

Development of a Model of Care for Dental and Mouth Health in Toddlers with the Game “Ma'boy” as an Alternative Change in Mother's Behavior and Formation of Children's Teeth-Brushing Skills

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Abstract:- Dental health is important in the life of every individual, including children. The 2018 Riskesdas stated that dental health problems in the 3-4 year old group were 36.4% with the highest distribution in children aged three. In children, the role of the mother is very important in maintaining dental and oral health. One effort to improve dental and oral health maintenance behavior is by developing a dental and oral health care model which in this study is in the form of a Ma'boy game. The purpose of this study was to produce a proper dental and oral health care model and to analyze its effectiveness in increasing changes in maternal behavior and improving toddler's teeth brushing skills. Types of R&D research, quasy experiment method pre and post-test design (non-equivalent control group). The population of toddlers in two Kindergartens assisted by the Paccerakang Health Center in Makassar city, the study sample was divided into 2 groups consisting of 17 treatment groups and 17 control groups based on inclusion criteria with the lameshow formula. The research instrument used was a questionnaire. Data analysis was performed by univariate analysis (frequency distribution), bivariate analysis (paired samples test and independent sample test) and multivariate analysis (linear regression). The results showed that the development of the Ma'boy model had been applied to mothers effectively increasing knowledge with ($p=0.001$), an average increase of 2.28, attitudes ($p=0.008$), an average increase of 10.3 and action ($p = 0.000$), the average increase is 2.29. In toddlers, it is effective to improve teeth brushing skills with ($p=0.000$), an average increase of 5.81 and decrease the child's DI score with ($p=0.000$) an average decrease of 1.19. The conclusion is that the Ma'boy model of care is effective in increasing mothers' knowledge, attitudes and actions as well as teeth brushing skills and reducing DI scores in toddlers.

Keywords:- Dental Health Care, Mother's Behavior, Toddler's Teeth Brushing Skills.

I. INTRODUCTION

Dental and oral health is important in the life of every individual, including children, the health of baby teeth is often ignored by mothers because they are only considered temporary and will be replaced by permanent teeth. Baby teeth play an important role in a child's ability to speak and at the same time help the chewing process which has a good impact on nutrition and child development.(1)The 2018 Riskesdas results state that 57.6% of the national prevalence rate experienced by Indonesians is dental and oral health problems.(2)Behavior towards dental and oral health in Indonesian society is classified as bad criteria.(3)The results of Riskesdas data from 2013 to 2018 in the description of the number of dental caries that occur increase every year national dental caries in 2013 children aged 1-4 years which is 10.4% and in 2018 children aged 3-4 years which is 36.4%.(4)(2)

The most common type of caries in primary teeth is rampant caries or more specifically, it is called ECC disease *early childhood searches*. Caries is often found in children under five years of age (toddlers), with the highest distribution in children aged three years. There are rampant caries that can cause various problems, especially those related to the general health of children who are in the process of developing and growing children which can affect the level of intelligence of children to decrease if allowed to continue for a long period of time which can have a negative impact on the quality of life of children.(5)(6)Factors that cause ECC or non-clinical rampant caries include behavior, environment, heredity, and health services. The behavior of a child in maintaining dental and oral hygiene through brushing the child's teeth accompanied by the mother has the potential to prevent ECC from occurring compared to a child who brushes his teeth unaccompanied or independently.(7)

Tooth brushing behavior in Indonesia has a percentage of 94.7% but for correct tooth brushing behavior is 2.8%. Meanwhile, tooth brushing behavior in the province of South Sulawesi shows a rate of 93.6%.(8)This shows that there is a close relationship with good and correct tooth brushing

behavior.(9)Instilling a habit of brushing teeth with toothpaste containing fluoride along with regular visits to the dentist is a very effective method for preventing dental and oral diseases.(10)

Several countries have made various efforts to prevent dental and oral diseases in preschool children. Istanbul has implemented dental health promotion through an education program for PAUD teachers, but the success rate is still not optimal, as only 29.8% of PAUD teachers have knowledge of oral and dental health.(11)Hong Kong has also implemented dental and oral health promotion through a fluoridated water rinse program (0.5 ppm F), but there has not been any significant change in the prevalence of ECC that has been observed over the last two decades.(12)

