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Effectiveness of Implementation of Positive Parenting in Family Dental Nursing Care in Peuniti Village, Banda Aceh City

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Abstract

BACKGROUND: Dental caries are still a health problem for children. One of the factors that play a role in children's oral health is their parents. Parents are responsible for understanding the importance of maintaining oral health.

AIM: The study aimed the effectiveness of the application of positive parenting in family dental nursing care on changes in the caries risk score of children in Peuniti Village, Banda Aceh City.

METHODS: This research is quasi-experimental. The research design used was the equivalent control group design with pre-test and post-test. The population in this study were all families in Peuniti Village, Banda Aceh City which were included in the inclusion criteria as respondents. The sample in this study was selected by purposive sampling as many as 60 respondents were divided into two group the intervention group and control group. Data analysis was bivariate, using paired sample t-test and independent t-test.

RESULTS: The results showed that there was no difference in the mean values of knowledge, attitudes, actions of mothers, and child caries risk scores before the intervention (pre-test) in the treatment group and the control group which was statistically significant ($p > 0.05$). There were differences in the mean values of knowledge, attitudes, actions of mothers, and children's caries risk scores immediately after the intervention and 2 weeks after the intervention between the treatment group and the control group which were statistically significant ($p < 0.05$). There was a change in the average value of knowledge, attitudes, actions of mothers, and children's caries risk scores after the application of positive parenting in family dental nursing care in the treatment group was statistically significant ($p < 0.05$). This research was entirely self-funded.

CONCLUSION: There was a change in the average value of knowledge, attitudes, actions of the mother, and the child's caries risk score after the application of positive parenting. Application of effective positive parenting in family dental nursing in Banda Aceh City.

Introduction

Dental caries are still a health problem for children. The World Health Organization (WHO) in 2016 stated that the incidence of caries in children was still 60–90%. Dental caries is one of the most common oral diseases. As estimated by the WHO, 5 billion people out of 6.5 billion world population are affected by dental caries [1]. Dental caries is a multifactorial disease that is largely determined by a person's lifestyle [2], [3]. This can be prevented by adopting healthy behaviors, such as regular brushing, good eating habits, and regular dental check-ups. Promoting a healthy dental lifestyle was identified by the WHO as a priority and strategic orientation for the promotion of oral health [4]. Because early childhood is an important stage for forming health habits, parents often accept it at this stage [5]. Based on the results of the 2018 Basic Health Research (Riskesdas) survey, it was stated that the proportion of the population with dental health problems in the past 12 months in the Aceh region was 55% and the proportion of brushing teeth properly in people aged >3 years was only 2.8% [6]. According to the results of dental and oral examinations for the 3–5 year age group in Banda Aceh City during the UKGS activity, it showed that 78% of children suffered from caries. One of the factors that play a role in children's oral health is their parents. Parents are responsible for understanding the importance of maintaining oral health. The role of parents is the most important aspect in maintaining good oral health [7], [8]. Several studies have shown that lifestyle changes, the trend of having an only child and the increasing cost of living so that most parents are busy working are some of the obstacles to children's oral healthcare [9]. Placement of parents and family as a model is the main factor in acting as change agents for clean and healthy living behavior. Parenting in a positive way known as positive parenting will give children a sense of security and comfort [10]. In educating and raising children, there is a simple but very basic pattern for parents to apply and understand. The application of positive parenting directly affects the growth and development of children at an early age [11]. The application of positive parenting in providing a clean and healthy lifestyle for early childhood at home is very appropriate. Children will do it without feeling

forced and then it becomes a habit [12]. In connection with the above problems, the purpose of this study is to determine the effectiveness of the application of positive parenting in family dental nursing care to changes in the caries risk score of children in Peuniti Village, Banda Aceh City.

Methods

This research is quasi-experimental (quasi-experimental). The research design used was the equivalent control group design with pre-test and post-test. The intervention given was the application of positive parenting in family dental nursing care to changes in the child's caries risk score. The population in this study were all families in Peuniti Village, Banda Aceh City which were included in the inclusion criteria as respondents. The sample in this study was selected by purposive sampling as many as 60 respondents were divided into the intervention group and control group. The collection technique in this study consisted of caries risk simulator instruments and questionnaires, the first visit carried out initial observations/pre-tests, the second visit was carried out by providing dental health education to parents about ways to maintain dental health for 15 min using lectures, demonstration, question, and answer methods. The last visit did the final observation/post-test. Data analysis was bivariate, using paired sample t-test and independent t-test.

Results

Analysis of the differences (paired sample t-test) from pre-test to post-test I, post-test I to post-test II, and pre-test to post-test II

Based on the results of the analysis showed that the knowledge level of the mother as a respondent was not significant before the intervention (pre-test) between the treatment group and the control group (Table 1). However, after the intervention, the results showed that there was a significant difference in the knowledge of children and their parents in post-test I and post-test II between the treatment group and the control group, this was shown statistically $p < 0.05$.

