

Development of a web-based “Perineal Care Protocol” educational model as assistance for postpartum perineal wound care at home

BINA MELVIA GIRSANG^F, EQLIMA ELFIRA^E

ORCID ID: 0000-0002-6176-8617

ORCID ID: 0000-0003-4407-5090

Department Maternity and Child Nursing, Universitas Sumatera Utara, Indonesia

A – Study Design, B – Data Collection, C – Statistical Analysis, D – Data Interpretation, E – Manuscript Preparation, F – Literature Search, G – Funds Collection

Summary Background. 70% of cases where there is a tear in the perineal tissue at the time of delivery, either spontaneously or with an episiotomy, require perineal suture treatment. Postpartum mothers who experience a delivery with an episiotomy indicate that they experience a higher level of pain.

Objectives. The educational model “Perineal Self Care Protocol” is an educational intervention model with a web-based application method for postpartum mothers at home.

Material and methods. This research was conducted in the working area of the Medan Sunggal and Medan Amplas health centres with a sample size of 138 women who were divided into 2 groups, namely the intervention group (the Medan Sunggal working area) and the control group (the Medan Amplas work area). A sampling technique was carried out by purposive sampling with the aim of identifying self-efficacy assessment is done by “Perineal Self Care Protocol” education module for 4 consecutive days.

Results. In the results of this research, there was an increase in postpartum mother’s self-efficacy with a significance value of $p < 0.005$, where 10 items of self-efficacy that have been shown to increase with the development of education through the website have been found to increase.

Conclusions. In the results of this research, there was an increase in postpartum mother’s self-efficacy with a significance value of $p < 0.005$, where there were 10 items of self-efficacy components that were proven to increase with the development of education through the website.

Key words: education, self-efficacy, educational models, self-care.

Girsang BM, Elfira E. Development of a web-based “Perineal Care Protocol” educational model as assistance for postpartum perineal wound care at home. *Fam Med Prim Care Rev* 2023; 25(2): 160–164, doi: <https://doi.org/10.5114/fmpcr.2023.127674>.

Background

The postpartum period is a time when a mother adjusts physically and psychologically [1]. Mothers who gave birth vaginally experienced a degree of damage in the form of perineal trauma by 70%, whether this was caused by a tear or an episiotomy that required skin tissue suturing. This damage causes perineal pain for 2 weeks postpartum, and in some cases, the mother experiences prolonged pain that causes discomfort during sexual intercourse [2]. The degree of perineal pain and discomfort associated with perineal trauma is often underestimated. Pain is considered to interfere with daily activities such as walking, sitting and urinating and is also a traumatic experience of being a mother [3].

Improper perineal care can eventually affect blood circulation, which can cause bacterial sepsis, local and systemic septic shock and threatens the life of the mother [4], while chronic complications include pelvic floor disorders, such as urinary and faecal incontinence [5, 6], persistent pain, dyspareunia and vaginal prolapse [7]. Emotional changes in postpartum mothers can occur due to perineal pain or signs of other symptoms such as wound infections, urinary incontinence and sexual disorders [8–10].

No specific screening or evaluation of emotional recovery has been found, especially in women with perineal tears during the postnatal period [11, 12]. It is also unclear when emotional recovery occurs, while one of the stress problems of the postpartum period is the lack of attention to the mother’s emotional

state [13]. Emotional adaptability is considered another determinant of self-efficacy [14]. In general, self-efficacy theory is one part of self-knowledge that is very influential in a person’s daily life. Postpartum mothers can successfully pass the critical postnatal period if they have knowledge about postnatal care [15]. Maternal self-efficacy can be interpreted as a reflection of the ability of parents to be able to carry out their duties and roles as mothers in the postpartum period [16]. Leahly-Warren et al. presented the results of their research stating that postpartum mothers’ confidence in their ability to carry out self-care independently has an impact on self-efficacy as desired parents [17].

Objectives

The educational model “Perineal Self Care Protocol” is an educational intervention model with a web-based application method for postpartum mothers at home.

Material and methods

This research was an analytical survey carried out on two groups, namely the intervention group and the control group. The technical implementation of the research were divided into three stages, namely: stage I is the pre-test stage of self-efficacy, stage II is the stage of education (model trial, evaluation and revision, education), stage III is the stage of post-test self-efficacy.



