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Research article *Medical research*

Differences in knowledge, attitude, behavior and status of pregnant women are given gingival dental health education method with teeth with without brushing coaching mentoring in health II Denpasar south of 2017

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ABSTRACT

Background

The gestation period is typically an increase in levels of hormones that bring about change on the parts of the body, as well as on the conditions of the oral cavity. It raises their plaque on the teeth, so that if the teeth are not cleaned because of laziness or nausea during pregnancy, this certainly is the risk of gingivitis, or inflammation of the gums that is prone to happen in the first trimester of pregnancy.

Aim

Know the difference knowledge, attitudes, behaviors and gingival status pregnant mother by dental health education with the coaching methods of brushing teeth with no guidance The Puskesmas II South Denpasar Year 2017

Research methods

Using a quasi-experimental design or quasi-experimental design with pretest and posttest study design. Subjects were divided into two groups: the treatment group and the control group were held in South Denpasar Health Center II in July-August 2017. The study population are pregnant women who come to the health center II Denpasar poly KIA south in July-August 2017 carried out by random sampling.

Research result

On the measurement of knowledge there are no significant differences, with Pvalue> 0.05, while the measurement of attitudes, behaviors and status gingival significant difference to the value of Pvalue of <0.05

Conclusion

Brushing teeth coaching methods improve attitudes, behavior and status of pregnant women are significantly gingival health center II in South Denpasar Year 2017.

Keywords: Dental and Oral Health Education, Brushing, Pregnancy

BACKGROUND

During pregnancy, it is usually an increase in levels of hormones that bring about change on the parts of the body. Similarly, in the condition of the oral cavity. According to Madjid (2017), in addition to the hormone, an increase of plaque on

the teeth, so that if the teeth are not cleaned because of laziness or nausea during pregnancy, this certainly is the risk of gingivitis, or inflammation of the gums that is prone to happen in the first trimester of pregnancy. The inflammation occurs if the teeth are not cleaned properly. Results of previous studies show no association between gingivitis during pregnancy with premature birth with low birth weight (LBW). Excessive bacteria which is a cause of gingivitis can get into the bloodstream. When this happens, the bacteria can be transferred to the uterus, triggering the production of a chemical compound prostaglandin that causes uterine contractions, so inducing premature birth. Gingivitis can also cause a delay in the growth of the baby (Yoto. H, Anindita.PS, Mintjelungan.C., (In Mayberry LJ, SL Russell, 2008). The results Anggraini and Andrew (2015), showed that more than half of the respondents mother pregnant (52.94%) feel the state of dental health of their mouth good and 61.8% had oral dental health problems. A number of 55, 9% of respondents claimed to have been informed about the importance of oral dental health during pregnancy. Only about 35.5% of respondents to the dentist for less than 1 year. There is a significant correlation between dental health problems mouth against mouth dental health knowledge of pregnant women and dental health care visits. Yoto research results, H, Anindita.PS and Mintjelungan.C (2013) about the image of gingivitis in pregnant women, found 86% of pregnant women experience gum inflammation from mild to severe. Hiraya research results, M, (2014), said tooth brushing methods of assistance, proven to reduce the percentage of poor oral hygiene worth of 16.67% to 0% and increase the percentage oral hygiene is well worth from 16.67% to 58.33 %.

RESEARCH PURPOSES

Is to know the difference knowledge, attitudes, behaviors and gingival status pregnant mother by dental health education with the coaching methods of brushing teeth with no guidance The Puskesmas II South Denpasar Year 2017.

METHOD RESEARCH

The design of this quasi-experimental or quasi-experimental design with pretest and posttest study design. Subjects were divided into two groups: the treatment group and the control group were held in South Denpasar Health Center II in July-August 2017. The study population are pregnant women who come to the health center II Denpasar poly KIA south in July-August 2017 carried out by random sampling.

