

Correlation of maternal parenting style with behavior in maintaining oral hygiene of children with type 1 diabetes mellitus

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Abstract

Background: Type-1 diabetes mellitus is a chronic disease which management is complex and full of challenges, especially when it occurs during childhood and adolescence. Furthermore, with the presence of complications from type-1 diabetes mellitus, including complications related to dental and oral health, appropriate prevention and management strategies are needed. Parents, especially mothers, have an important role in children's lives, such as caring for and teaching children about oral health, maternal behavior in maintaining dental hygiene is a factor in shaping children's dental health, so that good parenting style can maintain the health of the oral cavity of type-1 DM children.

Objectives: This study aims to analyze the relationship between maternal parenting style and maternal behavior in maintaining oral hygiene of type-1 DM children in Malang City.

Methods: This study was a cross sectional analytic observational study consisting of 35 parents whose children had type-1 DM at Saiful Anwar Hospital. The instrument used was PSDQ questionnaire.

Results: The correlation test between maternal parenting and oral hygiene behavior of children with type-1 DM obtained a Pearson correlation coefficient of 0.560 with a significance value of <0.001.

Conclusion: There is a significant relationship between maternal parenting variables and behavior in maintaining oral hygiene of children with type-1 DM in children with type-1 DM in Malang City.

Keywords: Type-1 diabetes mellitus; Maternal Parenting; Oral Health Behavior; Children

1. Introduction

Diabetes mellitus affects not only adults, but also children. The type of DM that often occurs in children is type-1 DM, which is DM that is motivated by damage to pancreatic beta cells due to an autoimmune process, causing absolute insulin deficiency. Based on data there were 1,220 children with type-1 DM in Indonesia [1]. Many factors contribute to the pathogenesis of pediatric type-1 DM, including genetic, epigenetic, environmental and immunologic factors. However, the specific role of each factor in the pathogenesis of type-1 DM remains unclear. Education plays an important role in the management of type-1 DM as there is strong evidence that it is associated with glycemic control and psychosocial outcomes. In some literature, it is mentioned that parenting and maternal behavior have a significant relationship in children in enhancing the developmental phase of traits and habits [2-3].

Parenting plays an important role in changing bad habits for children's health. Baumrind argues that in principle parenting is parental control, in order to guide and assist their children to carry out developmental tasks [4]. Maternal behavior in maintaining children's oral hygiene is also a factor in shaping children's health, the behavior in question

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includes implementing a good diet for children's oral health, involvement in children's dental care (ex: brushing teeth), and visits to dental health services as an effort to prevent and treat children's oral health problems, including caries and other oral diseases that occur in children with type-1 diabetes mellitus [5].

2. Material and methods

The population in this study were all members of the population, namely 35 parents who had children with type-1 diabetes mellitus (the age range of children 6-16 years), were willing to become research respondents, and had filled out informed consent. Data collection was carried out starting in November 2023.

This study examines maternal parenting using the PSDQ questionnaire using a 4-point Likert scale, which is assessed on an interval scale, looks at maternal behavior in maintaining oral hygiene for children with diabetes mellitus type-1 and assesses maternal attitudes and beliefs in maintaining children's oral hygiene, availability of information and facilities about oral hygiene, and social support from the neighborhood. Predisposing characteristics that influence maternal behavior were also considered. These characteristics include demographics such as age group, employment status, household income of parents, children age, and duration of T1DM, all of which were measured on an ordinal scale. Overall, this study used various measurement tools, mainly using questionnaires with Likert and numerical scales, to comprehensively evaluate maternal parenting, behaviors, and predisposing factors that impact the management of oral hygiene in children with type-1 diabetes mellitus.