This research was conducted in the working area of the Medan Sunggal Health Centre (intervention group) and the working area of the Medan Amplas Public Health Centre (control group). The study population was postpartum mothers in the working area of Medan Sunggal Public Health Centre and in the working area of Medan Amplas. Sample selection was done with the probability sampling technique, where sampling provides equal opportunities for the population to be selected as a sample.

Results

In this study, univariate and bivariate data was analysed. Univariate data includes the characteristics of postpartum mothers, which consist of how many children, education level, new-born weight, episiotomy, traumatic experiences during childbirth, companions who help mothers during the recovery period and mother’s occupation. The display of the univariate data can be seen in Table 1.

In the table, it can be seen that the educational intervention group with website data was dominated by primiparous postpartum mothers by 26.9%, while in the control group with leaflets, it was dominated by primiparous and multiparous mothers (28.6%). The level of postpartum mother’s self-efficacy in the intervention and control groups both increased from before. In the cross-tabulation data, there is data that tends to change when post intervention and control groups related to each component of the characteristics of postpartum mothers.

The mean difference in each group was obtained by analysing the data using the paired *t*-Test with the results of the analysis in Table 2.

The results of the analysis shown in the table are that each group has an influence on the postpartum mother’s self-efficacy during postpartum self-care. This is due to extreme changes in data, especially in the control group (post-test), where the results of data analysis in the pre-test show a low level of independence in each component of postpartum maternal characteristics, but after receiving education, there is a change in the

Table 1. Characteristics of respondents

Component	Intervention group												Control group			
	Websites (n = 75)		Postpartum mother’s self-efficacy level				Leaflets (n = 63)		Postpartum mother’s self-efficacy level							
	Fre-quency	%	Tall	Low	Tall	Low	Fre-quency	%	Tall	Low	Tall	Low				
Number of children																
1	19	26.9	0	19	3	16	18	28.6		18	1	17				
2	17	23.9	1	16	6	11	16	25.4		16	0	16				
3	17	23.9	1	16	4	13	18	28.6		18	1	17				
4	9	12.7	0	9	2	7	7	11.1		7	0	7				
5	5	7.0	1	4	2	3	4	6.3		4	0	4				
6	1	1.4	0	1	1	0					2					
7	3	4.2	0	3	2	1										
Episiotomy procedure																
yes	48	67.6	3	45	14	34	45	71.4		45	1	44				
no	23	32.4	0	23	6	17	18	28.6		18	1	17				
Baby weight (in grams)																
2500–3000	16	22.5	0	16	3	13	15	23.8		15	1	14				
3001–3500	34	47.9	3	31	12	22	30	47.6		30	1	29				
3501–4000	21	29.6	0	21	5	16	18	28.6		18	0	18				
Traumatic experience of childbirth																
traumatic	12	16.9	0	12	3	9	6	9.5		6	0	6				
not traumatic	59	83.1	3	56	17	42	57	90.5		57	2	55				
Closest person who helps in the postpartum recovery period																
husband only	13	18.3	1	12	4	9	15	23.8		15	1	14				
husband and mother	21	29.6	1	20	4	17	20	31.7		20	0	20				
husband and mother-in-law	23	32.4	0	23	5	18	21	33.3		21	1	20				
mothin-in-law only	10	14.1	1	9	5	5	6	9.5		6	0	6				
only biological mother	1	1.4	0	1	0	1	0			1	0	1				
big family	3	4.2	0	3	2	1	1	1.6								
Level of education																
elementary school	2	2.8	0	2	0	2	6	9.5		6	0	6				
high school graduate	11	15.5	0	11	2	9	54	85.7		54	2	52				
finished high school	56	78.9	3	53	17	39	3	4.8		3	0	3				
graduated college	2	2.8	0	2	1	1										
Type of work																
housewife	51	1.8	3	48	14	37	3	4.8		3	0	3				
working mom	20	28.2	0	20	6	14	60	95.2		60	2	58				

Table 2. Results of bivariate analysis (paired *t*-Test)

Group	Mean	SD	<i>t</i>	<i>p</i>
Intervention group (<i>n</i> = 71)				
Pre-test	25.57	2.61	-11.41	0.000
Post-test	27.98	2.14		
Control group (<i>n</i> = 63)				
Pre-test	24.93	1.740	-10.13	0.000
Post-test	26.07	1.798		