Table 1: The average difference and standard deviation of knowledge in the intervention and control groups

Group	Data	Average difference	t	p
Intervention	Pre-test to post-test I	53.8 ± 14.0	12.9	0.001*
	Post-test I to post-test II	96.67 ± 12.69	−1.00	0.001*
	Pre-test to post-test II	53.83 ± 14.01	−14.94	0.001*
Control	Pre-test to post-test I	56.07 ± 14.74	−4.2	0.326
	Post-test I to post-test II	76.80 ± 21.89	−1.44	0.161
	Pre-test to post-test II	56.07 ± 14.74	−5.34	0.184

Differences in mother's attitude

Based on the results of the analysis by analyzing, there are differences in the values of mothers' attitudes before the intervention, it shows that there are no significant differences (Table 2). However, 2 weeks after the intervention, there was a significant difference in maternal attitudes in post-test I and post-test II between the treatment group and the control group, $p < 0.05$.

Table 2: The mean difference and standard deviation of mothers' attitudes as respondents in the intervention group and control group

Group	Data	Mean difference ± SD	t	p
Intervention	Pre-test to post-test I	53.75 ± 17.4	−10.2	0.001*
	Post-test I to post-test II	85.83 ± 7.14	−1.42	0.001*
	Pre-test to post-test II	53.75 ± 17.4	−1.90	0.001*
Control	Pre-test to post-test I	54.17 ± 16.19	−6.86	0.263
	Post-test I to post-test II	59.58 ± 16.96	1	0.67
	Pre-test to post-test II	54.17 ± 16.19	−1.90	0.326

SD: Standard deviation.

Mother's action difference

Based on the results of the analysis of the difference (paired sample t-test) showed the value of the mother's actions before the intervention showed that there was no significant difference (Table 3). After 2 weeks of intervention, the results showed that there was a significant difference in the mother's actions in post-test I and post-test II, this was shown statistically $p < 0.05$.

Table 3: The mean difference and standard deviation of the mother's actions as respondents in the intervention group and control group

Group	Data	Mean difference ± SD	t	p
Intervention	Pre-test to post-test I	43.3 ± 15.9	−15.3	0.001*
	Post-test I to post-test II	87.08 ± 6.95	−12.2	0.001*
	Pre-test to post-test II	43.3 ± 15.9	−3.8	0.001*
Control	Pre-test to post-test I	44.58 ± 17.58	−3.8	0.241*
	Post-test I to post-test II	57.9 ± 24.9	−1.36	0.184
	Pre-test to post-test II	44.58 ± 17.58	−3.2	0.163

SD: Standard deviation.

Differences in child caries risk score

Based on the results of the analysis of the difference in differences (paired sample t-test) in family children in Gampong Peuniti, Banda Aceh City, the caries risk score of children before the intervention showed that there was no significant difference (Table 4). However, after 2 weeks of intervention, there was a

Table 4: The mean difference and standard deviation of children's caries risk scores in the intervention group and the control group

Group	Data	Mean difference ± SD	t	p
Intervention	Pre-test to post-test I	53.88 ± 14.0	−0.60	0.001*
	Post-test I to post-test II	63.4 ± 4.42	−5.10	0.001*
	Pre-test to post-test II	93.09 ± 6.11	26.3	0.001*
Control	Pre-test to post-test I	92.3 ± 5.76	0.87	0.394
	Post-test I to post-test II	91.9 ± 6.40	1.68	0.104
	Pre-test to post-test II	92.3 ± 5.76	1.90	0.067

SD: Standard deviation.

significant difference in caries risk scores. Children in post-test I and post-test II between the treatment group and the control group, this was shown statistically $p < 0.05$. The control group did not do the intervention. While the caries risk score of children in the treatment group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II, there was a significant difference in the mean scores of the actions of children and their parents evidenced by the statistical value ($p < 0.05$).

Analysis of differences between groups (independent t-test)

Differences in mother's knowledge between groups

Based on the results of inter-group analysis (independent t-test) showed an increase in knowledge of mothers as respondents in the intervention group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II (Table 5). Then, there is a statistically significant difference in the mean value of knowledge ($p < 0.05$). Meanwhile in the control group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II, there was no statistically significant difference in the mean value of knowledge ($p > 0.05$).

Table 5: The mean and standard deviation of knowledge of mothers as respondents between the intervention group and the control group

Knowledge of mothers	Group	Mean ± SD	t	p	Description K
Pre-test	Intervention	53.8 ± 14.0	−0.60	0.550	Not significant
	Control	56.07 ± 14.74			
Post-test I	Intervention	96.7 ± 12.69	−4.304	0.001*	Significant
	Control	76.78 ± 21.9			
Post-test II	Intervention	98.33 ± 9.13	4.43	0.001*	Significant
	Control	81.25 ± 19.07			

SD: Standard deviation.

Differences in mothers' attitudes between groups

Based on the results of the intergroup analysis (independent t-test), it was found that there was an increase in the attitude of mothers as respondents in the intervention group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II (Table 6). There was a statistically significant difference in the mean value of knowledge ($p < 0.05$). Meanwhile, in the control group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II, there was no statistically significant difference in the mean attitude value ($p > 0.05$).