Indonesia has carried out a government program, namely promotive and preventive efforts for toddlers or preschoolers through the School Dental Health Business (UKGS) program.(13)The application of the program must be carried out thoroughly so that children are able to have good habits in the activities of daily life.(14)The UKGS program is a program carried out by the government in an effort to maintain and improve oral and dental health for students in schools and it is hoped that it will have a positive impact on behavior change in improving dental and oral health status.(15)

Changes in behavior stated that there was a significant relationship between knowledge, attitudes and behavior of the mother affecting the dental and oral health status of the child.(16)Eating cariogenic foods has been shown to have an impact on the occurrence of dental caries in children at Aisyiyah Bustanul Atfal Kindergarten, Lebaksiu Lor Village (p value = 0.001).(17)From the implementation of the UKGS activity program for toddlers or preschoolers, it can be concluded that the current UKGS program has not been successful. The program's failure was influenced by the low dental and oral health maintenance behavior of children from the results of the plaque examination index/PHP-M score of 42, which means that it is not good and the prevalence value of dental caries is 90.1%.(13)

According to SOR theory, a change in behavior or a person's reaction is influenced by a stimulus (external stimulation). This theory is based on the assumption that the cause of a change in behavior depends on the stimulus that communicates with the organism.(18)Tedi's Behavior Change theory is a theory of the formation of preschool children's teeth brushing behavior which takes only 10 days.(13)Social Learning Theory environment is a place where a person shapes and influences his behavior, the environment does shape behavior but behavior also forms an environment where there is a relationship/interaction between the environment, behavior and one's psychological processes.(19)(18)

Based on the combination of the above theories, the roles of mothers and teachers play an active role in the formation of stimuli that can be done through learning media and games. Low knowledge will affect the behavior of the mother in maintaining the cleanliness of the teeth and mouth

of the child, promotive and preventive evaluation activities are currently very much needed in a comprehensive and continuous manner. active mother, this activity can be applied to the implementation of dental and oral health care.(20)(18)

The implementation of dental and oral nursing care (askep gilut) has now been transformed into dental and oral health care services which have been regulated in the Minister of Health Law Number 284 of 2006 which explains that dental and oral health care is a process of using systematic methods for the areas of promotion, prevention, and simple curative, several aspects of dental and oral health services, namely assessment, diagnosis, planning, implementation and evaluation.(21)Preschoolers or toddlers are not included in the dental and oral health implementation regulations, the target is only carried out on individuals or community groups.(22)

As stated in the Minister of Health Regulation (Permenkes) No. 58 of 2012 which describes the implementation of dental nurses, the main duties of dental nurses in carrying out dental and oral health care services for individuals, groups and communities on the target of health services. Permenkes No. 58 of 2012, dental and oral health care is a planned dental and oral health service, which can be carried out by the community within a certain period of time, and will be carried out continuously in the areas of simple promotive, preventive and curative given to the target individuals, groups, and society.(23)

This research will develop a dental health care model that is designed for the management of dental and oral health care in children aged <5 years (toddlers). The dental health care model in question is in the form of a traditional game commonly called Ma'boy. The Ma'boy game is a traditional children's game originating from the Makassar region, South Sulawesi, which is also commonly called Ma'gebo by the people of South Sulawesi. The noble values in the Ma'boy game are Cooperation, Solidarity, Accuracy and Accuracy, Physical Freshness (sports) Mapping Strategy and Social Interaction. Thus, a child will be motivated to return to learning through traditional children's game learning strategies (Bugis Makassar).²⁷

Geboor Kasti is a game whose method is similar to baseball (softball) in general. It's just that the way to throw it is not as hard as with a straight throw, but slowly by throwing it up.This *Gebo'* game uses a baseball to throw the body of the target person. There are no fixed rules in this game. Because those who get the baseball can throw the target they want. Each player who hits the ball runs around the post and then returns to its original place.

The learning strategy based on the Makassar Bugis traditional game "Ma'boy" is an alternative that can improve children's explanation abilities, can be actively used as a solution to problems that occur and can be used as a guide in innovating, especially in implementing learning strategies²⁸.

