



Parenting practices and children's oral health: A structural equation modelling approach

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Keywords:	Caries, Parenting, Oral hygiene behaviour, children
Abstract:	<p>Aim: To evaluate the direct and indirect effects of parenting practices and parent's own oral hygiene on dental caries experience in Indian school children.</p> <p>Methods: School children and their parents (N=1539) of Medak district in the state of Telangana, India were the target population. Parents completed a questionnaire that consisted of questions related to socio-economic status (SES), family structure, the number of children, their own oral hygiene behaviour, and their parenting practices. Parenting practices were assessed using the Parent-Child Relationship Questionnaire (PCRQ). Children completed a questionnaire on tooth brushing frequency, dental visiting and sugar consumption practices to evaluate their oral hygiene behaviour, and underwent a clinical examination for dental caries by a single examiner. Path analysis was used to explore the direct and indirect effects of parent-child relationship, SES and other family level variables on dental caries experience of children.</p> <p>Results: Results from exploratory factor analysis revealed a 2-factor structure of the translated version of the PCRQ (Positive and Power assertion parenting practices). Parent's oral hygiene behaviour was positively ($\beta=0.18$), and power assertion negatively ($\beta=-0.06$) associated with children's oral hygiene behaviours. Families reporting higher SES had children with less dental caries experience ($\beta=-0.10$) and better oral hygiene behaviour ($\beta=0.13$). Power assertion parenting had an indirect effect on dental caries experience ($\beta=0.003$, $p=0.038$).</p> <p>Conclusions: Children had poorer oral hygiene behaviour and higher dental caries experience when they lived in families with lower SES, had parents who used more power assertion parenting practices, and had parents with poorer oral hygiene behaviour.</p>

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51 **Key words:** Parenting; Caries; Children; Oral hygiene behaviour
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Abstract

Aim: To evaluate the direct and indirect effects of parenting practices and parent's own oral hygiene on dental caries experience in Indian school children.

Methods: School children and their parents (N=1539) of Medak district in the state of Telangana, India were the target population. Parents completed a questionnaire that consisted of questions related to socio-economic status (SES), family structure, the number of children, their own oral hygiene behaviour, and their parenting practices. Parenting practices were assessed using the Parent-Child Relationship Questionnaire (PCRQ). Children completed a questionnaire on tooth brushing frequency, dental visiting and sugar consumption practices to evaluate their oral hygiene behaviour, and underwent a clinical examination for dental caries by a single examiner. Path analysis was used to explore the direct and indirect effects of parent-child relationship, SES and other family level variables on dental caries experience of children.

Results: Results from exploratory factor analysis revealed a 2-factor structure of the translated version of the PCRQ (Positive and Power assertion parenting practices). Parent's oral hygiene behaviour was positively ($\beta=0.18$), and power assertion negatively ($\beta=-0.06$) associated with children's oral hygiene behaviours. Families reporting higher SES had children with less dental caries experience ($\beta=-0.10$) and better oral hygiene behaviour ($\beta=0.13$). Power assertion parenting had an indirect effect on dental caries experience ($\beta=0.003$, $p=0.038$).

Conclusions: Children had poorer oral hygiene behaviour and higher dental caries experience when they lived in families with lower SES, had parents who used more power assertion parenting practices, and had parents with poorer oral hygiene behaviour.

Introduction

Globally, it is estimated that 60% to 90% of school children experience dental caries¹, making it one of the ten most prevalent health conditions in the world². Several intricately interrelated determinants predict oral health in children. These can broadly be categorised as child, family and community-level variables³. In particular, parental socio-economic status (SES) and home environment are important family-level predictors of hygiene and diet-related conditions such as dental caries in children^{4, 5}. Parents make choices about health-related practices^{6, 7}, and they also provide an environment that supports the development of specific oral health-related behaviours⁸. Children tend to adopt the behaviour of their parents^{7, 9}, and child health-related behaviour is also shaped through parenting practices¹⁰. Research demonstrates that family relationships are important for the overall development and wellbeing of children¹¹, and the quality of these relationships can also influence health-related behaviour in children¹². However, the majority of the literature on parental determinants of children's dental caries has overlooked the likelihood that family relationships and parenting practices may be important predictors. Instead, most research in the past has been limited to study of family SES, lifestyle, behaviour and demographic factors as correlates of children's dental caries experience⁵.

