

The only child: candidate for increased dental care

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Abstract

This study was conducted to evaluate the oral health characteristics (DMF-T and OHI-S) of the only child in comparison with first-born and last-born children. Analysis of covariance revealed that the only child had significantly poorer DMF-T rates than the first- and last-born child. Though not significant, OHI-S scores were in the same direction as the DMF-T scores.

Overindulged, selfish, lonely and manipulative: these terms have been used to characterize the only child. Negative statements regarding the only child can be found in the literature dating to one of Freud's nineteenth-century colleagues.¹ A prominent psychologist of the early twentieth century, G. Stanley Hall, has been quoted as saying, "Being an only child is a disease in itself."²

Although only children continue to be perceived in a negative fashion, there is little evidence to either support or debunk the popular stereotypes. Few researchers have chosen to study the only child, and the validity of many of the available findings is questionable. Reviews of the literature on family size³ and only children⁴ confirm methodological weaknesses in research on only children. The primary methodological problem has been the failure of researchers to differentiate between the only child and first-born children in research design and data analysis. Therefore, many findings attributed to the only child also represent those attributed to first-born children. Whether this methodological weakness can be attributed to lack of interest in only children, unfounded assumptions that no differences exist between only and first-born children, or other reasons for this oversight, the fact remains that many findings attributed to the only child have been interpolated from research on first-born children.

In addition to the methodological problems with research on only children, researchers appear to have focused on intellectual and psychological variables to the exclusion of health care behaviors. This study was designed to provide empirical data regarding the oral health

characteristics of only children. While the popular perception of only children has been generally negative, researchers have attributed a number of positive characteristics to only children. The literature on birth order describes only children as conscientious,⁵ oriented to task mastery,⁶ and expected to behave more maturely than children with siblings.³

In each case, the authors' descriptions appear to be based on observation or speculation rather than research data. However, the literature on psychological and behavioral characteristics of only children provides a consistent basis for hypothesizing that only children would practice good oral hygiene and thus receive positive evaluations on measures of oral health. This expectation was further supported by the assumption that parents of only children could better afford the time and money to provide good dental care. The research design of this study provided comparisons among only, first-born, and last-born children on selected demographic characteristics as well as oral health status. This design represents a significant methodological departure from earlier studies that have equated only children with first-born children.

Methods and Materials

All subjects were new patients at the Pedodontic Clinic of the Medical College of Virginia School of dentistry. Subjects included 20 only children, 21 first-born children, and 27 last-born children between the ages of 5 and 11 years. The lower age limit was established to insure that only children would have experienced at least five years without siblings and that all subjects would have the ability to respond to questions and commands. In addition to age requirements, each subject had no serious medical or physical handicaps, e.g., cerebral palsy, mental retardation, organic heart disease, or blood dyscrasias. The only child was defined as one who is at least five years old and who has never had any brothers or sisters. The first-born child was defined as one who is at least five years old and who is the oldest child in a multiple-child family. The last-born child was defined

as one who is at least five years old, has at least one older sibling, and no younger siblings. Any adopted children were eliminated from the study. In order to eliminate the possibility of family bias, none of the subjects were related, i.e., the 68 subjects represented 68 different households.

Two measures of oral health, a Modified Simplified Oral Health Index (OHI-S)⁷ and the Decayed, Missing, and Filled tooth rate (DMF-T)⁸ were completed for each child during the initial appointment. The OHI-S scoring system was used only to identify plaque (through the application of a disclosing solution). Each case was assessed on a scale of zero to three, with three indicating the poorest oral hygiene score. DMF-T rate was based on the number of decayed, missing, or filled teeth and was recorded without the use of radiographs. The higher the scores on these two measures, the poorer the oral health of the subject. An experienced dentist who has conducted DMF-T research sponsored by the National Institute of Health trained the examiner for this study. To establish the reliability of the procedure, the trainer randomly selected cases for review and validated the accuracy of the examiner. In addition, the examiner was naive regarding the birth order of the children examined.

Personal and demographic information acquired during a parental interview provided data for computation of Hollingshead's two-factor index of social position,⁹ an index based on occupation and education. Statistical comparisons of OHI-S and DMF-T scores were made among only, first-, and last-born children. Analysis of covariance controlled for the effects of age, sex, race, and socioeconomic status.

