Original Research

Influence of android-based education on mothers' knowledge in preventing uterine prolapse

Sultina Sarita* [iD], Yustiari, Khalidatul Khair Anwar, and Syahrianti

Department of Midwife, Poltekkes Kemenkes Kendari, Indonesia

Corresponding author:
Sultina Sarita, SKM., M.Kes
Department of Midwife, Poltekkes Kemenkes Kendari
Jl. Jendral A.H Nasution No.G-14 Anduonohu, Kota Kendari
Sulawesi Tenggara 93231, Indonesia
Email: sultinasarita93@gmail.com

Abstract

Background: Pelvic organ prolapse is a common health problem and affects up to 40% of women who have given birth and are over 50 years old**.**

Objective: This study aimed to determine the influence of android-based education on mothers' knowledge in preventing uterine prolapse in the work area of the Poasia Primary Health care, Kendari City, Indonesia.

Methods: This study used a quasi-experiment with one group pretest-posttest design. Data were collected from September to December 2019 among 60 mothers. In this study, the respondents were given education about preventing uterine prolapse in the form of PowerPoint (PPT) and videos using the android application. Descriptive statistics and the Wilcoxon test were used for data analysis.

Results: Of 60 respondents, 52 respondents experienced an increase in knowledge after being given an education. There was a significant effect of education using PowerPoint (PPT) and videos in the android application on the improvement of mothers' knowledge in preventing prolapse uteri ($p = 0.000$).

Conclusion: There may be an influence of the android-based education in increasing mothers' knowledge of preventing uterine prolapse. However, further study is needed to validate the findings.

Keywords: uterine prolapse; knowledge; mothers; health education; android

Background

Uterine prolapse is one form of pelvic organ prolapse and is a condition of falling or slipping the uterus into or out through the vagina due to ligament and fascia failure (Prise et al., 1995). Pelvic organ prolapse is a common health problem and affects up to 40% of women who have given birth and are over 50 years old (Detollenaere et al., 2011). Prolapse uteri ranks second after cystourethrocele (bladder and urethral prolapse). In the American Women's Health Initiative (WHI) study, 41% of women aged 50-79 years experienced Pelvic Organ Prolapse (POP), of whom 34% had cystocele, 19% had rectocele, and 14% had a cystocele uterine prolapse (Barsoom & Dyne, 2013).

Prolapse occurs in the United States in as much as 52% after women give birth to their first child, while in Indonesia, prolapse occurs in as much as 3.4-56.4% of women who have given birth. Cipto Mangunkusumo Hospital data shows that there are 47-67 cases of prolapse every year, and as many as

260 cases in 2005-2010 received surgery (Hardianti, 2015).

Every year about 20,000 women in Indonesia die from complications in childbirth. Disability to death can occur during the process of pregnancy and childbirth. Some women who give birth normally have pelvic floor defects (pelvic organ prolapse), such as tears due to the use of aids during delivery and the length of the labor process. In addition, various pregnancy and childbirth complications can occur, including uterine prolapse (Lestari, 2011). The cause of prolapse is not yet known. However, hypothetically mentioned, the leading cause is vaginal delivery with aterm baby (Mochamad et al., 2011). Epidemiological studies show that vaginal delivery and aging are two major risk factors for the development of prolapse (Cox et al., 2005).

Uterine prolapse is one of the problems of reproductive health (Shrestha et al., 2014). Women with prolapse can experience physical and psycho-social problems (Nizomy et al., 2013). The physical issues they encounter include pain, sexual dysfunction, discharge (abnormal fluid from the vagina), sensations and feelings of heaviness in the vagina, difficulty walking and sitting, infection, and tissue decay. Sixty-eight percent of people with prolapse say they suffer from urinary incontinence (Kuncharapu et al., 2010). Among them, 59% also experienced burning and pain when urinating. These physical problems or disorders are the main contributor to low reproductive health. Although uterine prolapse rarely causes mortality or severe morbidity, it can affect a woman's daily activities and quality of life (Cox et al., 2005).

Women of all ages can experience uterine prolapse, but prolapse is more common in women with grande multipara and old age. Along with the increasing life expectancy, especially among women in Indonesia who reached the age of 74.88 years in 2014, the number of older women will increase, so it is feared that cases of prolapse uteri will also increase (Doshani et al., 2007).

For this reason, efforts are needed to prevent the occurrence of uterine prolapse and to minimize the impact that occurs due to uterine prolapse. One of the efforts that can be made is to provide education. Therefore, this study aimed to determine the influence of android-based education on improving mothers' knowledge in preventing uterine prolapse in the working area of the Poasia Primary Health care, Kendari City, Indonesia.

Methods

Study Design
A quasi-experiment with one group pretest-posttest design was used.

Samples/Participants
The target population in this study were all mothers aged 40-44 years in the working area of the Poasia Primary Health Care, Kendari City, Indonesia. Purposive sampling was used to select the samples based on inclusion criteria: being willing to be a respondent and a multipara mother. The exclusion criteria were mothers who could not provide information or could not speak Indonesian.