Table 3. Self-efficacy assessment in the intervention and control groups

Components of self-efficacy	Intervention group	<i>p</i>	Control group	<i>p</i>
	Standard deviation		Standard deviation	
Adaptation to pain in the perineal wound area (tearing of the baby's birth canal) during recovery at home	0.503 0.377	0.000	0.502 0.504	0.159*
Prevention of disease complications that can occur in perineal wounds (tearing of the baby's birth canal) during home care	0.531 0.539	0.000	0.500 0.496	0.002
Actions to reduce pain in your perineal wound (tearing of the baby's birth canal) while at home	0.615 0.552	0.000	0.498 0.525	0.001
Completion of household tasks during perineal wound healing (tearing of the baby's birth canal) at home	0.575 0.507	0.000	0.502 0.499	0.159*
Ability to overcome the fear of defecating and urinating due to perineum (tearing of the baby's birth canal) during recovery at home	0.577 0.524	0.000	0.590 0.568	0.004
Fulfillment of basic needs such as eating and resting	0.531 0.472	0.000	0.503 0.490	0.007*
Share and discuss with other mothers the experience of how to treat perineal wounds (tearing of the baby's birth canal)	0.563 0.478	0.000	0.603 0.574	0.013*
Understand the information in performing perineal wound care (tearing of the baby's birth canal) while at home	0.629 0.585	0.000	0.616 0.580	0.001
Carrying out the role of a mother during the recovery of perineal wounds (tearing of the baby's birth canal) at home	0.578 0.513	0.000	0.503 0.481	0.001
Caring for perineal wounds (tearing of the baby's birth canal) while at home	0.580 0.543	0.000	0.533 0.534	0.024*

response that can be seen from the percentage data. However, if examined in more detail on each component of the postpartum mother's self-efficacy assessment, there are several components that show significant differences in the pre- and post-tests, including the ability to adapt to perineal wound pain, the ability to complete household tasks, fulfil the need for food and rest, sharing and discussion with other postpartum mothers, as well as the ability to be independent in caring for perineal wounds while at home, as can be seen in Table 3.

This proves that the ability of the media in persuading postpartum mothers is different. Educational media using websites and leaflets are both media that rely on visuals, but interest in media objects with material explanations and videos is more desirable because they are more interesting and provide something new and provide easy-to-follow explanations.

Discussion

The main goals of postnatal care are to assist and support the mother's recovery to a pre-pregnancy state and to educate the mother about perineal care [18]. Postpartum care is an effort to increase the knowledge of mothers to empower them and to become independent in self and baby care [19]. Information and the provision of postpartum care that is less than optimal is a problem that is often neglected. This is due to the limited involvement of mothers in conveying their complaints during the postpartum period to health workers where cultural

taboos and not feeling important are the reasons most often expressed. Another thing that causes the mother's discomfort is conveying her problem to health workers [20]. Assessment of maternal discomfort during the recovery period is very important, with the results of previous studies being very helpful for health workers to understand mothers who are often silent about serious problems that can be caused by complications that occur due to perineal wounds [1].

Accurate and comprehensive education for postpartum mother's is very important to increase the comfort of mothers undertaking self-care by increasing their knowledge [21]. Technological advances have dramatically increased the use of web-based educational media by providers to provide information efficiently and can increase maternal knowledge during the postpartum period [22, 23].

According to Bandura's social learning theory, maternal self-efficacy proves that parents' belief in their ability to control their functioning can ultimately lead to desired parental self-efficacy [24]. In a study by Azmoude et al. (2015), maternal characteristics such as age, marital status, education level, depression, stress, anxiety, equality, childbirth experience and understanding of the baby's condition are the most influential factors in developing a mother's self-efficacy. There are other factors that can affect a mother's self-efficacy, such as social support and psychological status (e.g. depression and anxiety) [25].