The comprehensive assessment of oral health outcomes guided by a broader framework including psychosocial attributes has gained importance only recently³. From the limited evidence available a few studies have reported family functioning¹², family relationships¹⁰ and parenting styles¹³ to be associated with dental caries in children, with poorer functioning and relationships related to more dental caries. None of these studies tested a comprehensive model of family-level variables in predicting children's dental caries in a large sample, and none have been conducted in developing countries. Operational pathways of the association between various family-level variables and dental caries were explored using path analysis,

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3 making this the first study to evaluate the direct and indirect effects of several family-level
4 factors, including positive and negative parenting practices, on dental caries experience in
5 children. Based on the empirical research on determinants of dental caries, a theoretical
6 model with plausible pathways was hypothesised (Figure 1). Based on previous research^{3, 4, 9,}
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making this the first study to evaluate the direct and indirect effects of several family-level factors, including positive and negative parenting practices, on dental caries experience in children. Based on the empirical research on determinants of dental caries, a theoretical model with plausible pathways was hypothesised (Figure 1). Based on previous research^{3, 4, 9, 14}, it was hypothesised that family SES, family structure, the number of children, parents' oral hygiene behaviour and parenting behaviours would have direct effects on children's oral hygiene behaviour. Children's oral hygiene behaviour would, in turn, have a direct effect on children's dental caries experience. It was also hypothesised that SES would have direct effects on dental caries experience and parents' oral hygiene behaviour. Also, an indirect effect of parenting behaviours on dental caries experience was hypothesised.

Methods

Ethics approval for this study was granted by the Griffith University Human Research Ethics Committee (DOH/12/14/HREC) and institutional ethics committee of Panineeya Institute of Dental Sciences & Research Centre, Hyderabad, India (00126). Written informed consent was obtained from the parents, approving the participation of their children.

Participants

This cross-sectional study was conducted from May 2014 to March 2015 with school children and their parents of Medak district in the state of Telangana, India being the target population. A representative sample (N=1539) was recruited by a multi-stage random sampling procedure which is described in more detail in previous papers^{15, 16}. In brief, ten subdistricts were randomly selected from Medak district. In the second stage, schools in each subdistrict were randomly selected, proportional to the total number of schools. Sixth-grade children from the selected schools were invited to participate with information sheets and

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3 consent forms being sent to their parents. Only children whose parents provided consent were
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5 considered for inclusion. All parents provided consent for participation of their children.
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9 The sample size used in this study was considered adequate. As observed by Wolf et al.
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11 (2013) a sample size of 450 cases is adequate for the most complex mediating models while a
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13 sample of 30 is adequate for a simple CFA¹⁷. In addition, we have also used G*power to
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15 calculate the minimum sample size required. By using the most conservative effect size of
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17 0.02 with 7 predictors at 95% power and alpha error of 0.5 requires, a sample size of 1099
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19 was required.
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22 ***Data collection***

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24 A parent questionnaire was administered consisting of questions related to tooth brushing
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26 frequency, dental visiting and sugar consumption practices, socio-economic status (SES),
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28 family environment (family structure, and a number of children), and their behaviours when
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30 parenting. The questionnaire booklet carried a note that the preference was for mothers to
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32 complete the survey, with fathers allowed to do so if the mother was illiterate. A
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34 questionnaire was also administered to children consisting of questions related to oral
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36 hygiene behaviour.
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40 ***Oral hygiene behaviour***

