UNIVERSITI PUTRA MALAYSIA

EFFECTIVENESS OF THEORY-BASED INTERVENTION USING SOCIAL MEDIA TO REDUCE URINARY INCONTINENCE AMONG POSTPARTUM WOMEN IN HEBRON CITY HOSPITALS

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By

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September 2020

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Urinary incontinence (UI) is a common condition and closely related to childbirth. Women who give birth are at higher risk of developing UI and prefer to follow a pelvic floor muscle exercise (PFME) program to sustain or strengthen pelvic floor muscle weakness and UI in prenatal and later life compared to women who have not given birth to a baby. Pelvic floor muscles exercises are considered by the International Continence Society as the first line of treatment for UI. It has an important role to play in UI prevention and treatment, and PFMEs regular practice is a key factor in their efficacy.

The aim of this study was to develop, implement and evaluate a theory-based intervention using social media to reduce UI among postpartum which was conducted in Hebron city hospitals in Palestine.

A randomized controlled trial which is two-arm with a sample size of 110 participants was used to collect data in Al-Ahli outpatient clinic in Hebron City from the admitted postpartum women. The participants were grouped randomly into two groups: first group is a control and the second group is intervention who were follow up at 3 and 6 months. The primary outcome of this study was severity of urinary incontinence. Self-efficacy for exercise, adherence to exercises, perceive benefit, perceive severity, and perceive barrier were the secondary outcomes. Participants in the intervention group received training and education about pelvic floor muscles exercises through WhatsApp follow the concepts of health belief model

A total of 110 participants were involved in this study: 55 in the intervention group and 55 in the control group. The results of the Chi-Square test indicated that at baseline, there were no significant differences between the intervention and control groups by age, number of deliveries, weight, and height, and educational level, type of delivery and medical conditions. The statistics also showed that there were no statistically significant differences between the two groups at baseline regarding the severity of UI and the practice of PFMEs and there were also no differences in perceived barriers, perceived benefits, self-efficacy and cues to action to practise PFMEs. After the intervention, at 3 months and 6 months follow-up, there were significant differences between the intervention and control groups regarding the practice of PFMEs. There were also within-group differences in the intervention group. Friedman's analysis of variance showed that there was a significant difference in respect of the exercise adherence rating scale in the intervention group at baseline, at 3 months and post 6 months. In the intervention group at baseline the mean rank of the International Consultation on Incontinence Questionnaire Short Form (ICIQ) was 3.00, whereas at 3 months it decreased to 1.96 and at 6 months it fell further to 1.04, which indicated that there was a decrease in the severity of UI after the intervention.

The provision of theory-based education delivered through social media is a feasible and effective way of increasing the practice of PFMEs, and can lead to a decrease in the severity of UI.

Key words : Urinary incontinence, postpartum, pelvic floor muscle exercises, health belief model

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KEBERKESANAN INTERVENSI BERASASKAN TEORI MENGGUNAKAN MEDIA SOSIAL UNTUK MENGURANGKAN KEJADIAN INKONTINEN AIR KENCING DI KALANGAN WANITA POSPARTUM DI HOSPITAL SEKITAR HEBRON CITY

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Kencing Tidak Terkawal (UI) adalah keadaan biasa dan berkait rapat dengan melahirkan anak. Wanita yang bersalin berisiko tinggi mengalami peningkatan kencing yang tidak terkawal dan lebih suka mengikuti Program Latihan Otot Lantai Pelvik (PFME) untuk mengekalkan atau menguatkan kelemahan otot lantai pelvik dan kencing yang tidak terkawal dalam kehidupan pranatal dan kemudian berbanding dengan wanita yang belum melahirkan bayi. Latihan otot lantai pelvikdianggap oleh Persatuan Pertubuhan Antarabangsa sebagai rawatan peringkat pertama untuk kencing tidak terkawal. Ia mempunyai peranan penting dalam pencegahan dan rawatan UI, dan amalan tetap PFME merupakan faktor utama dalam keberkesanannya.

Tujuan kajian ini adalah untuk membangun, melaksanakan dan menilai intervensi berdasarkan teori menggunakan media sosial untuk mengurangkan UI di kalangan wanita selepas bersalin di Hospital Bandar Hebron.

Kajian ini adalah percubaan kawalan rawak dengan menggunakan dua tangan. Pada dasarnya, para peserta dipecahkan secara rawak samada kepada kumpulan secara kawalan atau intervensi melalui rawak mudah dengan menggunakan penjana sampel rawak mudah berkomputer. Para peserta adalah wanita selepas bersalin yang mengeluh disebabkan UI yang mendapat rawatan susulan di rumah Al-Ahli di Kota Hebron. Saiz sampel yang dikira adalah 108 peserta.