3. Results and discussion

Table 1 Frequency distribution of sample characteristics

Characteristics		N	Percentage (%)
Mother Age	25-35	5	14.3%
	36-45	17	48.6%
	46-55	11	31.4%
	56-65	2	5.7%
Employment Status	Housewife	25	71.4%
	Employee	3	8.6%
	Self-employed	7	20%
Income	> Minimum Wage	12	34.3%
	Minimum Wage	5	14.3%
	< Minimum Wage	18	51.4%
Children Age	5-11	13	37.14%
	12-16	22	62.86%
Duration of T1DM	> 4 years	23	65.7%
	< 4 years	12	34.3%
Maternal Parenting Style	Authoritative	25	71.4%
	Authoritarian	1	2.9%
	Permissive	9	25.7%
Attitude and Beliefs	Moderate	17	48.6%
	Good	18	51.4%
Information and Facilities	Moderate	11	31.4%
	Good	24	68.6%

Social Support	Moderate	11	31.4%
	Good	24	68.6%
Maternal Management Oral Behavior	Moderate	18	51.4%
	Good	17	48.6%

Source: Researchers' survey, 2023.

Table 1 shows that the majority of mothers are aged 36-45 years, as many as 17 people (49%). Most of the respondents' occupations are housewives, as many as 25 people (71%). Most respondents' income is below the minimum wage, totaling 18 people (51%). The age of most respondents' children was 12-16 years old, totaling 22 people (37%). Most respondents had children with T1DM for more than 4 years with 23 people (66%). Most of the respondents' parenting patterns were democratic, namely 24 (69%), followed by permissive parenting patterns as many as 9 people (26%) and the last was authoritarian parenting, (3%). Respondents attitudes and beliefs moderate (51%), information and facilities and social support are on (69%). Overall maternal management behaviour is good (51%)

From the data that has been obtained and tested for validity and reliability using SPSS software, the R table value is 0.334 and the calculated R value of each questionnaire item is above the R table value. Thus it can be said that the questionnaire is valid. For the reliability test, the data can be declared reliable if the Cronbach's Alpha value is greater than 0.70. From the data that has been obtained, all variables are greater than 0.70. That way the questionnaire can be said to be reliable.

The normality test used in this study is the Shapiro-Wilk normality test with SPSS software. The decision-making guideline is if the sig. or significance value or probability value <0.05 , then the data distribution is not normal, while if the sig. or significance value or probability value >0.05 , then the distribution is normal. In these variables, the Sig. value or Asymp. Sig. which is >0.05 . Therefore, it can be concluded that these variables are normally distributed.

The data that has been obtained is then tested for correlation using a correlation test using the Pearson correlation test. Based on the table of results obtained, the correlation coefficient value is 0.560 and the significance value is <0.01 . From the results obtained, the results of the correlation test of maternal parenting variables on behavior in maintaining oral hygiene for children with type-1 DM have a p value <0.05 , indicating a significant relationship between the two variables.

Table 2 Cross Tabulation

Characteristics		Maternal Management Oral Behaviour			
		Moderate (%)		Good (%)	
Mother Age	25-35	3	9%	2	6%
	36-45	10	29%	7	20%
	46-55	7	20%	4	11%
	56-65	1	3%	1	3%
Employment Status	Housewife	14	40%	11	31%
	Employee	1	3%	2	6%
	Self-employed	6	17%	1	3%
Income	> Minimum Wage	6	17%	6	17%
	Minimum Wage	3	9%	2	6%
	< Minimum Wage	12	34%	6	17%
Children Age	5-11	7	20%	6	17%
	12-16	14	40%	8	23%
Duration of T1DM	> 4 years	14	40%	9	26%

	< 4 years	7	20%	5	14%
Maternal Parenting Style	Authoritative	10	29%	15	43%
	Authoritarian	0	0%	1	3%
	Permissive	7	20%	2	6%

Source: Researchers' survey, 2023.

Based on the table 2 in terms of age, all age phases tend to have adequate behavior and late adulthood (36-45) is the age with the highest behavior with moderate behavior (29%) and good behavior (20%). In terms of occupation, only maternal respondents with jobs as employees had a higher percentage of good behavior than poor behavior. Mothers with jobs as housewives had the highest percentage of moderate (40%) and good behavior (31%). In terms of income, respondents with income below the minimum wage tended to have mothers with moderate behavior (34%). Each age category of children tended to have mothers with in moderate behavior, and mothers with children DM for more than 4 years have higher to have percentage moderate behavior (40%).