In the results of the study, the traumatic experience of postpartum mothers affected the mother's self-efficacy. The data

shows that the majority of mothers with traumatic experiences have low self-efficacy abilities. As for the intervention in the group using website media, it only increased the mother's self-efficacy by 25% at the time of the post-test. To avoid negative experiences during childbirth, it is important to identify factors that contribute to a good experience, such as: support, control and self-efficacy. Positive birth experiences have been associated with increased mother-child bonding and the mother's ability to perform self-care [26–30]. Training and providing information by utilising technology is a current demand where Internet users are increasing, which is evidence that the tendency to obtain information will be more and more freely accessible through online, including websites. Technological developments are also a bridge for health workers in empowering postpartum mothers to increase self-efficacy during self-care and decrease perineal injuries during postpartum recovery. Technology is seen as more effective, efficient and economical in developing structured topics as a service during the postpartum period. As technology advances, as mentioned above, the Internet is being used as an educational tool, and the positive effects of web-based education have been reported worldwide [31].

Limitations of the study

This research was conducted during the pandemic, so the researchers had to check via Google Forms and telephone calls

to confirm and inquire about the use of the website as an information medium used by postpartum mothers. This made it difficult for the researchers to obtain more respondents.

Conclusions

Website media can be developed to provide information that can be developed continuously according to the needs of the postpartum service programme, especially during the recovery period while at home. Self-care skills education developed with website media has been proven to be able to quickly increase the self-efficacy of postpartum mothers. The use of technology in postnatal health services is quite needed, especially during a pandemic where various services are quite limited for face-to-face meetings.

Acknowledgments. The researchers express their gratitude for the support of various parties in the implementation of this research. The funding provided by Universitas Sumatera Utara Research Institute was a valuable contribution in all processes in this research.

Source of funding: This work was funded from Universitas Sumatera Utara resources.

Conflicts of interest: The authors declare no conflicts of interest.

References

- Fraser D, Cooper M. *Survival guide to midwifery, physiology and care in the Puerperium*. Edinburgh: Churchill Livingstone Elsevier; 2008: 411–414.
- Kettle C, Dowswell T, Ismail KM. Absorbable suture materials for primary repair of episiotomy and second degree tears. *Cochrane Database Syst Rev* 2010; 6: CD000006, doi: 10.1002/14651858.CD000006.
- Hedayati H, Parsons J, Crowther CA. Topically applied anaesthetics for treating perineal pain after childbirth. *Cochrane Database Syst Rev* 2005; 2: CD004223, doi: 10.1002/14651858.CD004223.
- Bowman KG. Postpartum learning needs. *Obstet Gynecol Neonatal Nurs* 2005; 34(4): 438–443.
- Huebner M, Gramlich NK, Rothmund R, et al. Fecal incontinence after obstetric anal sphincter injuries. *International J Gynecol Obstet* 2013; 121(1): 74–77.
- Poen AC, Felt-Bersma RJF, Strijers RLM, et al. Third-degree obstetric perineal tear: long-term clinical and functional results after primary repair. *Br J Surg* 1998; 85(10): 1433–1438.
- Elharmeel SM, Chaudhary Y, Tan S, et al. Surgical repair of spontaneous perineal tears that occur during childbirth versus no intervention. *Cochrane Database Syst Rev* 2011; 8: CD008534, doi: 10.1002/14651858.CD008534.
- Jahani Shourab N, Mirteimouri M, Latifnejad Roudsari R. A case series of severe perineal lacerations during normal childbirth. *Iran J Obstet Gynecol Infertil* 2018; 21(8): 103–114.
- Dunn AB, Paul S, Ware LZ, et al. Perineal injury during childbirth increases risk of postpartum depressive symptoms and inflammatory markers. *J Midwifery Women's Health* 2015; 60(4): 428–436.
- Zare O, Pasha H, Faramarzi M. Effect of perineal massage on the incidence of episiotomy and perineal laceration. *Health (Irvine Calif)* 2014; 6(1): 10–14.
- Dahlen HG, Priddis H, Thornton C. Severe perineal trauma is rising, but let us not overreact. *Midwifery* 2015; 31(1): 1–8.
- World Health Organization. *WHO technical consultation on postpartum and postnatal care*. Geneva: WHO; 2010.
- Razurel C, Bruchon-Schweitzer M, Dupanloup A, et al. Stressful events, social support and coping strategies of primiparous women during the postpartum period: a qualitative study. *Midwifery* 2011; 27(2): 237–242.
- Cutrona CE, Troutman BR. Social support, infant temperament, and parenting self-efficacy: a mediational model of postpartum depression. *Child Dev* 1986; 57(6): 1507–1518.
- Mirzaee K, Taghi Shakeri M. Maternal knowledge on postpartum care in healthcare centers of Mashhad, Iran in 2013. *J Midwifery Reprod Health* 2015; 3(4): 456–464.
- Jones TL, Prinz RJ. Potential roles of parental self-efficacy in parent and child adjustment: a review. *Clin Psychol Rev* 2005; 25(3): 341–363.
- Leahy-Warren P, McCarthy G, Corcoran P. First-time mothers: social support, maternal parental self-efficacy and postnatal depression. *J Clin Nurs* 2012; 21(3–4): 388–397.
- Abed H, Mohamed E-A, Saied El-Nagger N. Effect of Self Perineal Care Instructions on Episiotomy Pain and Wound Healing of Postpartum Women. *J Am Sci* 2012; 88(66): 640–650.
- Fahey JO Shenassa E. Understanding and meeting the needs of women in the postpartum period: the perinatal maternal health promotion model. *J Midwifery Women's Health* 2013; 58(6): 613–621.
- Kline CR, Martin DP, Deyo RA. Health consequences of pregnancy and childbirth as perceived by women and clinicians. *Obstet Gynecol* 1998; 92(5): 842–848.
- Pasinlioglu T. Health education for pregnant women: the role of background characteristics. *Patient Educ Couns* 2004; 53(1): 101–106.
- Wiljer D, Catton P. Multimedia formats for patient education and health communication: does user preference matter? *J Med Internet Res* 2003; 5(3): e19.