The development of a model of dental and oral health care aims to improve the skills of toddlers in brushing their teeth properly, prevent rampant caries, and change the

behavior of mothers in dental and oral health care and teach mothers not to get used to unhealthy snacks by making non-cariogenic food innovations. in order to maintain a child's diet that is excessive in consuming cariogenic foods. Based on the background above, this research was conducted to identify the effectiveness of the dental health care model for the formation of proper tooth brushing behavior and changes in mother's behavior on the dental health status of toddlers

II. MATERIALS AND METHODS

The type of research is R&D, quasy experiment method pre and post-test design (non-equivalent control group). The population of toddlers in two Kindergartens assisted by the Paccerakang Health Center in Makassar city, the study sample was divided into 2 groups consisting of 17 treatment groups and 17 control groups based on inclusion criteria with the lameshow formula. The research instrument used was a questionnaire. Data analysis was performed by univariate analysis (frequency distribution), bivariate analysis (paired samples test and independent sample test) and multivariate analysis (linear regressio

III. RESULTS AND DISCUSSION

The results of the research carried out consisted of five stages including information gathering, model design, expert validation and revision tests, model trials and model results. This research has been carried out and registered with the HEALTH RESEARCH ETHICS COMMITTEE of the POLTEKKES KEMENKES SEMARANG with Ethical Clearance number No. 0717/EA/KEPK/2022 This research was conducted in Makassar City which began in January 2022.

A. Univariate analysis

➤ *The results of the characteristics in the study are used to find out the general description of the respondents which are presented in the following table:*

Table 1. Characteristics of Research Respondents

No	Characteristics	Intervention Group		Control Group	
		N	%	N	%
1	Gender of child				
	Man	7	41	6	35
	Woman	10	59	11	65
	Total	17	100	17	100
2	Mother's Education				
	SD	0	0	0	0
	JUNIOR HIGH SCHOOL	5	29	4	23
	SENIOR HIGH SCHOOL	5	29	6	35
	Bachelor	7	42	7	42
	Total	17	100	17	100
3	Mother's Age				
	20-30 years	8	47	7	41
	>30 years	9	53	10	59
	Total	17	100	17	100

Table 1 shows that the child respondents in the intervention group consisted of 7 (41%) male and 10 (59%) female. In the control group, 6 (35%) were male and 11 (65%) were female. Most of the mothers in the intervention and control groups had a bachelor's degree, while the mothers in the intervention and control groups were dominated by >30 years of age.

➤ *Distribution of Research Variable Frequency*

Table 2. Frequency Distribution of Research Variables

Variable		Intervention Group	Control Group
Knowledge	Pre-test	6.00 + 1.32	3.41 + 0.93
	Post-test	8.82 + 1.01	5.41 + 0.87
	Difference	2.82	2
Attitude	Pre-test	23.5 + 3.53	16.2 + 1.78
	Post-test	33.8 + 3.50	23.2 + 2.16
	Difference	10.3	7
Action	Pre-test	6.17 + 1.13	5.29 + 1.21
	Post-test	8.29 + 1.15	6.47 + 1.06
	Difference	2.12	1.18
Tooth brushing skills	Pre-test	6.29 + 0.91	4.47 + 0.94
	Post-test	12.1 + 1.21	6.11 + 0.85
	Difference	5.81	1.64
DI (Debris Index)	Pre-test	2.29 + 0.51	2.47 + 0.24
	Post-test	1.10+ 0.21	2.11 + 0.55
	Difference	1.19	0.36

Table 2 shows the mean value of knowledge in the intervention group increased from 6.00 to 8.82 and for the control group increased from 3.41 to 5.41. The mean value of the mother's attitude in the intervention group increased from 23.5 to 33.8 and for the control group from 16.2 to 23.2. The mean value of the action in the intervention group increased from 6.17 to 8.29 and for the control group increased from 5.29 to 6.47. The mean value of tooth brushing skills in the intervention group increased from 6.29 to 12.1 and for the control group it increased from 4.47 to 6.11. The mean debris index score in the intervention group decreased from 2.29 to 1.10 and for the control group decreased from 2.47 to 2.11. The results of the different test with ANOVA showed that all variables with a P-value > 0.05,

B. Bivariate Analysis

Bivariate analysis was carried out to test the differences between the two variables, in the early stages of model testing carried out in the following way: Normality test, then tested the effectiveness of paired and unpaired variables.