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42 Oral hygiene behaviour was assessed using five closed-ended questions. Toothbrushing
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44 frequency was recorded using the question; “How frequently do you clean your teeth in a
45
46 day?” which had three responses (1=less than once, 2=once, and 3=twice or more).
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48 Information on sugar consumption was collected by two questions; “How frequently do you
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50 consume sweet foods between meals in a day?” and “How frequently do you consume sweet
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52 drinks between meals in a day?”, responses to these questions were ‘twice or more’ (1),
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3 'once' (2), and 'rarely or never' (3). The frequency of fresh fruit consumption was recorded
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5 as 'twice or more a day' (3), 'once' (2) and 'rarely or sometimes in a week' (1). Furthermore,
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7 dental visiting practices were scored as the following; 1=never been to the dentist, 2= visited
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9 more than a year ago, and 3= visited a dentist within the last year. A total behaviour score
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11 was formulated for parents and children separately by summing the scores of the five
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13 questions. A higher score represents better oral hygiene behaviour.
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16 17 **SES**

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20 SES of the family was assessed using the Kuppusswamy scale. This composite measure is
21
22 based on the education and occupation of the head of the family, as well as annual income.
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24 The family income dimension of the scale is regularly updated based on the Consumer Price
25
26 Index. The most recent 2015 update was used in this study. A score is allocated to each of
27
28 the dimensions with a total composite SES score calculated by summing the scores of the
29
30 three dimensions. A higher score indicates a higher SES¹⁸.
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33 34 **Family environment**

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37 This involved the assessment of family structure and number of children in the family.
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39 Family structure was categorised as either a single parent family (families with only one
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41 parent and child/children), a nuclear family (families in which only husband, wife and their
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43 children reside) or a non-nuclear family (families in which extended members of the husband
44
45 or wife also reside). It was converted to a dummy variable (0= nuclear or non-nuclear family,
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47 1=Single parent family) for inclusion in the Structural Equation Modelling (SEM) while
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49 number of children was used as a continuous measure.
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52 53 54 **Clinical examination**

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3 Clinical examination for dental caries in the permanent dentition was performed by a single
4 calibrated examiner (SK). Caries experience was quantified in each individual as DFT
5 (Decayed and Filled Teeth)¹⁹. A lesion was considered as carious when it presented with an
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10 unmistakable cavity, undermined enamel, or a detectably softened floor or wall²⁰.

11 12 *Parenting practices*

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16 Positive and negative parenting practices were assessed using the Parent-Child Relationship
17 Questionnaire (PCRQ)²¹. The original English version of the questionnaire was translated
18 into the local language, Telugu, using standard translation procedures²². This was described
19 in more detail in previous papers^{15, 16}. The English version of PCRQ consists of 40 items,
20 grouped under five dimensions: warmth, personal relationship, disciplinary warmth, power
21 assertion, and possessiveness. PCRQ requires the parent to respond to each item on a five-
22 point Likert scale (1=hardly at all, 2=not too much, 3=somewhat, 4=very much, 5=extremely
23 much). Examples of questions for each dimension are: warmth - “How much do you and this
24 child love each other?”; personal relationship - “How much do you and this child give each
25 other a hand with things?”; disciplinary warmth - ‘How much do you give this child reasons
26 for rules you make for him or her to follow?’; power assertion - “How much do you hit this
27 child when he or she has been bad?”; and possessiveness - “How much do you want this child
28 to do things with you rather than with other people?”. Factor analysis was used to examine
29 the structure of this measure and to determine subscales for further analyses.
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48 *Statistical analysis*

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50 SPSS and AMOS (IBM SPSS Statistics for Windows, Versions 22.0., Armonk, NY) were
51 used to conduct statistical analyses. Descriptive statistics are presented as means and
52 percentages. The factor structure of the PCRQ was initially assessed by performing
53 Exploratory Factory Analysis (EFA) on a randomly selected 50% of the sample. This was
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3 then confirmed by Confirmatory Factor Analysis (CFA) on the remaining 50% of the sample.
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5 SEM was conducted to assess the direct and indirect effects of family-level variables on
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7 dental caries experience both directly and indirectly via children's oral hygiene behaviour.
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9 There were three endogenous variables (DFT, children's and parents' oral hygiene behaviour)
10
11 and six exogenous variables in the model. Prior to conducting the primary analyses, the
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13 normality of all the continuous variables was determined by assessing their skewness and
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15 kurtosis. The distributions of most variables departed significantly from the normal
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17 distribution. These measures were transformed using the square root, and the model was then
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19 separately fitted with the non-transformed and the transformed measures. There were no
20
21 substantial differences in the path coefficients, so only the results from the model using non-
22
23 transformed measures are reported in this paper. Bollen-Stine bootstrap adjusted chi-square
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25 (χ^2) was used as the assumption of multivariate normality was violated²³. The direct and
26
27 indirect effects were also tested using bootstrap methods. Bias-corrected bootstrap with 95%
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29 confidence intervals was used to assess the indirect effects^{24, 25}. The fit of the model to the
30
31 data was assessed using the Root Mean Square Error of Approximation (RMSEA),
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33 Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and the Standardized Root Mean
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35 Square Residual (SRMR). The model was considered to have a good fit if RMSEA and
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37 SRMR were less than 0.08. A value of 0.9 or greater for CFI and TLI were considered
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39 indicative of a good fitting model²⁶. A p value of <.05 was considered significant.
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46 **Results**