Sebanyak 110 peserta terlibat dalam kajian ini: 55 dalam kumpulan intervensi dan 55 dalam kumpulan kawalan. Hasil ujian Chi-Square menunjukkan bahawa pada peringkat awal, tidak ada perbezaan yang signifikan antara kumpulan intervensi dan kumpulan kawalan mengikut umur, jumlah penghantaran, berat badan, dan ketinggian, dan tahap pendidikan, jenis penghantaran dan keadaan perubatan dengan nilai P daripada 0.824, 0.823, 0.760, 0.138, dan 0.255. Perangkaan juga menunjukkan bahawa tidak terdapat perbezaan yang signifikan secara statistik antara kedua-dua kumpulan di peringkat awal mengenai keterukan UI dan amalan PFME dan tidak terdapat perbezaan dalam halangan yang dirasakan, manfaat yang dilihat, keberkesanan diri dan isyarat untuk bertindak untuk mengamalkan PFME. Selepas intervensi, susulan pada bulan ke 3 dan bulan ke 6 mendapati perbezaan yang signifikan antara kumpulan intervensi dan kawalan mengenai amalan PFME dengan nilai P iaitu 0.001 dan 0.001. Terdapat juga perbezaan kumpulan dalam kumpulan intervensi. Analisis variasi Friedman menunjukkan terdapat perbezaan yang signifikan berkenaan dengan skala penarafan pematuhan latihan dalam kumpulan intervensi mengikut asas pada bulan ke 3 dan bulan ke 6 dengan P-nilai 0.001. Dalam kumpulan intervensi di peringkat asas, tahap purata International Consultation on Incontinence Questionnaire Short Form (ICIQ) adalah 3.00, manakala pada bulan ke 3 ia menurun kepada 1.96 dan selepas 6 bulan ia terus menurun kepada 1.04, yang menunjukkan bahawa terdapat penurunan keterukan UI selepas intervensi.

Peruntukan pendidikan berasas kanteori yang disampaikan melalui media social didapati sebagai cara mudah dan berkesan dalam meningkatkanamalan PFMEs, dan boleh membawa kepada pengurangan dalam tahap keterukan UI.

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Kata kunci : kencing tidak terkawal, selepas bersalin, latihan otot lantai pelvik, model kepercayaan kesihatan

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LIST OF ABBREVIATIONS

BMI	Body Mass Index
CONSORT	Consolidated Standards of Reporting Trials
DE	Design Effect
HBM	Health Belief Model
ISI	Incontinence Severity Index
PCBS	Palestinian Central Bureau of Statistics
PFM	Pelvic Floor Muscle
PFME	Pelvic Floor Muscle Exercise
SCT	Social Cognitive Theory
UI	Urinary Incontinence

CHAPTER 1

INTRODUCTION

1.1 Background

Births in Palestine increased from 55,673 in 2012 to 65,997 in 2014 (PCBS, 2015). Women who are pregnant or are giving birth are at a higher risk of having urinary incontinence (UI), and they advised to practice pelvic floor muscles exercises (PFME) to prevent or treat pelvic floor muscles disorders and UI during the pregnency period as well as later in life compared to women who have not delivered a baby (Viktrup, Rortveit, & Lose, 2006). Urinary incontinence is the manifestation of any involuntary urinary leakage by the patient (Garcia-Sanchez, Rubio-Arias, Avila-Gandia, Ramos-Campo, & Lopez-Roman, 2015). The disorder is more common in women, and may affect their quality of life. Stress urinary incontinence is the most common form of UI. An approximate 25 million adult American people suffer from some form of UI and that 75–80% of them are women. In general it has been estimated that 200 million people worldwide are affected by UI. In addition, one in four women over the age of 18 experience episodes of spontaneous urine leakage at some point in their lives (Sangsawang & Sangsawang, 2016).

Patient-reported measures can be one of diagnostic measure of UI, such as questionnaires, rating scales, and voiding diaries (Asklund, Stenlund, Nyström, Sjöström, & Umefjord, 2016). Women with UI are advised to practise PFMEs to improve and maintain their PFM strength and thereby reduce the symptoms of UI (Bø, Owe, & Nystad, 2007). Having UI can lead to isolation among affected women; it not only affects their social life, it may also lead to further psychosocial complications. Patients with UI may complain from physical and emotional distress related to UI, including depression and loss of self-esteem (Wilson, Thompson, Nurkic, Lalor, & Briffa, 2015). PFME are considered the first line of management and reliving the sysmptoms for stress UI by the International Continence Society (Fitz et al., 2012). These exercises play a major role in UI prevention and management. However, women with UI may not reveal their problem to their physicians and this may lead to not receiving the necessary care, while some women may not take the symptoms seriously and some of them may find the treatment options unsatisfactory (Asklund et al., 2016).