➤ *Normality test*

The normality test is a test that aims to determine whether the data collected on each variable is normally distributed or not. The normality test used the Shapiro-Wilk method because the number of samples in this study was less than 50 samples.

Table 3 Shapiro-Wilk Normality Test Results

Variable	p-values	
	Intervention	Control
Pre-test knowledge	0.488	0.148
Post-test knowledge	0.580	0.584
pre-test attitude	0.584	0.488
Post-test attitude	0.401	0.213
Pre-test action	0.588	0.111
Post-test action	0.504	0.129
Tooth brushing skills pre-test	0.447	0.219
Post-test teeth brushing skills	0.584	0.147
DI pre-test	0.401	0.213
IN post-test	0.588	0.111

Based on the results of the data normality test in table 3 it shows that for pre-post test knowledge, pre-post test attitudes, pre-post test actions, pre-post test skills and DI pre-post test in the intervention group normally distributed with a p-value > 0.05, for the control group the pre-post test knowledge, pre-post test attitude, pre-post test action, pre-post test skills and DI pre-post test in the control group were also normally distributed with a p-value > 0.05. So the statistical test used is the parametric test.

➤ Model Effectiveness Test

Hypothesis testing in research with a pre-post test design and using controls is considered significant if it meets one of the following criteria:

- If the results of the paired test in the intervention group are significant (p<0.05) while those in the control group are not significant (p>0.05) and the results in the intervention group are better than the control.
- If the test results were not paired, the pre-test data between the intervention group and the control group were not significantly different (p>0.05), but the post-test data between the intervention group and the control group were significantly different (p <0.05) and the results on the intervention group was better than the control group.
- If the test results are unpaired, the delta data (Δ) between the intervention group and the control group is significantly different (p <0.05) and the results in the control group are better than the intervention group.

Following are the results of testing the effectiveness of the model in the intervention group and the control group:

Table 4. Test of the Effectiveness of Mother's Knowledge in the Intervention and Control Groups

Measurement time	Pre-test Mean ±SD	Post-test Mean ±SD	p-values
Paired Data Test			
Intervention	6.00 + 1.32	8.82 + 1.01	0.000
Control	3.41 + 0.93	5.41 + 0.87	0.011
Unpaired Data Test			
Intervention	6.00 + 1.32	8.82 + 1.01	
Control	3.41 + 0.93	5.41 + 0.87	
p-values	0.002	0.001	
Unpaired Data Test Change Value (Δ)**			

Mean ±SD Pre-post test		
Intervention	2.82 ± 1.34	0.007
Control	2.00 ± 0.57	

*Paired Samples Test **Independent Sample Test

The results of the pair data effectiveness test on mother's knowledge showed that the P-value of the intervention group was 0.000 (p <0.05) so that the development of dental and oral health care models was effective in increasing knowledge. The p-value of the control group's knowledge was 0.011 (P<0.05) meaning that the dental and oral health care model was effective in increasing the value of mother's knowledge.

The results of the effectiveness test for unpaired data on the variable knowledge of the pretest data between the intervention group and the control group were significantly different, the p-value was 0.002 (p <0.05), while for the post-test data the intervention and control groups were significantly different, the p-value was 0.001 (p<0.05) means that the development of a dental and oral health care model is effective in increasing mother's knowledge compared to the care used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 8.82 while the control group became 5.41.

Unpaired data test results pre-post delta (Δ) different meaning, it can be seen that the p-value is 0.007 (p <0.05) meaning that the development of a model of dental and oral health care is effective in increasing mother's knowledge in implementing child dental and oral health care compared to parenting used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 2.82 while the control group became 2.00.