RESEARCH RESULT

Knowledge

Analysis of respondents' average knowledge in the pre-test and post-test between the treatment and control groups can be seen in Figure 1

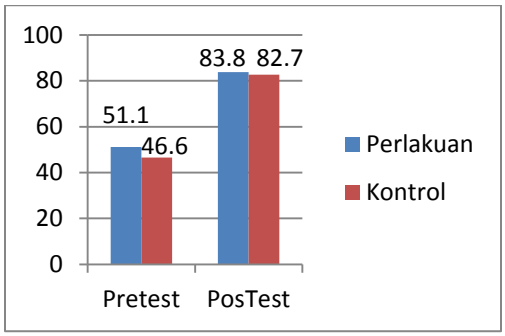

Figure 1. Mean Difference Analysis Respondents Knowledge in Pre-test and post-test between treatment group and control group

Figure 1 shows there are differences between the mean knowledge of oral health in the pre-test and post-test, both the treatment group and the control group. The mean knowledge both treatment groups during the pre-test is at a level sufficient category and an increase in the average after being given oral health education into the average in both categories. Based on statistical analysis, no significant difference in the mean knowledge of the respondent before treatment (pre-test) and after treatment, both the treatment group and the control group (p> 0.05). Mean post-test knowledge, the treatment group (83.8) and control group (82.7). The mean both groups are in the good category, statistically showed no significant difference between the respondents' knowledge mean treatment group with the control group after a given intervention (p> 0.05).

Attitude

The results of the analysis of the average value of the respondents' attitudes in the pre-test and post-test between treatment groups with the control group can be seen in Figure 2:

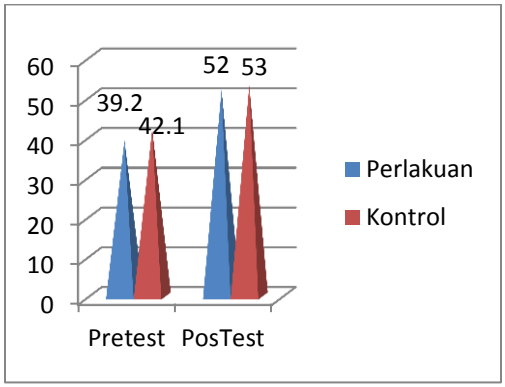

Figure 2. Mean Value Analysis Differences in Attitudes of Respondents

Pre-test and post-test between groups

Treatment of I with treatment group II

Figure 2 showed the average value of the respondents' attitudes in the pre-test and post-test with the results of treatment group (39.2) is lower than the control group (53). The mean value of the respondents' attitudes both groups during the pre-test in the category enough. Based on statistical analysis, no significant difference in the mean value of the respondents' attitudes before treatment (pre-test) between treatment groups with controls (> 0.05). The mean value of the attitude of the respondents in the post-test, the treatment group (52) and the control group (53). The mean value of the attitude of the respondents in both groups in the post-test are in good category, statistically no significant difference between the mean value of the respondents' attitudes to the treatment group with a control group (p> 0.05).

Behavior

The results of the analysis of the behavior of respondents in rerta *pre-test* and post-test between the treatment group Treatment group II can be seen in Figure 3:

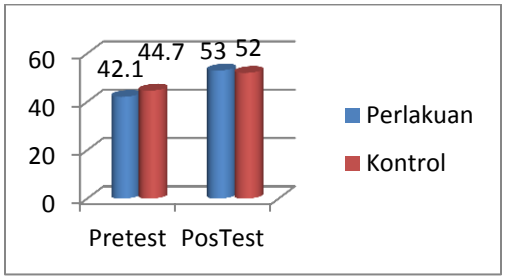

Figure 3. Mean Difference Analysis Respondents behavior value on

Pre-test, Post-test and Post-test between groups

Treatment of I with the control group

Figure 3 shows the differences between the mean value of the behavior of respondents in the pretest and post-test with the results of treatment group mean pretest score (42.1) and control group (44.7). The mean value of the behavior of respondents in both groups before treatment, are in enough categories, based on statistical analysis, no significant differences in the behavior of respondents before treatment (pre-test) between the group treated with control (p> 0.05). The mean value of the behavior of post-test in the treatment group (53) and control group (52). The mean value of the behavior of two groups in the post-test are in good category, statistically no significant difference post-test value of the treatment group and the control group (p> 0.05).

