IMPLEMENTING A POSTPARTUM CARE MODULE ON THE WOUND HEALING OF PERINEAL LACERATION

Diana Hartaty[1], Gita Nirmala Sari[2], Erika Yulita Ichwan[3], Nurjasmi[4]

[1,2,3,4]Poltekkes Kemenkes Jakarta III

Email: diana.hartaty@poltekkesjakarta3.ac.id

Abstract

Purpose:
The purpose of this study was to determine the effectiveness of implementing postpartum care modules package (Kegel exercise, nutrition chart and vulva/ perineum hygiene) in accelerating perineal wound healing in the proliferation phase. With the fulfillment of these three factors into one module package, wound healing can occur more rapidly in less than 7 days, which usually occurs more than 7 days.
Design/ methods/ Approach:
The population in this study were postpartum mothers with second grade of perineal lacerations who were randomly selected and randomly allocated according to inclusion and exclusion criteria. 18 mothers were selected as the intervention group, while 18 mothers were selected as the control group in different health center. This study used a true quantitative experimental design with posttest only control group design and used the chi-square test analysis for overall categorical variables and logistic regression for multivariable analysis.
Finding/ Result:
There was a significant association between the implementation of the module and the duration of healing of the proliferation phase perineal laceration (p value = 0.002) with a crude ORs (95% CIs) of 60 (3.14 - 1147.29) before being compared with the control group. Mothers who applied the module had a faster opportunity of healing perineal wounds <7 days after delivery compared to the control group with ORs (95% CIs) 5.5 (1.27 - 23.69).
Conclusion:
The application of module packages is very effective in accelerating the healing of perineal laceration in the proliferation phase.

Keywords; wound healing of perineal laceration, Kegel exercise, nutrition, vulva and perineum hygiene.

INTRODUCTION

Postpartum (childbirth) is the period after the placenta is born and ends when the uterus returns to its pre-pregnancy state. This occurs within 6 weeks or 42 days, but will recover completely within 3 months (1) (2). During delivery, the mother may have a perineum laceration (3). There are 4 type of perineal laceration, namely grade 1, 2, 3 and 4 (2). There are three important factors that influence the healing process of perineal laceration, namely mobilization, adequate nutrition and cleanliness of the vulva and perineum (3) (4) (5) (6). Postpartum exercise is a form of mobilization that can be taught to postpartum mothers with perineal lacerations. The exercise that is applied during the postpartum period is Kegel exercises (7)

(8). On the other hand, adequate nutrition is also needed to help speed wound healing (9) (10). The composition of foods with high protein intake will accelerate wound healing (2) (9) (10). The third important factor for wound healing is the cleanliness of the mother's perineum and vulva (11).

Currently there are still many postpartum mothers with perineal injuries that have not been fully implemented properly for information on midwifery care (health information), especially for postnatal care, because the information provided is still limited to health education without media. Sometimes health workers provide health education only with oral explanations. Therefore, a complete understanding of all health information is difficult. This happens because of the limitations of the available media types.

In this case, a guideline was developed as a module package for postpartum mothers with second grade of perineal laceration that contains exercise guidelines, nutrition charts and personal hygiene charts, especially on the vulva and perineum. This was done with the hope that if this module package can be implemented and used as a reference, it will speed up the healing time of perineal wounds.

The purpose of this study was to determine how effective the implementation of the module package content, which includes Kegel exercises, nutrition chart and perineal hygiene, with the length of time for healing perineal wounds in the proliferation phase between group given the module package (intervention group) and compared with group who was given standard guidelines for postpartum care (control group).

RESEARCH METHOD

This research was a quantitative research with an experimental design posttest only control group design. In this study, the experimental group was given treatment then measured the results of the treatment. On the other hand, the control group was not given treatment but measured the outcome of wound healing time at the same time as the intervention group. The sampling process used simple randomization and random allocation. The sampling process was taking samples that meet the inclusion and exclusion criteria. The sample in this study were all postpartum women with grade II perineal lacerations. From the sample count, 18 mothers were selected as the intervention group (out of 64 deliveries for 3 months), while 18 people in the control group (out of 58 deliveries for 3 months) were selected in different places with the same inclusion and exclusion criteria as the intervention group.