Instruments
Data were taken using a questionnaire adopted from a previous study (Kiantimi et al., 2018). The questionnaire used has been validated with the Pearson product-moment formula and has passed the reliability test with a Cronbach alpha value of 0.884 (> 0.600) (Kiantimi et al., 2018). The questionnaire consisted of 14 questions about POP in five material subtopics. The subtopics consisted of definitions, signs and symptoms, risk factors, treatment, and prevention. The questionnaire was filled out by providing a checklist (√) of the available options. Each question item was given a score of one (1) if it was correct and a score of zero (0) if it was incorrect. The value of each question item was added up, then divided by the total number of questions and multiplied by 100%. Furthermore, it was categorized into two categories of knowledge level, namely, the level of knowledge was classified as good if the score obtained was more than or equal to 75% of all statements. It was classified as less if the score was below 75% (Notoatmodjo, 2003).

Intervention
The intervention carried out by the researchers was education or counseling about preventing uterine prolapse. At first, respondents filled out a questionnaire as a pretest, and then the researchers provided counseling with material exposure via PPT, and each respondent downloaded the module via an application (android). After the presentation of the counseling material, the respondents answered the

questionnaire via PPT and the module via the application (android). The intervention settings were in Posyandu and home, targeting pre-menopausal women aged 40-44.

Data Collection
Data were collected in 3 villages from 5 villages in Poasia sub-districts, including Anduonohu, Matabubu, and Rahandouna, from September to December 2019. The mothers were given education about preventing uterine prolapse in the form of PPT and videos using Android. In addition, the level of knowledge was measured before and after receiving health education related to uterine prolapse prevention using questionnaires (pre and posttest). Data were collected by the researchers, including the chairman and two members, and assisted by one midwife as a research assistant.

Data Analysis
The data were analyzed in two stages. First, univariate analysis was used to determine the mothers' level of knowledge in preventing uterine prolapse (pre and posttest). Second, bivariate analysis was carried out to compare the mean of the two variables using the Wilcoxon test.

Ethical Consideration
This study was approved by the Polytechnic of Health Ministry of Health Kendari (number UT.01.01/1/4665/2019). Prior to data collection, an informed consent was signed by each respondent.

Results

Characteristics of the Respondents
Table 1 shows that the majority of respondents by age category were 28 years old (n = 12, 20%) and 30 years old (n = 12, 20%). Based on parity, most respondents had given birth twice (n = 35, 58.3%).

Mother's Level Knowledge in Preventing Uterine Prolapse
Table 2 shows that mothers' knowledge before education using android was mostly in the category of less knowledge as many as 52 people (86.7%). On the other hand, respondents with good knowledge before being given education using android were as many as eight people (13.3%). However, after the intervention, the knowledge was increased, and all respondents had good knowledge.

Table 1 Characteristics of the respondents

Variables	n	%
Age (year)		
25	2	3.3
26	3	5
27	4	6.7
28	12	20
29	4	6,.7
30	12	20
31	2	3.3
32	8	13.3
33	3	5
34	5	8.3
35	5	8.3
Parity		
2	35	58.3
3	19	31.7
4	5	8.3
5	1	1.7

Table 2 Mother's level of knowledge in preventing uterine prolapse before intervention

Pretest	n	%	Posttest	n	%
Good	8	13.3	Good	60	100
Less	52	86.7	Less	0	0

The Influence of Android-based on Mothers' Knowledge in Preventing Uterine Prolapse
Table 3 shows that 52 respondents whose knowledge has increased after intervention, and eight people have not but remained knowledgeable in both pretest and posttest categories. Based on the normality test results, the research data were not normally distributed, so Wilcoxon test was used. The study showed a difference in knowledge about uterine prolapse before and after being intervention (p = 0.000). It also shows the effect of health education using android on increasing mothers' knowledge of preventing uterine prolapse.

Table 3 The influence of android-based education on mothers' knowledge in preventing uterine prolapse

Knowledge	Negative Rank	Positive Rank	Ties	p^*
Pretest-Posttest	0	52	8	0.000

*Wilcoxon test

Discussion

The study results showed that there was an influence of education using android on increasing mother's

knowledge in the prevention of uterine prolapse. However, the education was given for various purposes such as improving the degree of health, preventing diseases and injuries, improving or restoring health, and improving the ability to cope with health problems such as empowerment (Kementerian Kesehatan Republik Indonesia, 2016).

In this study, it can be seen that before giving health education using an android about prolapse, the mothers' knowledge was in the less knowledge category (86.7%) about prolapse that can experience physical and psycho-social problems. Physical problems they can encounter include pain, sexual dysfunction, discharge (abnormal fluid from the vagina), sensation and heavy acidification in the vagina, difficulty walking and sitting, infection, and decay of tissues. Furthermore, the respondents also did not understand that women of all ages can experience uterine prolapse, where prolapse is more common in women with grande multipara and old age (Nizomy et al., 2013). Contrarily, after the health education using android, all respondents (100%) had good knowledge in correctly answering questions about how women with prolapse uteri can experience physical and psycho-social problems.