Results

As shown in Table 1, analysis of covariance revealed significant differences ($p < .03$) on DMF-T rates among only, first-, and last-born subjects.

Table 2 presents both DMF-T and OHI-S means for the three birth order groups. While only the DMF-T rates among only, first-, and last-born children were found to be statistically different, both measures showed that only children had the highest (poorest) scores, and first-born children had the lowest (best) scores of the comparison groups.

Discussion

Although previous research provided a weak foundation for making predictions on the outcome of this study, only children were expected to have better oral health than children with brothers or sisters. This prediction was based on research showing behavioral factors that have been attributed to the only child previously, e.g., conscientiousness,⁵ task mastery,⁶ and socialization for competence skills.¹⁰

In addition, it is commonly assumed that parents of only children can better afford preventive care and have

more time to devote to personal hygiene instruction. Therefore, the results of this study are surprising in that only children were found to have significantly higher rates of decayed, missing, or filled teeth than first- and last-born children. Additionally, the results of this study suggest that first- and last-born children are more similar on measures of oral health than only and first-born children. This finding underscores the importance of treating only and first-born children as separate groups in future research. The presence of a sibling in the family appears to affect parental instruction and/or enforcement of oral health practices.

The surprising finding that only children exhibit significantly poorer oral health deserves careful analysis. Since statistical procedures controlled for the effects of age, sex, race, and socioeconomic status, other explanations deserve exploration. One such explanation would exploit the popular stereotype of only children as over-indulged and manipulative children who have greater access to caries-producing agents, who avoid developing good brushing and flossing habits, and who may avoid regular dental visits.

Alternative explanations focus on the level of parental expectations and the absence of peer tutoring. It has been proposed that child-rearing practices may differ qualitatively from only to multiple-child families, e.g., only children may be expected to behave more maturely³ and are more likely to be treated as parental companions.¹ As a result, unrealistic expectations imposed on only children may result in unintentional neglect of areas such as instruction in self-care. Rosen's observation that children in large families receive greater instruction in self-care¹⁰ reflects qualitative differences in child rearing that may be reflected in the results of this study.

Table 1. Analysis of Covariance of DMF-T Scores

	Sum of Squares	Degrees of Freedom	Mean Square	F
Birth Order	95.039	2	47.520	3.93 *
Sex	.848	1	.848	.07
Age	41.065	1	41.065	3.40
SES	2.061	1	2.061	.17
Error	664.372	55	12.079	

* $p < .03$

Table 2. DMF-T and OHI-S Means for Only, First- and Last-Born Children

	DMF-T			OHI-S	
	n	Mean	SE	Mean	SE
Only Children	20	6.45*	.79	1.42	.11
First-Born Children	21	3.62	.87	1.10	.12
Last-Born Children	27	3.83	.76	1.12	.10

* $p < .03$

Expectations for mature behavior can contribute to success in many areas, but such expectations can also have the potential for failing to produce mastery of fundamental skills. In addition, as compared to the first-born who is also a frequent recipient of unrealistic adult expectations, the only child does not have the learning opportunities afforded by tutoring a younger sibling. Explanations for better oral health observed in first-borns may be analogous to explanations proffered for the higher intelligence scores also found in this group. In reference to intelligence scores, Falbo stated that one of the reasons why only children fail to score as well as first-borns is that they lack a younger sibling to tutor.

While it is evident that specific child-rearing practices contributing to the poorer oral health of only children have yet to be identified, the results of this study provide evidence that only children are characterized by poorer oral health than children with siblings. These findings have practical implications for the dental practitioner. At a minimum, identification of an only child should alert dentists to take preventive precautions. Specifically, it is suggested that the dentist make certain that only children can demonstrate proper brushing and flossing skills and can verbalize a thorough knowledge of principles and practices of good oral health. Dentists also should involve parents of only children in the process of patient education and encourage the parent to provide appropriate follow-up at home. Finally, the dentist should emphasize to the parent the importance of having only children receive regular dental examinations and the particular value of this practice for the only child.

Conclusions

The findings of this study indicate that only children are more likely to have a statistically significant poorer

DMF-T than children with siblings. Though not statistically significant, OHI-S data provided support for this finding. The implications of these results suggest a greater need for dentists and parents to provide oral hygiene instruction and follow-up, and regular dental treatment for only children.

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