23. Schooley B, San Nicolas-Rocca T, Burkhard R. Patient-provider communications in outpatient clinic settings: a clinic-based evaluation of mobile device and multimedia mediated communications for patient education. *JMIR mHealth uHealth* 2015; 3(1): e2.
24. Bandura A. *Self-efficacy: the exercise of control*. New York: W H Freeman/Times Books/Henry Holt & Co; 1997.
25. Azmoude E, Farzaneh Jafarnejade F, Mazloum SR. Predictors for Maternal Self-efficacy in Early Parenthood. *J Midwifery Reprod Health* 2015; 3(2): 368–376, doi: 10.22038/jmrh.2015.4050.
26. Smith CA, Levett KM, Collins CT, et al. Relaxation techniques for pain management in labour. *Cochrane Database Syst Rev* 2011; 12: CD009514, doi: 10.1002/14651858.CD009514.
27. Nilsson C, Lundgren I, Karlström A, et al. Self reported fear of childbirth and its association with women’s birth experience and mode of delivery: a longitudinal population-based study. *Women Birth* 2012; 25(3): 114–121, doi: 10.1016/j.wombi.2011.06.001.
28. Rooks JP. Labor pain management other than neuraxial: what do we know and where do we go next? *Birth* 2012; 39(4): 318–322.
29. Avery MD, Saftner MA, Larson B, et al. A systematic review of maternal confidence for physiologic birth: characteristics of prenatal care and confidence measurement. *J Midwifery Women’s Health* 2014; 59(6): 586–595.
30. Bélanger-Lévesque M-N, Pasquier M, Roy-Matton N, et al. Maternal and paternal satisfaction in the delivery room: a cross-sectional comparative study. *BMJ Open* 2014; 4(2): e004013, doi: 10.1136/bmjopen-2013-004013.
31. Suh W. Web engineering: principles and techniques 2005. Available from URL: <https://www.google.com/books?hl=id&lr=&id=MPQhKGjl6tUC&oi=fnd&pg=PR11&dq=W.+Suh,+%22Web+Engineering%22,+United+States+of+America+and+United+Kingdom:+Idea+Group+Inc,+2005,+p.+77&ots=z1uYNBZb-Z&sig=9RsjevMDmUPGdckqLo-AkRXRr1l>.

Tables: 3

Figures: 0

References: 31

Received: 20.07.2022

Reviewed: 15.09.2022

Accepted: 23.02.2023

Address for correspondence:

Bina Melvia Girsang, MSc

Department Maternity and Child Nursing

Universitas Sumatera Utara

Jl Setiajadi No 91

Medan

Indonesia

Tel.: +62 81389244100

E-mail: binamelvia@usu.ac.id