The researchers were aware of the limitations of the study with only using one group. However, the study results can be a basis for developing further studies to validate the findings, especially using control or comparison groups.

Conclusion

There may be an effect of health education using android in increasing mothers' knowledge of preventing uterine prolapse. However, further study is required to confirm the findings. It is noted that health education using android is applicable for women of all ages to disseminate information, especially to prevent prolapse.

Declaration of Conflicting Interest
The authors declare no conflict of interest in this study.

Author Contribution
Formulating research problems (SS), developing theories and designing methods (Y & KK), collecting data (KK & S), analyzing data (Y & KK), interpreting data, compiling results and discussion (SS, Y, KK, & S), revise and edit the publication manuscript (S, Y, KK, & S). All authors have approved the final draft of the manuscript before submitting it for publication.

Author Biographies
Sultina Sarita, SKM., M.Kes is a Master in Maternal and Child Health Management at Diponegoro University, Semarang, Indonesia.
Yustiari, SST., M.Kes is a Master of Maternal and Child Health Management at Diponegoro University, Semarang, Indonesia.
Khalidatul Khair Anwar,S.SiT, M.Keb is a Master of Midwifery at Hasanuddin University, Makassar, Indonesia.
Syahrianti, S.SiT., M.Kes is a Master in Maternal and Child Health Management at Diponegoro University, Semarang, Indonesia.

References
Barsoom, R., & Dyne, P. (2013). Uterine prolapse in emergency medicine. Medscape. https://emedicine.medscape.com/article/797295-overview

Cox, S., Werner, C., & Hoffman, B. (2005). *Williams obstetrics 22nd Edition study guide.* New York: McGraw-Hill Professional.

Detollenaere, R. J., den Boon, J., Stekelenburg, J., Alhafidh, A. H., Hakvoort, R. A., Vierhout, M. E., & van Eijndhoven, H. W. (2011). Treatment of uterine prolapse stage 2 or higher: A randomized multicenter trial comparing sacrospinous fixation with vaginal hysterectomy (SAVE U trial). *BMC Womens Health, 11*, 4. https://doi.org/10.1186/1472-6874-11-4

Doshani, A., Teo, R. E., Mayne, C. J., & Tincello, D. G. (2007). Uterine prolapse. *BMJ, 335*(7624), 819-823. https://doi.org/10.1136/bmj.39356.604074.BE

Hardianti, B. C. (2015). *Faktor-faktor yang berhubungan dengan kejadian prolapsus uteri di RSUP Dr. Kariadi Semarang.* Semarang: Faculty of Medicine.

Kementerian Kesehatan Republik Indonesia. (2016). *Promosi kesehatan.* Jakarta: Kementerian Kesehatan Republik Indonesia

Kiantimi, N. P. O., Putra, I. G. M., & Manuaba, I. B. G. F. (2018). Tingkat pengetahuan tentang prolaps organ panggul pada perempuan yang berolahraga gym di tempat gym khusus perempuan wilayah Denpasar Selatan tahun 2017. *Intisari Sains Medis, 9*(3). https://doi.org/10.15562/ism.v9i3.237

Kuncharapu, I., Majeroni, B. A., & Johnson, D. W. (2010). Pelvic organ prolapse. *American Family Physician, 81*(9), 1111-1117. https://doi.org/10.1891/9780826159311.0017q

Lestari, D. (2011). *Analisis Faktor yang berhubungan dengan kejadian prolaps uteri pada pasien kunjungan baru di Poli Kandungan Rsud Dr Soetomo Surabaya.* Surabaya: Universitas Airlangga.

Mochamad, A., Ali, B., & Prabowo, R. P. (2011). *Ilmu kandungan: Kelainan letak alat-alat genital*. Jakarta: PT Bina Pustaka Sarwono Prawirohardjo.

Nizomy, I. R., Prabowo, R. P., & Hardianto, G. (2013). Correlation between risk factors and pelvic organ prolapse in gynecology outpatient clinic, Dr. Soetomo Hospital Surabaya, 2007–2011. *Majalah Obstetri & Ginekologi, 21*(2), 61-66.

Notoatmodjo, S. (2003). *Prinsip-prinsip dasar ilmu kesehatan masyarakat*. Jakarta: Rineka Cipta, 10.

Prise, S. A., Wilson, L. M., & Anugerah, P. (1995). *Patofisiologi: Konsep klinis proses-proses penyakit*. Jakarta: EGC

Shrestha, B., Onta, S., Choulagai, B., Poudyal, A., Pahari, D. P., Uprety, A., . . . Krettek, A. (2014). Women's experiences and health care-seeking practices in relation to uterine prolapse in a hill district of Nepal. *BMC Womens Health, 14*, 20. https://doi.org/10.1186/1472-6874-14-20