Gingival status of pregnant women

The results of the analysis of gingival status mean pregnant women *pre-test* and post-test between the treatment group Treatment group II can be seen in Figure 4:

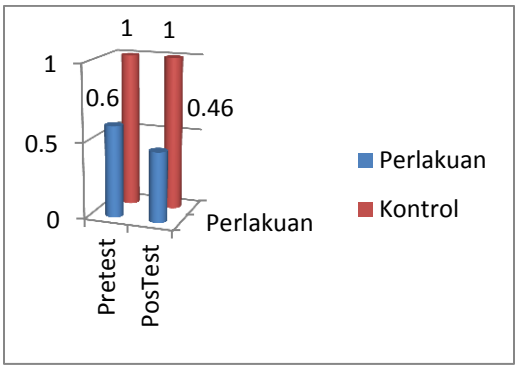

Figure 4. Mean Difference Analysis gingival Status Respondents in the pre-test and post-test treatment group and control group

Figure 4 shows the differences between the mean score of the status of the gingival pre-test and post-test with the results of the analysis of the pre-test in the treatment group (0.6) and control group (1), meaning that scores the status of gingival treatment group was lower than the control group, but both include the category mild inflammation. Based on statistical analysis, no significant difference in mean gingival status respondents (pre-test) between the treatment and control groups (p> 0.05). The mean gingival status post-test, treatment group (0.46) was lower than the control group (1). This means that the treatment group showed no decrease in scores gingival status before 0.6 became 0:46, but the category still includes mild inflammation,

Analysis (Paired sample t-test)

The results of the analysis of respondents' increased knowledge of *pre-test* to post-test in the treatment group and the control group, can be seen in Table 1.

Table 1. Mean Increased Knowledge, Attitude, Behavior and gingiva Status Respondents from pre-test to post-test in the treatment group and a control group

variables	The treatment group			The control group		
	Average		Enhancement	Average		Enhancement
	pre	*Post*		*pre*	*Post*	
Knowledge	51.1	83.8		46.6	82.7	
Pre-test to Post-test			32.7			36.1
Attitude	39.2	52		42.1	53	
Pre-test to Post-test			12.8			10.1

behavior	42.1	53		44.7	52	
Pre-test to Post-test			10.9			7.3
Status gingiva	0.6	0.46		1	1	
Pre-test to Post-test			0.14			0

Table 1 shows that there is an increase in the average knowledge of the pre-test to post-test in both groups. In the treatment group increased an average knowledge of the pre-test to post-test by a margin of (32.7) and in the control group increased an average knowledge of the pre-test to post-test with a difference (36.1). A statistically significant increase in mean significant knowledge in both groups (P <0.05).

The results of the analysis of the increase in the average value of the respondents' attitudes from pre-test to post-test in Table 1 show, The treatment group had increased more than in the control group, namely, the treatment group increased the average value of the attitude of the pre-test to post-test with a mean the difference between 12.8 and the control group there was an increase of the post-test to post-test with a mean difference of 10.1. A statistically significant increase in the average number of significant attitude in both groups (p <0.05).

The results of the analysis of the increase in the average value of the behavior of respondents from pre-test to post-test treatment group was higher than the increase in the control group to the treatment group increased the average value of the behavior of the pre-test to post-test with a difference of 10.9 and in the control group an increase from pre-test to post-test with a difference of 7.3. A statistically significant increase in the average number of significant behaviors in both groups (p <0.05).

Results of regression analysis mean score of gingivitis pregnant from pre-test to post-test, showed the treatment group experienced a decrease in mean score of gingivitis is higher compared with the control group, ie the treatment groups decreased the mean scores from pre-test to post-test with a mean difference of 0.14 and in the control group did not decline from the post-test to post-test with a mean difference of 0. in statistics show an increase in gingival status of pregnant women significantly from pre-test to post-test in the treatment group (p <0 , 05) and no increase in gingival status in the control group (p> 0.05).