47 *Background characteristics*

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49 A total of 1800 children and their parents were provided with questionnaires, 1539 completed
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51 questionnaires were returned (response rate of 85.5%), and these children underwent clinical
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53 examination. The majority of questionnaires were completed by mothers (65.1%). The family
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3 related, and behavioural characteristics of the study population are presented in Table 1. The
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5 majority of children were male. Approximately, one-third (31%) of the subjects had one or
6
7 more decayed teeth and the mean caries experience was 0.73 ± 1.37 . The majority of mothers
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9 (73.4%) and fathers (67.1%) had 1-12 years of education. Most of the subjects brushed once
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11 daily (91.9%) and rarely consumed sweet foods (86.6%) and sweet drinks (73.6%) between
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13 meals. Almost 72% of the families had 1-2 children, and 11.7% of the children were living
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15 with single parents.
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18 19 ***Factor structure of PCRQ***

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22 Results from the EFA revealed two parenting practice factors and the fit of the two-factor
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24 structure was confirmed by CFA. Items that belonged to the dimensions of warmth, personal
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26 relationship, disciplinary warmth, and possessiveness loaded highly on the first factor (23 of
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28 the 27 items loaded ≥ 0.41). All of these 27 items on this first factor demonstrated positive
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30 parenting behaviour, and was labelled “positive parenting”. The 13 items belonging to the
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32 dimension power assertion loaded highly on the second factor and reflected negative
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34 parenting behaviours that were coercive and overly controlling. Cronbach’s α for the items
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36 on the positive parenting factor was 0.90, and 0.71 for the items on the power assertion
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38 dimension.
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43 44 ***Results of the path analysis***

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46 Overall, the model fit the data well for the dental caries experience (see Table 2 for fit
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48 indices). In the fitted model with DFT as the primary exogenous variable, Figure 2 and Table
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50 3 show that most modelled effects were significant but small to moderate in size. In
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52 particular, parents' oral hygiene behaviour was positively ($\beta=0.18$), and power assertive
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54 parenting was negatively ($\beta=-0.06$) associated with children's oral hygiene behaviours which
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56 denotes that oral hygiene behaviour was poor in those children whose parents reported higher
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3 power assertion. As hypothesised, families reporting higher SES had children with less dental
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5 caries experience ($\beta=-0.10$) and better oral hygiene behaviour ($\beta=0.13$). The effects of family
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7 structure and number of children in the family on oral hygiene behaviour were not
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9 significant. Also, children's oral hygiene behaviour did not have a significant effect on dental
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11 caries experience. There were also indirect effects in this model. Although the effect was
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13 small, power assertion parenting had an indirect effect on children's dental caries experience
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15 ($\beta=0.003$, $p=0.038$) with children of those parents using more power assertive practices
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17 having greater dental caries experience. Moreover, SES had an indirect effect on children's
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19 oral hygiene behaviour ($\beta=0.035$, $p=0.007$). SES also had a negative effect ($\beta=-0.009$) on
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21 children's dental caries experience which was marginally insignificant ($p=0.075$).
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26 **Discussion**