Table 5 Test of the Effectiveness of Mother's Attitudes in the Intervention and Control Groups

Measurement time	Pre-test Mean ±SD	Post-test Mean ±SD	p-values
Paired Data Test			
Intervention	23.5 + 3.53	33.8 + 3.50	0.001
Control	16.2 + 1.78	23.2 + 2.16	0.025
Unpaired Data Test			
Intervention	23.5 + 3.53	33.8 + 3.50	
Control	16.2 + 1.78	23.2 + 2.16	
p-values	0.045	0.012	
Unpaired Data Test Change Value (Δ)** Mean ±SD Pre-post test			
Intervention	10.3 ± 5.152	0.008	
Control	7.00 ± 6.913		

*Paired Samples Test **Independent Sample Test

The results of the effectiveness test on paired data on mother's attitudes showed that the p-value of the intervention group was 0.001 ($p < 0.05$). The p-value of the control group's knowledge was 0.025 ($P < 0.05$) meaning that the dental and oral health care model was effective in increasing the value of the mother's attitude.

The results of the effectiveness test of the unpaired data on the attitude variable on the pre-test data between the intervention group and the control group were significantly different, the p-value was 0.042 ($p < 0.05$), while for the post-test data the intervention and control groups were significantly different, the p-value was 0.000 ($p < 0.05$) means that the development of a dental and oral health care model is effective in improving the mother's attitude compared to the care used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 33.8 while the control group became 23.2.

The results of the unpaired data test the pre-post delta (Δ) value has a different meaning, it can be seen that the p-value is 0.008 ($p < 0.05$) meaning that the development of a model of dental and oral health care is effective in increasing the mother's attitude in implementing child dental and oral health care compared to parenting used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 10.3 while the control group became 7.00.

Table 6 Test of the Effectiveness of Mother's Actions in the Intervention and Control Groups

Measurement time	Pre-test Mean \pm SD		Post-test Mean \pm SD	p-values
Paired Data Test				
Intervention	6.17 + 1.13		8.29 + 1.15	0.000
Control	5.29 + 1.21		6.47 + 1.06	0.018
Unpaired Data Test				
Intervention	6.17 + 1.13		8.29 + 1.15	
Control	5.29 + 1.21		6.47 + 1.06	
p-values	0.007		0.001	
Unpaired Data Test Change Value (Δ)** Mean \pm SD Pre-post test				
Intervention	2.29 \pm 2.775			0.000
Control	1.18 \pm 3.878			

*Paired Samples Test **Independent Sample Test

The results of the effectiveness test on paired data on mother's actions showed that the p-value of the intervention group was 0.000 ($p < 0.05$). The p-value of the control group's knowledge was 0.018 ($P < 0.05$) meaning that the dental and oral health care model was effective in increasing the value of the mother's actions.

The results of the effectiveness test of unpaired data on the action variable pre-test data between the intervention group and the control group were significantly different, the p-value was 0.007 ($p < 0.05$), while for the post-test data the intervention and control groups were significantly different, the p-value was 0.001 ($p < 0.05$) means that the development of a dental and oral health care model is effective in increasing the mother's actions compared to the care used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 8.29 while the control group became 6.47.

Unpaired data test results pre-post delta (Δ) value has a different meaning, it can be seen that the p-value is 0.000 ($p < 0.05$) meaning that the development of a model of dental and oral health care is effective in increasing the mother's actions in implementing child dental and oral health care compared to parenting used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 2.29 while the control group became 1.18.

Table 7 Effectiveness Test of Teeth Brushing Skills in the Intervention and Control Groups

Measurement time	Pre-test Mean \pm SD		Post-test Mean \pm SD	p-values
Paired Data Test				
Intervention	6.29 + 0.91		12.1 + 1.21	0.000
Control	4.47 + 0.94		6.11 + 0.85	0.001
Unpaired Data Test				
Intervention	6.29 + 0.91		12.1 + 1.21	
Control	4.47 + 0.94		6.11 + 0.85	
p-values	0.007		0.001	
Unpaired Data Test Change Value (Δ)** Mean \pm SD Pre-post test				
Intervention	5.81 \pm 5.551			0.000
Control	1.64 \pm 4.062			

*Paired Samples Test **Independent Sample Test

The results of the effectiveness test of paired data on tooth brushing skills showed that the p-value of the intervention group was 0.000 ($p < 0.05$) so that the development of dental and oral health care models was effective in improving children's tooth brushing skills. The p-value of the control group's knowledge was 0.001 ($P < 0.05$) meaning that the dental and oral health care model was effective in increasing the value of children's teeth brushing skills.