Previous studies have shown that theory-based PFM education yields better results than interventions that are designed based on the problem. For instance, Wilson (2015) developed theory-based PFMEs for pregnant women and the result showed that this type of intervention had a significant effect. Theory-based interventions can also assist in the explaining why programm are effective or ineffective (Jemmott & Jemmott, 2000; Michie & Abraham, 2004).

Technological advancements have brought about new possibilities for delivering services for individuals without the need for them to attend a health facility (Samuelsson, 2015). The smartphone is one of the new technologies that have been widely accepted by people in latest years, and the number of persons who own a smartphone has increased year by year (Poushter, 2016). smartphone health applications are being used by people with health problems as a way of monitoring their health, and the use of this technology can also lead to an improvement in health outcomes (Bloss et al., 2016).

In recent years, healthcare systems have been faced with a great many challenges. Hence increased home-based self-management for health problems could be one method to meet future demands on the healthcare system. These methods could reduce the need for supervision from the health care system and thus save resources for those who prefer or need treatment in clinics, and this approach may also provide value to patients.

Access to healthcare facilities might be limited for a number of reasons. Thus, there is a need for easy, new, and accessible management to serve these patients and improve their health. Internet-based interventions that focus on treatments have been designed for many health problems, such as headaches (Andersson, Ljotsson, & Weise, 2011).

Previous studies have reported that Internet-based treatments are convenient, time-saving, low cost, and flexible (Ferwerda et al., 2013). This type of treatment is low cost compared with treatment offered at a clinic because healthcare professionals can take care of more patients at the same time than they can by using the face-to-face treatment approach.

The previous literature has shown that an intervention supported by the sending of simple messages via mobile and the Internet can significantly reduce high blood pressure (Bobrow et al., 2018), as well as effectively control and reduce weight following sleeve gastrostomy (Lauti et al., 2018). A similar intervention was proved to be effective in lowering blood glucose levels in obese patients with type 2 diabetes (Kumar et al., 2016). The short message service (SMS) hence seems to be a simple, low-cost but effective method of health promotion.

The finding that Internet-delivered interventions are effective in promoting new health behaviour, especially when reinforced by SMS, has been reported in earlier studies as well (Webb, Joseph, Yardley, Michie, 2010). Patients who have the knowledge and have the information related to a health problem can facilitate change in their health behaviour and disease management. For instance, it has been reported that sending daily educational text messages by SMS improved the knowledge of women and assisted them in the continuous use of oral contraceptives (Castaño, Bynum, Andrés et al., 2012) Text messaging can also

protect patient privacy, and is considered a cost-effective solution for supplying patients with sensitive health information.

The core concepts in behavioural sciences are structured in the form of theories, which helping to develop hypotheses and assumptions about the strategies of the intended intervention programs (National Cancer Institute, 2008). The health belief model is the theoretical model that's most commonly utilized in promoting and educating good health behaviours. The HBM explains why people would or would not use health services, and it is a theoretical cognitive-behavioral model used to predict adherence to healthy behaviors in health prevention research (Rosenstock, 1974a). The HBM has been widely used to plan implement and evaluate health research in different health areas, such as, for example, HIV risk behaviour change, assessment for Alzheimer's disease, and oral health among female students (Rosenstock et al., 1994; Chao et al., 2008; Mazloumi & Rouhani, 2008).

1.2 Problem statement

Urinary incontinence is a common problem in postpartum period and it has been estimated that about 30% of women have UI after childbirth (Price, Dawood, & Jackson, 2010), having UI is socially and financially costly for women themselves and also raises burdens on the healthcare system. So it is important for these women to maintain PFM function and to learn about PFMEs because these exercises are a prescribed conservative first-line treatment for IU (Dumoulin et al., 2010). Education that is timely and accessible and that can educate women about the structure and function of the pelvic floor muscles and the best techniques for correctly carrying out PFMEs to maintain or improve the role of pelvic floor muscles can encourage women to participate in a PFME program. A WhatsApp-based PFME may encourage women to regularly practice PFME. Maintaining or maximizing the functionality of pelvic floor muscles can decrease and prevent UI and thus maintain physical and mental QoL for women as well as reduce any associated healthcare costs.

Urinary incontinence is highly among postpartum women in Palestine, where recent statistics from one hospital in Hebron city showed, out of 1543 women followed up in the postnatal clinic in January, February, and March 2017, 200 of them were experiencing UI.