Analysis delta (difference increase/decrease)

Delta analysis is done to see the difference in the increase/decrease from pre-test to post-test: knowledge, attitude, behavior and gingival status of pregnant women between the treatment group and control group, can be seen in Table 2:

Table 2. Summary of Analysis Results Delta from pre-test to post-test Knowledge, Attitude, Behavior and gingival status of pregnant women Respondents between treatment groups with the control group

variables	The mean (Mean) ± SD		t	p	Information
	Treatment	Control	df = 38		
Knowledge	32.7± 16.70	36.1 ± 14.06	-3.4	.771	Not significant
Attitude	12.8 ± 5.52	10.1 ± 3.51	2.7	0.03	Significant
behavior	10.9 ± 4.75	7.3 ± 1.71	3.6	0,00	Significant
gingival status	0.14 ± 0.47	0 ± 0.39	0.14	0.02	Significant

Table 2 shows that the increase in the average the highest among the four variables of the study, is a behavioral variables. Distribution delta analysis results, namely, an increase in the average

knowledge of the pre-test to post-test in the treatment group; 32.7 and the control group; 36.1, there is a difference; -3.4. The treatment group was lower than the control group. Statistically, there is a significant increase in the mean difference between treatment groups with the knowledge of the control (p <0.05). The increase in the average value of the attitude of the pre-test to post-test in the treatment group; 12.8 and the control group; 10.1, there is a difference of 2.7. The treatment group was higher compared with the control group. Statistically significant differences increase in the average number of respondents attitudes between the treatment group and control group (p <0, 05). The increase in the average value of the behavior of the pre-test to post-test in the treatment group; 10.9 and the control group; 7.3, there is a difference of 3.6. The treatment group was higher compared with the control group. Statistically, there is a significant difference between the behavior of the increase in the average value of the group treated with control (<0.05). Increased mean gingival status of pregnant women pre-test to post-test II in the treatment group; 0,14 and control groups; 0, there is a difference; 0.14. Statistically significant differences mean an increase in gingival status of pregnant women between the treatment groups with controls (p = 0.02 <0.05). Statistically, there is a significant difference between the behavior of the increase in the average value of the group treated with control (<0.05). Increased mean gingival status of pregnant women pre-test to post-test II in the treatment group; 0,14 and control groups; 0, there is a difference; 0.14. Statistically significant differences mean an increase in gingival status of pregnant women between the treatment groups with controls (p = 0.02 <0.05). Statistically, there is a significant difference between the behavior of the increase in the average value of the group treated with control (<0.05). Increased mean gingival status of pregnant women pre-test to post-test II in the treatment group; 0,14 and control groups; 0, there is a difference; 0.14. Statistically significant differences mean an increase in gingival status of pregnant women between the treatment groups with controls (p = 0.02 <0.05).

DISCUSSION

Based on the results of the initial analysis of the characteristics of respondents in the treatment group and the control group (dental health education with the coaching methods of brushing with no coaching), there are no significant differences or frequency distribution comparable level of knowledge, attitudes and gingival status of pregnant women (Table 1).

Knowledge

The results of the analysis of the increase in the average value of the respondents' knowledge of the pre-test to post-test, indicating that there is a significant mean improvement in both groups (p <0.05). Increasing the average value of the respondents' knowledge in both groups, because the two groups have been given dental health education, although there are differences in treatment between the treatment group and the control group, the treatment group was added by the method of coaching brushing with demonstrating how to brush teeth in the model jaw and taught movement brushing, while the control group was not accompanied by coaching brushing teeth. Provision of dental health education interpersonal implemented in this study affect the respondents' knowledge. The results are consistent with the opinion of Poernomo (2007) who said dental health education is a process that is useful for creating a situation or condition that can affect individual behavior towards oral health.

Result analysis of the delta *pre-test* to post-test found a mean increase of knowledge from pre-test to post-test in the first treatment group and the control group, ie there is a difference (-3.4). The increase in the average knowledge in the treatment group was lower than the control group, but statistically no significant difference between the increase in the average value of knowledge of the group treated with control (p> 0.05). The results of this analysis showed that the increase in the average value of knowledge between the treatment groups was given a dental health education with the coaching methods of toothbrushing sideband ing with a control group who were given oral health education without coaching methods of brushing teeth.

