitoring and blunting theoretical constructs cannot be justifiably regarded as representing poles of a single underlying dimension, but are better regarded as distinct, related constructs. A content analysis of children's comments about the coping strategies they might adopt in several dental scenarios indicated that these strategies were largely classifiable within monitoring-blunting theory, with blunting-type strategies much more commonly mentioned. Given further validity evidence, the MBDS could be a useful measure when attempting to tailor anxiety-reducing interventions in dental settings to children with diverse coping preferences.

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Approval was obtained for this study from the Massey Human Ethics Committee (MUHEC Southern A 09/37).

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Abbreviations

ADF	Asymptotically Distribution-free Estimator; a model estimation method (and discrepancy function) for estimating structural equation models.
AMOS	A computer program used to evaluate structural equation models; short for Analysis of Moment Structures (Arbuckle, 2008).
CBSS	Child Behavioural Style Scale (Miller, Roussi, Caputo, & Kruus, 1995). An adapted version of the CBSS was used in the current study (CBSS-M).
CBSS-M	Child Behavioural Style Scale – Medical situations (an adaptation of the CBSS for the current study).
CFA	Confirmatory Factor Analysis.
CFI	Comparative Fit Index, a measure of the goodness of fit of a given SEM model in comparison to a null model for the same dataset (usually an independence model, with zero population correlations between variables).
CFSS-DS	Children's Fear Survey Schedule – Dental Subscale (Cuthbert & Melamed, 1982).
DAS	Dental Anxiety Scale (Corah, 1969).
DMFS	Decayed/Missing/Filled Surfaces (a "global" measure of oral health; the sum of a subject's decayed, missing and filled tooth surfaces).
DMFT	Decayed/Missing/Filled Teeth, a simpler and more commonly reported global oral health index; applies to whole tooth counts rather than tooth surfaces.
EFA	Exploratory Factor Analysis.
IRT	Item Response Theory, a paradigm for the design and analysis of psychometric tests.
KMO	Kaiser-Meyer-Olkin measure of sampling adequacy, a measure of the appropriateness of a correlation matrix for factor analysis.

MAR	Missing At Random, an assumption with regard to the process underlying the missing data in a dataset; missingness on a variable is assumed to be unrelated to the level of that variable after controlling for all other variables in the analysis (Allison, 2001).
MBSC	Monitoring and Blunting Scale for Children (Kliewer, 1991; Lepore & Kliewer, 1989).
MBSS	Miller Behavioural Style Scale (Miller, 1987), a general measure of monitoring and blunting coping preferences.
MCAR	Missing Completely At Random, a missing data assumption: probability of missingness is assumed to be unrelated to any study variable.
MCDAS	Modified Child Dental Anxiety Scale (Wong, Humphris, & G. T. Lee, 1998).
MCI	Mainz Coping Inventory (Krohne et al., 2000).
MLE	MLE: Maximum Likelihood Estimation (used here with reference to the maximum likelihood estimator/discrepancy function for CFA/SEM models).
PCLOSE	The p value for the RMSEA test of close fit for a structural equation model (Browne & Cudeck, 1993).
RMSEA	Root Mean Square Error of Approximation, a measure of the goodness of fit of a structural equation model.
SEM	Structural Equation Modelling. CFA models are a subtype of SEM model.
SFPS	Smiley Faces Paper Scale, the dental anxiety measure utilised in the current study; adapted from the computerised Smiley Faces Program (Buchanan, 2005).
SRMR	Standardised Root Mean square Residual, a measure of the goodness of fit of an SEM model.
TMSI	Threatening Medical Situations Inventory, a scale measuring monitoring and blunting preferences in medical situations (van Zuuren, de Groot, Mulder, & Peter, 1996).