The results of the effectiveness test for the unpaired data on the tooth brushing skills variable, the pre-test data between the intervention group and the control group, were significantly different, the p-value was 0.001 ($p < 0.05$), while

the post-test data for the intervention and control groups were significantly different, the p-value was significant. value is 0.000 (p<0.05) meaning that the development of a dental and oral health care model is effective in improving children's teeth brushing skills compared to the care used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 12.1 while the control group became 6.11.

The results of the unpaired data test the pre-post delta (Δ) value has a different meaning, it can be seen that the p-value is 0.000 (p <0.05). with the care used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 5.81 while the control group became 1.64.

Table 8 DI Effectiveness Test in the Intervention and Control Groups

Measurement time	Pre-test Mean ±SD		Post-test Mean ±SD	p-values
Paired Data Test				
Intervention	2.29 + 0.51		1.10 + 0.21	0.000
Control	2.47 + 0.24		2.11 + 0.55	0.001
Unpaired Data Test				
Intervention	2.29 + 0.51		1.10 + 0.21	
Control	2.47 + 0.24		2.11 + 0.55	
P-values	0.001		0.001	
Unpaired Data Test Change Value (Δ)** Mean ±SD Pre-post test				
Intervention	1.19 ± 1.551			0.000
Control	0.36 ± 0.462			

*Paired Samples Test **Independent Sample Test

Based on table 8, it shows that the results of the pair data effectiveness test have a p-value for the intervention group of 0.000 (p<0.05) meaning that the development of a dental and oral health care model for toddlers with Ma boy is effective in reducing toddler index debris. The p-value of the control group was 0.001 (P<0.05) meaning that the dental phantom trainer reduced the toddler index debris.

The results of the effectiveness test of the unpaired data of the DI variable in the pre-test data between the intervention group and the control group were significantly different. 0.001 (p<0.05) means that the development of a dental and oral health care model is effective in reducing children's DI scores compared to the care used in the control group. This is evidenced by the decrease in the average value after being treated in the intervention group better than the control group, namely the intervention group became 1.10 while the control group became 2.11.

The results of the unpaired data test the pre-post delta (Δ) value has a different meaning, it can be seen that the p-value is 0.000 (p <0.05) meaning that the development of a dental and oral health care model is effective in reducing the child's DI score in the implementation of children's dental and oral health care compared to care used in the control group. This is evidenced by the decrease in the average value after being treated in the intervention group better than the control group, namely the intervention group became 1.19 while the control group became 0.36.

➤ *Confounding variable on behavioral improvement in oral health*

The intervention model of dental and oral health care in toddlers needs to consider other variables that interfere with the results or are commonly called confounding variables, in this study the confounding variables were mother's education and age.

Table 9 Variables of Mother's Education and Age on Increasing Mother's Behavior in Toddler Dental and Oral Health.

Variable	p-values
Mother's education	0.585
Mother's age	0.676

Based on table 9 it can be seen that there are no other variables related to the independent variable or the dependent variable, where the education and mother's age variables have a value of p> (0.05).

C. *Dental and Oral Health Care Model for Toddlers*

The dental and oral nursing care program is one of the efforts to address dental and oral health problems. The aim of dental and oral nursing care services is to improve the ability to maintain oneself in the field of dental and oral health, as well as optimal dental and oral health status. The target of dental and oral health care services is prioritized for groups that are vulnerable to dental and oral diseases including early childhood (pre-school) whose dental and oral health cannot be ignored, because it also influences the perfect child's growth and development²⁹.

The results of gathering information obtained that in forming children's teeth brushing skills from an early age it is necessary to provide educational methods that are right on target and supported by media that developed in the industrial revolution era 4.0, in accordance with the results of previous research that the provision of educational methods with the right stimulus and response for growth and child development can affect changes in child behavior. Children's education from an early age is obtained directly from the mother and the role of the mother in the child's development period is very large, starting from dental health, dental hygiene, to children's dental and oral diseases. Preschool children are very vulnerable to dental and oral health, so special attention is needed and the role of the mother in maintaining the cleanliness of the child's teeth and mouth,³⁰.