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28 A path model was tested using SEM to examine how family demographics and positive and
29
30 power assertive parenting practices impact on oral hygiene and dental caries experience in
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32 children. SEM offers a single, comprehensive and systematic method to facilitate
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34 simultaneous assessment of relationships (direct and indirect) between several dependent and
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36 independent variables²⁷.
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40 Factor analyses of the PCRQ²¹, which was translated for use in this study, was found to have
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42 two factors - one assessing positive parenting practices (positive parenting) and one assessing
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44 negative practices (power assertion parenting). The internal consistency of these two factors
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46 was good, having Cronbach's α s comparable to those reported by the scale authors²¹.
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50 It was found that parents' oral hygiene behaviour influenced children's oral hygiene
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52 behaviour positively in accordance with existing literature^{9, 28, 29}. This finding confirms that
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54 health-related behaviour in children is influenced by parent's health behaviour among a
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56 myriad of other determinants including parenting practices³⁰. Thus, children seem to model
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3 the behaviour of their parents or parents who have poorer health behaviour may fail to
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5 instruct their children in the needed behaviours to maintain good oral health.
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9 The findings for parenting practices as a correlate of children's oral hygiene behaviour and
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11 dental caries experience in the present study support this latter notion. Although positive
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13 parenting did not have any effect in our multivariate model, power assertion parenting had a
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15 negative effect on children's oral hygiene behaviour. This suggests that parents who use more
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17 negative practices may not be as effective in helping their children to learn good health
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19 behaviour. For example, research on feeding behaviours and parenting suggests that parent-
20
21 child relationship influences the autonomy given to the child in eating^{31, 32}. Although there is
22
23 limited literature on the effect of parenting practices on oral hygiene behaviour, parenting
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25 practices have been found to be associated with oral hygiene behaviour. For example,
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27 'perceived fair parenting' and 'close relationship to the parents' were found to be associated
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29 with adolescents' better toothbrushing practices⁷. Another study found that adolescents report
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31 less intake of sugared foods when they receive more parental support, and adolescents are
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33 less likely to smoke when they report more support and monitoring by parents⁹.
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38 We also found that power assertive parenting had an indirect effect on higher dental caries
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40 experience which might be via poorer oral hygiene behaviour. Future research should
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42 examine whether the association between power assertive parenting and dental caries is also
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44 mediated through psychosocial factors. Previous research³³ indicates that the effects of
45
46 parenting practices on oral health outcomes in adulthood might be mediated through
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48 psychosocial factors which were not considered in the present study, such as sense of control,
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50 social support, chronic stress and life satisfaction.
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54 It was surprising that, once all other model associations were accounted for, children's oral
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56 hygiene behaviour failed to have a significant, direct effect on dental caries experience.
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3 Future research should include additional predictors (e.g. fluoride exposure) in a model
4 predicting children's dental caries. It may be that these additional predictors would further
5 help to explain dental caries experience.
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10 Although no previous studies have used path analysis to evaluate the effect of parenting
11 practices and children's oral hygiene behaviour on oral health outcomes, evidence from the
12 literature confirm that power assertive parenting is associated with poor oral health outcomes
13 in children such as higher levels of dental caries experience¹⁰, gingival bleeding³⁴, traumatic
14 dental injuries³⁵, and also periodontal disease in adulthood³⁶. However, the present study
15 significantly adds to these findings by being the first to use a validated measure of parenting
16 practices, to include a large sample of both parents and children, and to examine the
17 mediating effect of oral hygiene behaviour on clinical outcomes. For example, some past
18 research has used the Parenting Styles and Dimensions Questionnaire (PSDQ)^{13, 37, 38}, which
19 only provides categories of parenting styles rather than providing information about specific
20 levels of parenting practices. Measuring levels of specific types of parenting practices allow
21 for the type of model testing done here and also provides information about parenting
22 practices that may be more amenable to intervention.
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40 It is also important to emphasise the findings for SES. Even after accounting for parenting
41 practices and parents' own hygiene behaviours, SES had a direct effect on dental caries
42 experience with children living in families with higher SES having lower caries experience.
43 In a previous systematic review, it was found that parental SES has a significant impact on
44 dental caries experience of children⁵. One of the interesting findings of the present study was
45 that SES had significant direct effects on both parents' and children's oral hygiene behaviour
46 and also on children's dental caries experience. We also found that SES had an indirect effect
47 on children's oral hygiene behaviour, which was partly mediated through parents' oral
48 hygiene behaviour.
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3 Other family demographic information failed to add much prediction in our model. Contrary
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5 to our hypotheses that children of single parents and from families with a larger number of
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7 children would present poor oral hygiene behaviour due to limited attentional^{4, 5} material
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9 resources respectively, family structure and number of children failed to have an effect on
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11 children's oral hygiene behaviour or dental caries experience. Findings from recent
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13 systematic reviews indicate that family structure and number of children have significant
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15 effects on early childhood caries, but not on the permanent dentition in children^{4, 5}. Our
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17 findings suggest that these factors may be less important once SES, parenting practices, and
18
19 parents' own hygiene behaviours are considered in a comprehensive model.
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24 There are some limitations of the present study. We could not assess the effect of societal
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26 factors as it was limited to one region with similar societal circumstances. Another limitation
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28 was not to consider parent's psychosocial measures such as a sense of coherence and health
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30 locus of control which have also been associated with oral health outcomes in children¹⁴.
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32 Future studies on a larger representative population from diverse geographic regions with the
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34 inclusion of comprehensive psychosocial measures are recommended. Although, both the
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36 parent and child questionnaires were kept anonymous, the data obtained was self-reported
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38 and would have been subjected to socially acceptable reporting. Based on the findings it is
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40 evident that not only the parental characteristics like SES but also the parenting practices and
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42 parent's oral hygiene behaviour, have an effect on the dental caries experience. As literature
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44 supports that parenting practices and parent's health behaviours also influences other health-
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46 related behaviours, the findings from this study strengthen the importance of the common risk
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48 factor approach³⁹. This offers more opportunities for planning effective health promotion
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50 programs using the common risk factor approach by focusing attention on parents and
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52 parenting practices to help parents to reduce power assertion strategies and increase support
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54 of their children in their oral health behaviours. This might be done by partnering with
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3 parenting specialists or other allied health professionals who have expertise in parenting
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5 interventions and advice⁴⁰.
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10
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Table 1: Family-related and behavioural characteristics of the study population