The sample population was postpartum mothers with grade II perineal lacerations. Inclusion criteria for determination of this sample were; in good health, not anemic, have a history of uncomplicated labor (uterine atony), babies born in good health, second degree perineal lacerations are sutured with local anesthesia, are willing to fulfill nutritional needs according to the recommendations given, are willing to provide facilities and infrastructure needed in perineal care such as clean water. The final requirement for respondents was that they do not have socio-culture or beliefs related to their inability to implement the module content.

The research process was began with giving respondents the opportunity to use the module for 6 days. Previously, the respondents had been trained to use the module package (Kegel exercise, nutrition chart and vulva and perineum hygiene). Furthermore, the midwife performed a perineal examination and assessed wound healing in the proliferation phase. The indicators of recovery were observed at the six days postpartum examination, including five indicators of dry tissue and no signs of inflammation. The five indicators were the wound looks red and swollen, there is a thin wall of epithelial cells along the wound, there is a whitish collagen tissue that increases the range of the wound, there is a healing hill below the intact line. From the wound suture, around the collagen tissue, sometimes you can find a translucent, reddish tissue called granulation tissue that

breaks easily and bleeds easily when touched (12) (13). If all indicators were met, then the mother was categorized as cured, but if one of the signs was not met then the mother was categorized as not cured. (1) (12) (13) (14).

The implementation module was categorized as compliant and non-compliant for both groups. To strengthen the results, further analysis was carried out by adjusting confounding factors such as maternal age, parity, education, and cultural influences as a multivariable analysis. The association was tested by using chi square, and logistic regression analysis for the intervention group and control group. It was used for data analysis to estimate the probability of faster healing of perineal lacerations by obtaining Odds ratios (ORs) and 95% confidence interval (CI). Multivariable analysis used logistic regression analysis using SPSS.

The ethics commission of the Health Polytechnic of the Ministry of Health, Jakarta II in August 2016 approved this research. Every mother who became a respondent was given an informed concern before the commencement of the research and had signed an informed concern after the explanation of the research.

RESULT AND DISCUSSION

The results of research that has been done about the implementing of module package of Kegel exercise, nutritional chart and perineum hygiene on the duration of perineum wound healing in proliferation phase as follows:

Table 1
Respondent Characteristic based on cases group

Variables		Frequency (n)	Percentage (%)
Mother Age (year)	< 20	1	5.6
	20 - 35	15	83.3
	> 35	2	11.1
Parity	Primiparity	5	27.8
	Multiparity	13	72.2
Education	Basic	4	22.2
	High	14	77.8
Cultural influence	There is influenced	6	33.3
	Not influenced	12	66.7

Based on Table 1, respondent characteristic for the cases group were the dominant of mother age in age of health reproductive (20 – 35 years old) was 83,3%, multi parity (72,2%), have dominant high education (77,8%) and there was no cultural influenced (66,7%).

Table 2
Respondent Characteristic based on control group

Variables		Frequency (n)	Percentage (%)
Mother Age (year)	< 20	2	11.1
	20 - 35	12	66.7
	> 35	4	22.2
Parity	Primiparity	3	16.7
	Multiparity	15	83.3
Education	Basic	5	27.8
	High	13	72.2
Cultural influence	There is influenced	4	22.2
	No influenced	14	77.8

Based on Table 2, respondent characteristic for the control group were the dominant of mother in health of reproductive age (20 – 35 years old) was 66,7%, multi parity (83,3%), have dominant high education (72,2%) and there was no cultural influenced (77,8%).