An increase compares to this, due to the treatment group and the control group dental health education with the same material, while the difference in treatment according to the treatment group was added to the coaching brushing teeth. Mentoring brushing carried out by the researchers in this study had no effect on the improvement of knowledge of dental health, because the activities guiding tooth brushing is done after both groups were given education on dental health, whereas the increase in knowledge is the influence of knowledge in mind the respondent at the time given education dental health interpersonal at the time of the study. The results support the theory Purnomo (2007) which states that the knowledge gained from education was planned and arranged either through formal training and education.

It was concluded that the hypothesis that differences in knowledge of dental health of pregnant women who were given oral health education with the coaching methods of brushing teeth with no guidance, it is unacceptable.

Attitude

The results of the analysis of differences between the mean value of the respondents' attitudes on *pre-test* showed no significant difference between the treatment group and the control group ($p > 0.05$). Analysis of the average number stance after treatment (post-test) between the treatment group and control group, showed no differences between the mean values are significant manner ($p > 0.05$). There was no significant difference between the mean value of the attitude of the group treated with the control group after receiving treatment, because in both groups were given a dental health education. Dental Health Education is a process that is useful for creating a situation or condition that can affect individual behavior towards oral health. Could mean that Knowledge is the domain that is essential for the formation of a person's actions. Treatment difference between the treatment group and the control group was on the coaching method brushing, namely, the treatment group was given additional coaching methods brushing teeth after being given education on dental health, while the control group without a mentoring method of brushing teeth. The results of the analysis of the increase in the average value of the respondents' attitudes from pre-test to post-test, showed significant improvement in both groups. An increase in the average value of the attitude in both groups, because the two groups have gained a dental health education to respond to the information has been received well, thus supporting the theory put forward by Mar, at (1984, cit., Budiharto, 2009) which says that the attitude seen as a result of learning, not the result of development or something derived. The results of this analysis also support the idea Malvitz (1983, cit, Widodo, 1998), which says that through dental health education will lead to attitude and positive behavior towards oral health.

The results of the analysis of the delta of the pre-test to post-test, shows the differences in the increase in the average number of significant attitude between the treatment groups ($p < 0.05$). The mean increase in the value of the attitude in group I; 12.8, while the control group; 10.1 there is a difference; 2.70. The treatment group had a higher mean difference compared with the control group. An increase in the average value of the attitude of the higher in the treatment group was given a dental health education with the coaching methods of brushing, due to attitude is the result of the socialization process, which reacts in accordance with the form of stimulus objects.

The results support the idea Guilbert (1977, cit., Budiharto, 2009), which says that attitude is the result of the socialization process, which reacts in accordance with the form of stimulus objects. The results of this analysis also support the idea Bruno (1987, cit., Shah, 2009) as saying, attitude is the mental outlook or relatively sedentary tendency to react in a way good or bad of a person or a particular item. It was concluded that the hypothesis that there are differences in the attitude of pregnant women who were given oral health education with the coaching methods of brushing teeth with no guidance, acceptable

Behavior

The results of the analysis of differences between the mean value of the behavior of respondents in *pre-test* and post-test in both groups were obtained: At the time of the pre-test is not a significant difference between the behavior of respondents with control treatment groups ($p > 0.05$). Analysis of differences between the mean

value of the behavior after treatment (post-test) showed a significant difference between the treatment group and control group ($p < 0.05$). The results of the analysis of the increase in the average value of the behavior of respondents from pre-test to post-test showed an increase in the average number of significant behaviors in both groups ($p > 0.05$). An increase in the average number of significant behaviors in both groups, due to the respondent after receiving dental health education, become aware of new information about dental health education he received, so they began to be interested in knowing more about how to brush teeth, then began to assess whether and start trying to do way of brushing teeth or not and then began to try brushing the teeth corresponding taught when receiving dental health education. The results of this analysis support the theory Roger, that someone will follow or embrace new behaviors through the stages; aware of the new information, interested to know more than assess and try to do. The results of this analysis also support the statement that someone will follow or embrace new behaviors through the stages; aware of the new information, interested to know more than assess and try to do. The results of this analysis also support the statement that someone will follow or embrace new behaviors through the stages; aware of the new information, interested to know more than assess and try to do. The results of this analysis also support the statement MOH (1995), that a dental health education efforts are being made to change the behavior of individuals, groups or communities, so as to have the ability and habit of healthy living behavior towards oral health. The results support the opinion Karefa (1969, cit., Budiharto, 2009) who said dental health education delivered to a person or the public about dental health is expected to change the behavior of an individual or community dental health.