Variables	N (%)
Gender	
Male	915 (59.5)
Female	624 (40.5)
Father's education	
Graduate/post graduate/professional	393 (25.5)
1-12	1033 (67.1)
Illiterate	113 (7.4)
Mother's education	
Graduate/post graduate/professional	253 (16.5)
1-12	1130 (73.4)
Illiterate	156 (10.1)
Father's occupation	
Semi-profession/Profession	137 (8.9)
Semi-skilled/skilled/self-employed	1039 (67.5)
Unemployed/unskilled	363 (23.6)
Mother's occupation	
Semi-profession/Profession	3 (0.2)
Semi-skilled/skilled/self-employed	505 (32.8)
Unemployed/unskilled	1031 (67.0)
Family annual income	
>19587 INR	272 (17.7)
9793-19586 INR	456 (29.6)
>9792 INR	811 (52.7)
Teeth cleaning frequency	
Once/day	1415 (91.9)
Twice or more/day	117 (7.6)
Rarely/sometimes in a week	7 (0.5)
Frequency of sweet consumption between meals/day	
Once	130 (8.4)
Twice or more	76 (4.9)
Rarely or never	1333 (86.6)
Frequency of sweet drinks consumption between meals/day	
Once	327 (21.2)
Twice or more	80 (5.2)
Rarely or never	1132 (73.6)
Frequency of fresh fruits consumption in a day	
Once	271 (17.6)

	Twice or more	89 (5.8)
	Rarely or sometimes in a week	1179 (76.6)
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Dental visits		
	Never been to dentist	1269 (82.5)
	Visited more than a year ago	119 (7.7)
	Visited within the last year	151 (9.8)
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Number of children in the family		
	1-2 children	1107 (71.9)
	>2 children	432 (28.1)
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Family structure		
	Single parent families	180 (11.7)
	Other family types	1359 (88.3)

