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The relationship between parents' body images of themselves and the oral health of their child

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Abstract

The purpose of this investigation was to study the relationship between parents' body images of themselves and the oral health of their children. The total sample for this investigation consisted of 70 patients (ages three to 12 years). One of each child's parents or guardians also participated in this investigation. The parental body image scores were computed by use of the Semantic Differential Test and the Body-Cathexis Test. The children's oral health was evaluated by utilizing an oral hygiene index, a gingival health score, and a dental analysis reported as decayed, missing and filled primary and permanent teeth. The results of this investigation indicated that there is a correlation between parents' body images of themselves and the oral health of their children. A statistically significant relationship was found at the .001 level.

Introduction

The dental literature contains many studies supporting the view that diet and nutrition play an important role in dental health. Despite the evidence indicating the importance of diet and nutrition to dental health, little time may be spent with the parent or patient regarding diet and nutrition because a person's diet is a complex entity. Dietary choices are influenced by factors such as daily schedules, physiological make-up, emotional state, family tradition, religion, culture, geographic location and past experience.

The prevention of dental disease by the dentist depends in part on how these influences affect the child as well as the parents. Dental disease needs to be considered as not only a physiological disease, but also as a psychological disease which is heavily influenced by the local society. These influences have been previously discussed and described by Nizel.[1]

If a dentist is concerned with the role of diet and nutrition and the patient's eating habits in the prevention service, then he must determine the "why" as well as the "what" of his patients' diets. The problem is compounded when treating children because it is not the patient but the parent who is responsible for the selection and preparation of dietary foods. Numerous variables affect the choices of foodstuffs. To control, or make changes in the diet through educational measures, the two areas upon which attention must be concentrated are the child and the "why" of the diet. The purpose of this investigation, therefore, was to study the relationship between parents' body images

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of themselves and the oral health of their children. This single variable, body image, was chosen because the way a person views herself or himself could influence what she or he eats, and thus would influence the dental health. Body image is a relatively new psychological concept and literature is lacking in studies investigating its relationship to dentistry.

The classic and most frequently quoted definition of body image is that of Schilder.[2] He stated, "body image is the picture of our own body which we form in our mind, that is to say the way in which the body appears to ourselves." The findings of Olgas[3] established the view that body image is a transferable concept between parent and child. The fact that a parent has a positive or negative body image will be conveyed to the child and this in turn will affect the child's actions in many matters.

Investigations relating a person's knowledge, attitude and behavior toward dental health suggest that a stable change in behavior will occur only if a person's attitude toward health is changed.[4,5] This leads one to believe that research in the area of body image could be a valuable tool in the study of a person's attitudes.

Methods and Materials

The total sample for this investigation consisted of 70 patients (37 females and 33 males) chosen at random from the Pedodontic Clinic of the University of Nebraska College of Dentistry. The children ranged in age from three to 12 years. One of each child's parents or guardians also participated in the study.

The consent of the parents or guardians to participate in this investigation was obtained. The parents or guardians were given a packet of questionnaires used to determine their own body image. This packet consisted of the Semantic Differential Test[6] and the Body-Cathexis Test.[7] The instruction sheet was read to each participant and if any questions ensued, they were answered. The parent or guardian then completed the questionnaires.

The Semantic Differential and the Body-Cathexis Tests were scored by the methods described by Osgood *et al.*[6] and Secord and Jourard[7] respectively. The body image scores were computed by combining the score obtained on the Semantic Differential and Body-Cathexis Tests.

A modification of the Greene and Vermillion[8] OHI-S was used to determine the oral hygiene index score. The gingival health index was determined by using a modification of the gingival index of Loe.[9] The dental status of each child was determined from a clinical examination and two bitewing radiographs. The results of these examinations were recorded as DMFT and deft as described by Russell[10] and Gruebbel[11] respectively.

The child's total oral health score was tabulated by adding the scores of the oral hygiene index, gingival health index, and the DMFT/deft.

From the data collected via the Semantic Differential Test, the Body-Cathexis Test, and the child's oral health evaluation forms, eleven dependent variables were examined. These variables were as follows:

1. Parent's semantic differential body image score
2. Parent's body-cathexis body image score
3. Parent's total body image score
4. Parent's semantic differential "my teeth" score
5. Parent's semantic differential "my smile" score
6. Parent's body-cathexis "teeth" score
7. Parent's body-cathexis "smile" score
8. Child's DMFT or deft score
9. Child's gingival health score
10. Child's oral hygiene score
11. Child's total oral health score

The Pearson Product Moment Correlation was used to describe statistically the relationship between these scores.[12]

Results

Table 1 presents the correlations between the scores for body image and the scores for oral health.

The major correlation to be tested in this study was that of the total body image of the parent with total oral health of the child. As the table indicates, it was found to be significant: $r = 0.4114$. This is significant at the .001 level.

Table 1. Pearson correlation coefficients of key variables

V_1 = Semantic Differential Body Image Score
V_2 = Body-Cathexis Body Image Score
V_3 = Total Body Image Score
V_4 = Semantic Differential "My Teeth" Score
V_5 = Semantic Differential "My Smile" Score
V_6 = Body-Cathexis "Teeth" Score
V_7 = Body-Cathexis "Smile" Score
V_8 = Child's DMFT or Deft Score
V_9 = Child's Gingival Health Score
V_{10} = Child's Oral Hygiene Score
V_{11} = Child's Total Oral Health Score