The formation of independence in brushing teeth in children apart from providing education should also use learning methods that attract children's attention so that children do not get bored quickly while studying and learning becomes part of the fun for children in the form of Ma'Boy game media. Ma'boy" is a traditional children's game originating from Makassar, South Sulawesi. The Ma'boy game is also commonly called Ma'gebo by the people of South Sulawesi. The noble values in the Ma'boy game are Cooperation, Solidarity, Accuracy and Accuracy, Physical Freshness (sports) Mapping Strategy and Social Interaction. Thus, students are motivated to return to learning through strategies. Learning traditional children's games (Bugis Makassar)²⁷.

Geboor Kasti is a game whose method is similar to baseball (softball) in general. It's just that the way to throw it is not as hard as with a straight throw, but slowly by throwing it up. This *Gebo'* game uses a baseball to throw the body of the target person. There are no fixed rules in this game. Because those who get the baseball can throw the target they want. Each player who hits the ball runs around the post and then returns to its original place.

Toddlers are children aged 1-5 years divided into two, namely children over three years who are known as "batita" and children over three years to five years who are called "preschool" age. Preschoolers are children in the age group above one year or under five years. In this age period toddlers start to learn a lot to interact with the social environment outside the family and children will get to know many new things that have not been done before³¹.

Children aged under five are very susceptible to experiencing problems with dental and oral health. Toddlers are referred to in the preschool age group who are vulnerable to rampant caries or early childhood caries, because toddlers cannot do many things by themselves, including toddlers who cannot maintain dental hygiene independently but must be accompanied by mother³¹.

There are many factors that cause dental and oral health problems in toddlers which include internal factors, children aged under five really like to eat sweet foods that contain excessive sucrose causing damage to the lining of the child's teeth, children who like to chew food, this habit can damage teeth and can reduce tooth decay. the amount of nutritional intake, drinking milk with a pacifier bottle until the child falls asleep, the remaining milk that sticks to the surface of the child will become acidic so that bacteria will develop causing damage to the teeth. External factors, namely age, environment, parental behavior, and the economy can also be a cause of dental and oral health problems in children³².

The role of mother to child in the world of dental health is also very important. Factors that cause tooth decay in toddlers affect the mother's role in addition to nutritional intake and behavior, mothers who do not have much knowledge, attitudes, and actions regarding dental and oral health greatly affect the child's oral hygiene status. The level of awareness of mothers who do not support dental health in

children, mother's awareness of the importance of children's dental health can be seen from the knowledge they have. A cause of dental and oral health problems in children is a behavioral factor that ignores dental and oral hygiene³².

The development of dental and oral health care for toddlers is a modification of dental and oral health care (*askepgitut*) that uses the theory of *tedi's* behavior change and the theory of health belief model which aims to change the behavior of mothers on dental and oral health for toddlers, the formation of children's skills in brushing their teeth and providing intake of healthy children as a support for good dental and oral hygiene status³³.

Knowledge is one of the factors associated with the incidence of caries in toddlers. Knowledge will underlie the formation of behavior that supports or does not support children's dental and oral hygiene. This knowledge can be obtained naturally or in a planned manner, namely through the educational process. Mothers with knowledge of dental and oral hygiene are predisposing factors for behavior that does not support dental and oral hygiene(24). The results of the expert validation showed a p-value of 0.003, which means that the dental and oral health care model for toddlers is relevant as a dental and oral health care model for toddlers. Expert validation is also referred to as the process of content validity where a module is said to be valid based on the validity of the module content carried out by expert judgment (assessments made by experts).

D. *Product/Model Trial*

➤ *Toddler*

The results of the effectiveness test for the unpaired data on the tooth brushing skills variable, the pre-test data between the intervention group and the control group, were significantly different, the p-value was 0.001 ($p < 0.05$), while the post-test data for the intervention and control groups were significantly different, the p-value was significant. value is 0.000 ($p < 0.05$) meaning that the development of a dental and oral health care model is effective in improving children's teeth brushing skills compared to the care used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 12.1 while the control group became 6.11.