INR- Indian Rupees

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Table 2: Fit statistics for the path analysis of DFT

Model #	χ^2 (p-value)	CFI	TLI	RMSEA	SRMR
1	4.687 (0.321)	0.999	0.990	0.011	0.0088

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Table 3: Standardised bootstrapped estimates for direct effects in the final model of DFT

Effect	β	Boot- strapped SE	Bias corrected 95% CI	P
Predicting child oral hygiene behaviour				
Positive parenting	0.036	0.030	-0.032 - 0.091	0.289
Power assertion parenting	-0.057	0.027	-0.108 - 0.005	0.041
Parent oral hygiene behaviour	0.180	0.028	0.130- 0.238	0.009
Socioeconomic status	0.131	0.029	0.074- 0.187	0.009
Number of children	-0.014	0.023	-0.066 - 0.030	0.523
Family structure	-0.035	0.023	-0.080 - 0.007	0.113
Predicting parent oral hygiene behaviour				
Socioeconomic status	0.195	0.027	0.137 - 0.243	0.012
Predicting DFT				
Child oral hygiene behaviour	-0.052	0.029	-0.106 - 0.010	0.120
Socioeconomic status	-0.104	0.023	-0.143 - 0.045	0.028

Significant p values are marked in bold font

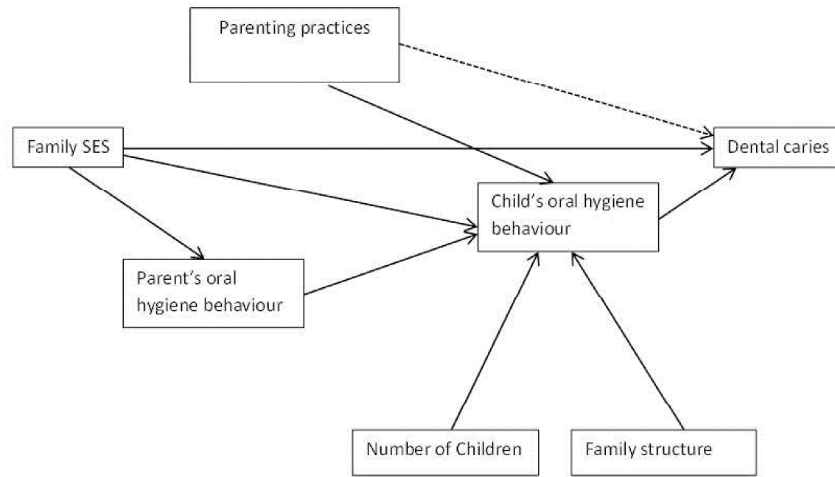
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3 **Figure legends**
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6 Figure 1: Conceptual framework depicting direct and indirect effects of family related
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8 determinants on dental caries in children (solid lines denote hypothesised direct effects, and
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10 dashed line represent hypothesised indirect effect)
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13 Figure 2: Path analysis with standardised bootstrapped estimates of the conceptual model of
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15 decayed and filled teeth in the permanent dentition
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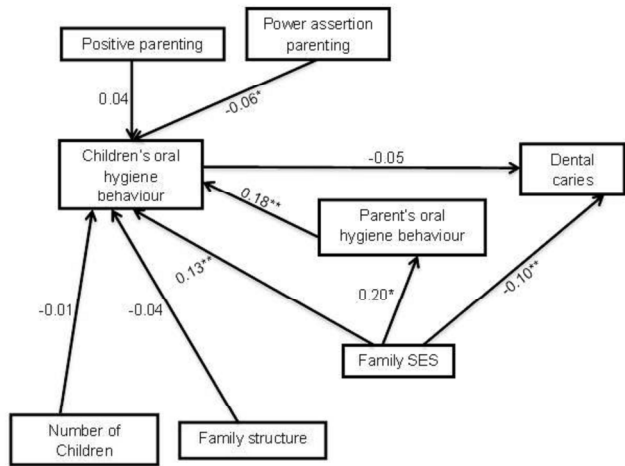
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Bootstrapped parameter estimates. Covariances and error terms are not presented for ease of understanding.
*p < 0.05, **p < 0.01

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