Table 6: The mean and standard deviation of mothers' attitudes as respondents between the intervention group and the control group

Mothers' attitudes	Group	Mean ± SD	t	P	Description
Pre-test	Intervention	53.75 ± 17.4	−0.96	0.924	Tidak Significant
	Control	54.17 ± 16.2			
Post-test I	Intervention	85.80 ± 7.14	7.81	0.001*	Significant
	Control	59.6 ± 16.9			
Post-test II	Intervention	81.25 ± 19.07	6.06	0.001*	Significant
	Control	82.9 ± 14.11			

SD: Standard deviation.

Differences in mother's actions between groups

Based on the results of the intergroup analysis (independent t-test), it was found that there was an increase in the actions of mothers as respondents in the intervention group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II (Table 7), namely, there is a statistically significant difference in the mean value of knowledge ($p < 0.05$). Meanwhile in the control group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II, there was no statistically significant difference in the mean value of knowledge ($p > 0.05$).

Table 7: The mean and standard deviation of the mother's actions as respondents between the intervention group and the control group

Mother's actions	Group	Mean ± SD	t	p	Description
Pre-test	Intervention	43.3 ± 15.9	−0.29	0.774	Not Significant
	Control	44.6 ± 17.6			
Post-test I	Intervention	87.08 ± 6.9	13.9	0.001*	Significant
	Control	57.9 ± 24.9			
Post-test II	Intervention	85 ± 11.6	5.45	0.001*	Significant
	Control	56.7 ± 26			

SD: Standard deviation.

Differences in child caries risk scores between groups

Based on the results of the intergroup analysis (independent t-test), it was found that there was a decrease in the caries risk score of children in the treatment group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II, that is, there is a statistically significant difference in the mean caries risk score of children ($p < 0.05$). Meanwhile, in the control group from pre-test to post-test I, from post-test I to post-test II, and from pre-test to post-test II, there was no statistically significant difference in the mean caries risk score of children ($p > 0.05$) (Table 8).

Table 8: Mean and standard deviation of child caries risk scores between the treatment group and the control group

Caries risk scores	Group	Mean ± SD	t	p	Description
Pre-test	Intervention	33.1 ± 6.12	0.509	0.613	Not significant
	Control	92.3 ± 5.8			
Post-test I	Intervention	63.4 ± 4.42	−19.9	0.001*	Significant
	Control	91.9 ± 6.5			
Post-test II	Intervention	58.93 ± 3.87	−22.3	0.001*	Significant
	Control	90.9 ± 6.83			

SD: Standard deviation.

Discussion

The results showed that there were differences in the mean values of knowledge, attitudes, actions of

mothers, and children's caries risk scores immediately after the intervention and 2 (two) weeks after the intervention between the treatment group and the control group which was statistically significant ($p < 0.05$). The application of positive parenting in family dental nursing care has maximized parental participation. Parents begin to have awareness of controlling children's dental hygiene to always brush their teeth using toothpaste regularly will prevent cavities in children. The parent-child relationship has a major impact on a child's psychosocial well-being [13]. Several studies also illustrate that childcare programs can be described as programs to improve the performance of parents' roles for child welfare. Several other studies have also shown the positive effect of parenting programs on the mental health of parents and children [9]. Positive parenting programs were also found to have positive effects on maternal depression, reduce parental stress, increase parental adequacy, and even on the quality of the relationship between partners [14]. Parents play an important role and are the main caregivers. Therefore, the main attention should be paid to parents during the promotion of dental and oral health for children, especially preschoolers and children <6 years.

In addition, the awareness to visit the dentist before the child's first birthday should be emphasized [15]. Maintaining healthy teeth is very important for the overall oral and general development of children [16]. Parents and family members are considered as the main source of knowledge about child care and health habits of children, which of course have a long-term influence in determining the dental and oral health status of children [17]. They are considered the key people in achieving the best oral health outcomes and ensuring the well-being of children. The results also showed that there was a change in the average value of knowledge, attitudes, actions of mothers, and child caries risk scores after the application of positive parenting in family dental nursing care in the treatment group was statistically significant ($p < 0.05$). The role of parents is very necessary in guiding, providing understanding, remembering, and providing facilities to children so that children can maintain dental and oral hygiene. In addition, parents also have a significant role in preventing the accumulation of plaque and caries in children. The decrease in the number of oral hygiene and caries by brushing teeth because using toothpaste with parental supervision is proven to be better than that which is not supervised by parents in brushing teeth [18]. The limitation in this study is that when data collection coincides with the COVID-19 pandemic. This makes it difficult for researchers to make direct observations of respondents. However, researchers still maintain health protocols to prevent exposure to the virus, such as wearing masks, washing hands, and keeping a distance.

Conclusion

There was a change in the average value of knowledge, attitudes, actions of the mother, and the child's caries risk score after the application of positive parenting. Application of effective positive parenting in family dental nursing in banda Aceh City.

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