Table 3
The length time of perineum wound healing on proliferation phase in the intervention group who given module

Using the module	Duration of Wound Healing				Total		P value	OR	95% CI
	Faster (< 7 days)		Appropriate time or slower (≥7 days)						
	n	%	n	%	n	%			
Obedient	10	90,9	1	9,10	11	100	0,002	60	3.14 – 1147.29
Not obedient	1	14,3	6	85,7	7	100		Reference	
Total	11	100	7	100	18	100			

Logistic Regression Analysis

Based on Table 3, there was a significant association between compliance with the use of the module and the duration of healing of grade II perineal lacerations. The probability of mothers who adhered to implementing the module was 60 times faster to recover (95% CI = 3.14-1147.29, p value = 0.002) compared to mothers who did not apply the module

Table 4

The length time of the perineum wound healing on proliferation phases in the control group who given health education standard of postpartum care

Health education using the standard postpartum care	Duration of Wound Healing				Total		P value	OR	95% CI
	Faster (< 7 days)		Appropriate time or slower (≥7 days)						
	n	%	n	%	n	%			
Obedient	2	20	8	80	10	100	0,999	0.75	0.08 – 6.9
Not obedient	2	25	6	75	8	100		Reference	
Total	4		14		18	100			

Logistic Regression Analysis

According to Table 4, there is no significance association between compliance of health education using standard postpartum care with a healing time of perineal laceration.

Table 5
The difference in healing time of perineum wound between control group with an intervention group

Group	Duration of Wound Healing	Total	P value	OR	95 % CI

	Faster (< 7 days)		Appropriate time or slower (≥7 days)						
	n	%	n	%	n	%			
Intervention	11	61.1	7	38.9	18	100	0.04	5.5	1.27 – 23.69
Control	4	22.2	14	77.8	18	100		Reference	

Logistic regression analysis

Based on Table 5, there was a difference in healing time between the control group and the intervention group (p value 0.04). The intervention group had a 5.5 times faster wound healing rate (95% CI = 1.27 - 23.69) compared to the control group.

According to Velnar, T et al (2009), the wound healing process is a characteristic of living tissue, including a physiological response to harmful factors that cause bleeding, contraction of blood vessels with coagulation, activation and complement and inflammatory responses (15). This also means the reform (renewal) of these tissues. Wounds and wound healing occur in all tissues and organs of the body (15). Wounds can heal when the surface can be put back together and normal tissue strength is obtained. The process of wound healing in the proliferation phase will take an average of 7 to 21 days with an average healing time of 7 - 8 days. (7). By utilizing the module package, the wound healing time increased to <7 days from normal time. This module package is equipped with a combination of several activities, namely Kegel exercises, nutrition charts and perineal hygiene performed by postpartum mothers for 1 to 6 days postpartum.

The results of this study are worthy of evidence that the application of a module package equipped with three important activities accelerates the duration of wound healing in the proliferation phase of perineal laceration. This indicates that the application of this module is very effective in accelerating the healing time of perineal wounds.

In this healing phase, it can be accelerated by carrying out several activities that can help accelerate the healing of perineal wounds. In this study, the provision of module packages (Kegel exercises, nutrition charts and perineal hygiene) was more effective in accelerating the healing time of wounds in grade II perineal lacerations. This happened because the compliance of respondents in implementing the module completely was very high compared to other groups that were only provided with health education. The three contents of the module are carried out by complementing and influencing each other.

The use of modules as a media for health education in this study plays an important role. This module is part of a package of guidelines for carrying out any task, starting from the implementation of Kegel exercises, nutrition, and compliance with perineal hygiene. The use of media is an important and effective factor in accelerating the healing time of wounds in perineal lacerations. These results are consistent with research in Tanzania on the benefits of using media in overcoming cases of malnutrition. (16). With the use of media packs, cases of malnutrition in Tanzania, especially feeding to infants and children, were decreasing (16). Other studies on the effective use of media in reducing cases of infection are also found in research on recommendations for using media as guidelines for hand hygiene to prevent the spread of infection (17).