4. Discussion

Mothers start the education of individuals, create a good community order, and instill healthy culture and behavior from an early age. Therefore, the family has a strategic position to be used as a health service unit because health problems in the family are interrelated and influence each other between family members [6]. The figure of the mother becomes very personal for everyone. Mothers become someone who is closest not only biologically but also emotionally. Mlynarczyk showed a significant relationship between perceived parental support and medication adherence and quality of life of adolescents with type-1 diabetes mellitus [7].

Patients with diabetes mellitus are more susceptible to periodontal disease than non-diabetic patients and this increases with the age of a child with diabetes mellitus. Due to the potential for further complications from type-1 diabetes mellitus, including complications related to oral health, appropriate prevention and treatment strategies are needed [8-9]. Parenting has an important role in maintaining children's oral health conditions, because positive parenting can have a good impact on children's oral health and family welfare and children's sugar levels are more controlled [2], on the other hand, if the mother's parenting is less responsive it can have a negative impact on children with diabetes mellitus and can increase diabetes distress in children [10].

Parenting style have 3 types, namely authoritative, authoritarian, and permissive. Authoritative parenting is a form of parenting that pays attention to and respects children's freedom, but freedom is not absolute, parents provide understanding guidance to children. children who are raised with democratic parenting will become independent, obedient, and obedient to parents so that children's personal hygiene becomes better. The application of authoritative parenting has many positive impacts on children. Children who are educated with authoritative parenting will show a more independent attitude, have good control and strong self-confidence, are able to deal with stress, and can relate well to peers, are interested in new situations, obedient, obedient and achievement-oriented [11].

Mothers who apply authoritative parenting act as good examples and role models for their children, so that children imitate and learn positive behaviors from their parents [12]. Lopez explained that with authoritative parenting, children are able to develop control over their own behavior with things that are acceptable to society [13]. In this case, children can be responsible and confident in themselves. Their creativity is well developed because parents always stimulate their children to be able to take the initiative. So that with authoritative parenting, children will become people who are willing to accept criticism from others, are able to respect others, have high self-confidence and are able to take responsibility for their social life.

Mothers with authoritarian parenting tend to be directive and set strict rules that should not be questioned or discussed. Authoritarian parents tend not consider children's opinions; and parents are center their attention and control on authoritarian means, including using physical punishment [14]. Meanwhile, mothers with permissive parenting do not feel powerful and use the power they have in the family to care for their children. Mothers usually have no control and tend not to punish their children. Mothers do not have many demands or orders on their children. Mothers give their children full freedom to make decisions and supervise their own activities, although this may not be appropriate for the child's developmental stage [15].

Many factors from within the individual and from outside the individual (environment) can influence behavior change. Aspects within the individual include perception, motivation, and emotion [16]. Attitudes and beliefs are the things that

underlie oral hygiene behavior. Child development is strongly influenced by the perspective of parents, especially mothers who spend more time with children. Children's emotional reactions are directly influenced by accepting or rejecting attitudes, affectionate or indifferent attitudes, patient or hasty attitudes, and protecting or allowing attitudes [17].

Sondakh states that the availability of dental health care facilities is an important element in supporting dental health efforts [18]. Health care facilities have important requirements that can be said to be good, namely available and continuous, acceptable and appropriate, accessible, affordable, and quality [19]. Information that can affect a person's knowledge can be obtained from various sources, such as print and electronic media [20]. Social support encourages children's oral hygiene behavior. Social support shows a positive effect in helping mothers take on the role of providing care for children. Social support in the form of emotional support from the surrounding environment can have a major impact on maternal care in caring for and taking children to the dentist [21].

5. Conclusion

The conclusion in this study is that there is a significant relationship between maternal parenting variables and maternal behavior in maintaining oral health of children with type-1 DM in Malang city. The character of respondents as a predisposing factor in the formation of maternal parenting has a wide moderate disparity so that a significant relationship cannot be obtained with parental handling behavior towards dental health problems of type-1 DM children.

Compliance with ethical standards

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Disclosure of Conflict of interest

All authors in the making of this scientific article have no conflict of interest.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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