	V_1	V_2	V_3	V_4	V_5	V_6	V_7
V_8	-0.3787	-0.1641	-0.3258	-0.3766	-0.3397	-0.0893	-0.1719
	(70)	(70)	(70)	(70)	(70)	(70)	(70)
	S=0.001	S=0.089	S=0.003	S=0.001	S=0.002	S=0.233	S=0.079
V_9	-0.3128	-0.1137	-0.2599	-0.3730	-0.2130	-0.1545	-0.1095
	(70)	(70)	(70)	(70)	(70)	(70)	(70)
	S=0.004	S=0.176	S=0.016	S=0.001	S=0.039	S=0.102	S=0.185
V_{10}	-0.4109	-0.3258	-0.4159	-0.3826	-0.3119	-0.4124	-0.3547
	(70)	(70)	(70)	(70)	(70)	(70)	(70)
	S=0.001	S=0.003	S=0.001	S=0.001	S=0.005	S=0.001	S=0.001
V_{11}	-0.4589	-0.2452	-0.4144	-0.4609	-0.3772	-0.2350	-0.2594
	(70)	(70)	(70)	(70)	(70)	(70)	(70)
	S=0.001	S=0.021	S=0.001	S=0.001	S=0.001	S=0.026	S=0.016

The correlation between the parent's own body image and the individual oral health variables were as follows:

1. The child's oral hygiene score (r = 0.4159)
2. The child's DMFT or deft score (r = 0.3258)
3. The child's gingival health score (r = 0.2599)

All of these correlations were found to be statistically significant.

Two questions had been selected *a priori* from each testing instrument as being the most likely predictive questions. In the course of the statistical analysis it was determined that the Semantic Differential Test showed the highest degree of reliability and validity. The *a priori* questions from the Semantic Differential Test were: "my teeth" score and "my smile" score.

The correlation of "my teeth" to total oral health was found to be r = 0.4609. This is statistically significant at the .001 level. The correlation of "my smile" to total oral health was found to be r = 0.3772. This too was statistically significant at the .001 level.

The correlations between "my teeth" scores and the individual oral health variables were as follows:

1. The child's oral hygiene score (r = 0.3826)
2. The child's DMFT or deft score (r = 0.3766)
3. The child's gingival health score (r = 0.3730)

All of these correlations were found to be statistically significant at the .001 level.

The correlations between "my smile" scores and the individual oral health variables were as follows:

1. The child's oral hygiene score (r = 0.3119)
2. The child's DMFT or deft score (r = 0.3397)
3. The child's gingival health score (r = 0.2130)

The oral hygiene score and the DMFT/deft score correlations were statistically significant. The gingival health score was not statistically significant to "my smile."

The children's oral conditions observed in the study were quite varied. The ranges in the individual oral health variables were as follows:

1. Oral hygiene score 0-9 (with 9 being the maximum possible score)
2. DMFT or deft score 0-19
3. Gingival score 0-6 (with 6 being the maximum possible score)

Discussion

Diet and nutrition plays a major role in the etiology and progression of oral disease. Diet, however, is a very difficult entity to control. Food choices are influenced by many internal and external stimuli. Dentists who have attempted to modify dietary patterns have realized that these eating habits are difficult to change. If a dentist is to influence a person's diet and nutrition, the "why" of the diet must be examined as well as the "what" of the diet. Thus the present investigation studied the relationship between parent's body images of themselves and the oral health of their child.

The results indicated that there is a positive correlation between parents' body images of themselves and the oral health of their child. A statistically significant relationship was found at the .001 level. This suggests that a positive correlation does exist between how parents "view themselves" and the oral health of their child. If the self image is "positive," they may be more likely to have a diet conducive to developing or maintaining a healthy body. The diet the parent consumes will generally be the basic diet the child consumes.

The body image the parent has is a transferable concept.[3] The child's own body image is thus influenced by the body image of the parent. The child's oral health can be influenced by the parent's own body image in this manner as well.

The correlations between the parent's own body image related significantly in descending order to the following:

1. The child's oral hygiene score ($r = 0.4159$)
2. The child's DMFT or deft score ($r = 0.3258$)
3. The child's gingival health score ($r = 0.2599$)

There are several possible explanations for the correlation between parental body image and the child's oral hygiene being the greatest. If a person has a positive body image, she or he may have dietary habits which result in the child not having access to many foods which are conducive to plaque formation and tooth accumulating material deposition.

A second possible explanation for the correlation between body image and oral hygiene scores is that if a person views her or himself positively, they may encourage the child to exercise health maintaining habits. These would include tooth brushing and dental flossing, both of which improve the child's oral hygiene.

A correlation of 0.4609 was found between the way the parents "viewed their teeth" as determined by the Semantic Differential Test and the child's total oral health score. This is significant at the .001 level. It appears that if the parent views their teeth as being important, they will see to it that the child has a healthy oral condition.

Although there are highly significant correlations between several variables in this study, one must remember that it was a correlational analysis, and one must refrain from making "cause and effect" statements.

Conclusion

The purpose of this investigation was to study the relationship between the parent's body image of her or himself and the oral health of their child.

The study population consisted of 70 patients (ages three to 12 years). One of each child's parents or guardians also participated in this investigation.

The parents completed the Semantic Differential Test and the Body-Cathexis Test. The parental body image scores were computed by combining the scores obtained by the two testing instruments. The children's oral health was evaluated by utilizing an oral hygiene index, a gingival health score and a dental analysis reported as DMFT or deft.

The results of this investigation were as follows:

1. There is a statistically significant correlation between parents' body image of themselves and the oral health of their child.
2. The greatest correlation was found between the parent's body image and the child's oral hygiene score.

3. The next greatest correlation was between the parent's body image and the child's DMFT or deft score.

4. The lowest, yet statistically significant, correlation was between the parent's body image and the child's gingival health score.

5. A highly significant correlation was found between the way the parents "viewed their teeth" as determined by the Semantic Differential Test and the child's total oral health score.

This investigation verified the hypothesis formulated for this study. The findings indicated there is a statistically significant correlation between the body image of a parent and the oral health of the child.

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