Several studies have found separate results about three types of activity that can affect the duration of healing of perineal lacerations. Several studies have shown that mobilization increases the flow of oxygen to the wound, thereby accelerating wound healing (8)(9). The smooth flow of oxygen to the wound is an important factor, because it will prevent the wound from possible infection and speed up the process of re-

epithelialization of the wound tissue (8)(9). With good mobilization, it will facilitate the flow of oxygen to the wound. This simple and light mobilization process can be recommended to postpartum mothers doing Kegel exercises. In our study, Kegel exercises were associated with wound healing, if performed at least 5 times the duration of exercise per day and a minimum of 10 times for 1 duration of exercise. Several studies have reported that Kegel exercises can improve healing after childbirth due to vascularity of blood vessels in the wound area, reducing edema in the perineal (7) (18). This result is appropriate with our study result.

In our research, a daily menu guide nutrition chart for the 6-day menu model from morning to evening has been provided. The food menu was prepared based on the nutritional needs of postpartum mothers with perineal injuries. The menu consists of foods high in calories and protein. Protein is needed for the growth and replacement of damaged or dead cells. The need for increased nutritional intake for postpartum women who suffer perineal injury is very important. Each part of the nutrition has its respective function to restore damaged cells to their original state (19). Lack of nutrition in general will greatly affect the wound healing process (19) (20). Even due to lack of nutrition will cause infection stimulation and also poor quality wound healing (7) (8) (19).

Meanwhile, personal hygiene performed by postpartum mothers who have completed the module can be complementary in accelerating the healing of perineal wounds in this study. If the skin is injured, micro-organisms that are normally on the surface of the skin can access the underlying tissue (8). In this connection, it is very important to always keep the perineal wound clean. If the wound is dirty, then healing is difficult. Even though if there is a recovery it will give unfavorable results (21). Bathing and cleaning wounds properly is one of the factors that accelerate wound healing (7). With the module package, it is hoped that every postpartum mother can easily learn and carry out coaching. Our results are in accordance with the results from Herawati (2010). The results showed a positive value, which means that the better the perineal wound care with good perineal hygiene affects the acceleration of perineal wound healing (11).

Proper perineal wound care will accelerate wound healing in the proliferation phase due to the process of preventing infection in relation to wound tissue healing. If the perineal wound is not cared for properly it can cause easy infection (22). Perineal laceration infection rate was high with 40.7% cases, and one of the factors that influenced these cases was poor perineal hygiene. (21). This occurs because the perineal area is easily damp because lochia is wet and not cleaned properly. Areas that are too moist will cause the development of bacteria, which can cause infection in the wound in the perineum. Controlling wound hygiene is an important factor in the wound healing process because it can control the possibility of infection in the wound so that the wound can heal faster (21). By carrying out these three activities and being obedient in carrying them out, there will be a chance of healing perineal wounds that are 5.5 times faster than just providing health education according to postnatal care standards.

A Module of implementing of Kegel exercise, nutrition chart and perineum hygiene can be used as standard guidelines for postpartum mothers with second grade of perineal lacerations. In addition, health workers, especially midwives, must be able to use this module in addition to the standard postpartum service guidelines that are usually given to postpartum mothers before returning from the health service facility.

To see the effectiveness of each content module (Kegel exercises, nutrition charts and perineal hygiene), the same research can be carried out further with a larger number of samples and more complex types of analysis methods without a time limit for sampling.

CONCLUSION

This study is very important for postpartum mothers who have second grade of perineum lacerations. The results of this study found that there was an association between compliance with the implementation of the module package (Kegel exercise, nutritional chart and hygiene perineum) with duration of wound healing of second grade of perineum laceration in the proliferative phase in the puerperal mother. The intervention group that implements the module package, then they will have 5.5 times more likely to experience faster second grade of perineal wound healing (<7 days) than the control group.

This module package is very effective in accelerating the healing of second grade perineal laceration in less than 7 days postpartum.

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