The therapist at the first meeting approaches the patient, the second meeting still builds relationships with the patient and performs intraoral and extra oral examinations. The simulation method can be interpreted as a way of presenting learning experiences by using artificial situations to understand certain concepts, principles or actions. Meetings 2 and 3 carried out observations on the ability of toddlers to brush their teeth as well as dental and oral health checks for toddlers and training in brushing their teeth with the *ma boy* game. Then for the 3rd meeting the intervention was in the form of brushing teeth for toddlers in accordance with the guidelines for developing dental and oral health care models for toddler mothers. The 3rd meeting observed the ability of toddlers to clean the oral cavity in the third week after the

training was carried out. For the 4th meeting post-test and evaluation

This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 12.1 while the control group became 6.11. The application of dental and oral health care services that are given directly by showing how to do or do something, so that learning becomes clearer and more concrete and it is easier for respondents to understand what is being learned. The implementation of dental and oral health care services focuses the attention of respondents on things that are considered important by the teacher so that important things can be observed carefully(25). Guiding students towards thinking the same in the same channel of thought. So that learning is more acceptable and absorbed by respondents³⁴.

E. Mother of Toddlers

The results showed that the application of dental and oral health care for toddlers can increase the mother's knowledge, attitudes and actions. Unpaired data test results pre-post delta (Δ) different meaning, it can be seen that the p-value is 0.001 ($p < 0.05$) meaning that the development of a dental and oral health care model is effective in increasing mother's knowledge in the implementation of child dental and oral health care compared to oral health care. used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 8.21 while the control group became 5.19.

The results of the unpaired data test the pre-post delta (Δ) value has a different meaning, it can be seen that the p-value is 0.008 ($p < 0.05$) meaning that the development of a model of dental and oral health care is effective in increasing the mother's attitude in implementing child dental and oral health care compared to parenting used in the control group. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 6.05 while the control group became 1.93.

Unpaired data test results pre-post delta (Δ) value has a different meaning, it can be seen that the p-value is 0.000 ($p < 0.05$) meaning that the development of a model of dental and oral health care is effective in increasing the mother's actions in implementing child dental and oral health care compared to parenting used in the control group. This is evidenced by an increase in the average value after being given treatment in the intervention group better than the control group, namely the intervention group became 3.60 while the control group became 0.91.

Behavior (knowledge) towards maintaining oral health can cause dental caries. Knowledge/insight of parents is very influential on the dental health of their children. Mothers who want to expand their knowledge/insight (cooperative) more often have cooperative children, in other words, mothers who have good knowledge, their children's teeth will also be good/healthy(26).

Knowledge is an important condition in forming attitudes to maintain healthy teeth. Good knowledge will have an impact on the behavior of caring for good dental and oral health as well. Proper and correct tooth brushing counseling are efforts made to change the behavior of a person, group of people or society so that they have knowledge, attitudes and habits to behave in a healthy life in the field of dental and oral health, namely maintenance of good and correct dental health.(27). Someone who has increased knowledge will be supportive and will be reflected in the form of better actions or behavior. Changes in knowledge are initiated by a person's perception of what will be lived, so that perceptions appear according to the information obtained(28).

IV. CONCLUSION

Based on the results of the study, it can be concluded that the Ma'boy dental and oral health care model is appropriate and its application is effective in changing the behavior of toddler mothers and improving teeth brushing skills in toddlers by playing ma boy.

- *The Ma'boy toddler oral health care model is effective in increasing:*
 - The Ma'boy toddler oral health care model is effective in increasing the mother's knowledge as proven by the p-value = 0.001. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 2.82 while the control group became 2.00.
 - Ma'boy's dental and oral health care model is effective in increasing the mother's attitude as proven by the p-value = 0.008. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 10.3 while the control group became 7.00.
 - The Ma'boy toddler oral health care model is effective in increasing the mother's actions as proven by the p-value = 0.000. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 2.29 while the control group became 1.18.
 - The Ma'boy toddler oral health care model is effective in improving toddlers' teeth brushing skills as proven by the p-value = 0.000. This is evidenced by an increase in the average value after being treated in the intervention group better than the control group, namely the intervention group became 5.81 while the control group became 1.64.
 - The dental and oral health care model for toddlers Ma'boy is effective in reducing DI scores for toddlers as proven by the p-value = 0.000. This is evidenced by the decrease in the average value after being treated in the intervention group better than the control group, namely the intervention group became 1.19 while the control group became 0.36

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