Results of the analysis showed a difference delta increase in the average value of the behavior of the pre-test to post-test between treatment group and control group. Differences increase in the average value of the behavior between the group treated with the control group can be seen from the difference between the increase is in the group treated with a mean difference; 10.9 and the control group with a mean difference; There are differences in the mean difference 7.3; 3.6. The treatment group was higher compared with the control group. Statistically, there is a significant difference between the behavior of the increase in the average value of the group treated with control ($p < 0$, The results of the analysis in this study in accordance with the opinion Notoatmodjo (2003) analyze that, which causes a person's specific behavior is for their thoughts and feelings in the form of knowledge, which is derived from his own experience or the experience of others) It was concluded that the hypothesis which says there is a difference in the behavior of pregnant women who were given oral health education with the coaching methods of brushing with no guidance can be accepted.

Status gingiva of pregnant women

The analysis of pretest (before treatment), showed no significant difference between the treatment group and control group ($p > 0.05$). The results of the analysis of gingival status mean pregnant women after a given treatment (post-test I) there are significant differences mean the gingival status of pregnant women between the treatment group and control group ($p < 0.05$).

The results of the analysis of the average increase in the gingival status of pregnant women in each treatment group showed a significant increase in the mean of the pre-test to post-test in the treatment group ($p < 0.05$) and no increase in gingival status in the control group ($p > 0.05$). An increase in the average gingival status of pregnant women significantly in the treatment group I, due to the respondent received dental health education along with coaching brushing teeth. Mentoring brushing is done to pregnant women lead to significant changes in the treatment group. This is due to the coaching methods of brushing is done at the time of this research has been conducted in accordance taught that brushing with appropriate guidance carefully, so that the state of the teeth and mouth become clean. Conditions were clean mouth will prevent gingivitis (gingivitis), because one cause gingivitis is bacteria which are present in the plaque. This is consistent with the theoryRoger (1974) which says, someone will follow or embrace new behaviors through several stages; a) conscious (awareness), a person aware of the new information, such as brushing teeth to remove dental plaque and prevent gingivitis. Howard

(1969) argues that special training on how to clean teeth properly will lead to significant changes. In this study, changes occur in the gingival status of pregnant women.

The results of the analysis of the delta of the pre-test to post-test in the treatment group showed an increase in mean significant gingival status. The difference in treatment group mean gingival status; 0,14 and control groups; 0 there is a difference; 0.14. Statistically significant differences mean an increase in the gingival status of pregnant women between the control with the control group ($p < 0.05$). The results of this analysis demonstrate that the treatment group was given a dental health education with the coaching methods of brushing teeth providing an increased gingival status of pregnant women were higher than the control group who were given oral health education without coaching methods of brushing teeth. This is because pregnant women can apply appropriate implementation guidance brushing teeth,The results of this study support the notion Feshbein and Ajzen (1975, in Ruminem, 2005), on the relationship between attitudes and behavior that is, if the pattern of positive attitude has been formed, then the resulting intention to carry out a so, however, to arrive at an implementation is very dependent on something like; availability of facilities, other conveniences, as well as the views of others in the vicinity (community leader, father, friends, and others). It was concluded that, the hypothesis there is difference gingiva status of pregnant women who were given oral health education with the coaching methods of brushing teeth with no guidance acceptable.

CONCLUSION

Based on the results of research and discussion, it can be concluded as follows:

- Brushing teeth coaching methods improve attitudes, behavior and status of pregnant women are significantly gingival health center II in South Denpasar Year 2017.

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