The main problem facing healthcare providers who treat women with UI is that the women are not practicing PFME adequately at home, Sacomori et al. (2015) found that approximately two thirds of instructed women perform postpartum PFMEs and approximately one third do not intervention that WhatsApp to deliver the intervention will assist women to do PFMEs regularly in their own homes and may reduce the symptoms of UI. According to previous researches there is strong evidence that adherence to PFME is very important in achieving the desired outcome and improving women's health, and it appears from the literatures that due to low levels of program adherence, PFME may not be successful in

minimizing and preventing UI. Therefore there is a need for studies to develop new approaches of delivering PFME and the positive effect that PFME educational programme can have in treating UI and to measure the effect of the adherence to PFME. In this regard, the use of a WhatsApp intervention programme could be a potentially effective new strategy to increase adherence to PFME

There are some barriers to doing these exercises, including not remembering to do them, not perceive the benefits of such programme, not prioritizing the exercises, and a low level of self-efficacy (Asklund et al., 2016). Also, lack of PFME knowledge may reduce the practice of such exercises. The key to reducing postpartum UI lies not just in doing a number of PFMEs, but in practicing them regularly on a daily basis (Mason, Roe, Wong, Davies, & Bamber, 2010). A social media intervention could be one of the method that could be used to minimize the barriers that prevent women from practising PFME and enable them to receive proper treatment to reduce their problem without going to a clinic (Frawley et al., 2015).

1.3 Significance of the study

Physical therapists and other healthcare provider who cares about postpartum women are in a position to provide those women with education that it is aimed at increasing and maintain PFMs strength and thus reducing PFMs disorders and its related problems. It has been shown that reduction on quality of life (QoL) and increased costs to the healthcare system are related to UI (Hay-Smith, Mcclurg, Frawley, & Dean, 2016).

The WhatsApp-based PFMs education program developed and implemented in this study is anticipated to address the gaps found in the PFM education research conducted to date. In addition, it is expected that the use of WhatsApp will make it easy for women to access a PFME programme, and that this in turn will lead to better awareness and knowledge and increase the practice of PFME on a daily basis at home among postpartum women in Palestine. In addition, the findings of this study will assist in the adoption and implementation of community health promotion and education programmes that will lead to a reduce the prevalence of postpartum UI among Palestinian women who are believed to be at high risk due to their high fertility rate that was reported as being as high as 4.1 at the end of 2014 in the West Bank (PCBS, 2016).

Furthermore, it is hoped that this study will also lead to a national preventive plan that will contribute to the promotion of postpartum women health in Palestine if it is incorporated into the guidelines for pre and postpartum care in governmental and non-governmental labour hospitals and clinics in Palestine. Education and strategies on how to increase and maintain pelvic floor muscles strength during the postpartum period may result in a decreased prevalence of UI, which may then lead to reduction in physical, psychological and economic costs for both the patients concerned and for the wider healthcare system.

1.4 Research questions:

The research questions that this research aims to answer are as follows:

i. Are there significant changes in the level of perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action to perform PFME between and within groups at baseline, 3 months and 6 months?

ii. Are there significant changes between and within groups at baseline, at 3 months and at 6 months after the intervention regarding the practice of PFMEs?

iii. Are there significant changes between and within groups at baseline, 3 months and at 6 months after the intervention regarding the severity of UI?

1.5 Research objectives

1.5.1 General objective

The general objective of this study is to determine the effect of a theory-based intervention using social media in reducing the severity of UI among postpartum women in Hebron city hospitals.

1.5.2 Specific objectives

The specific objectives of this study are as follows:

i. To determine whether there are significant changes in the level of perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action between and within groups at baseline, at 3 months and at 6 months after controlling for the covariate

ii. To determine whether there are significant changes between and within groups at baseline, 3 months and at 6 months after the intervention regarding the practice of PFMEs after controlling for the covariate.

iii. To determine whether there are significant changes between and within groups at 3 months and at 6 months after the intervention regarding the severity of UI after controlling for the covariate.

1.6 Research hypotheses

The following research hypotheses were formulated for this study:

i. There are significant changes in the level of perceived severity, perceived benefits, perceived barriers, self-efficacy, and cues to action between and within groups at baseline, at 3 months and at 6 months.

ii. There are significant changes between and within groups at baseline, 3 months and at 6 months after the intervention regarding the practice of PFMEs after controlling for the covariate.

iii. There are significant changes between and within groups at baseline, 3 months and at 6 months after the intervention regarding the severity of UI after controlling for the covariate.

1.7 Definition of terms

The key terms included in this study are set out below:

Health belief model: A model of change in psychological health behavior has been developed to explain and predict health-related behaviors, particularly with regard to the delivery of health services (Janz & Becker, 1984).

Health education: A consciously designed learning experience involving communication aimed at improving health literacy, increasing awareness and developing life skills conducive to individual and community health (World Health Organization, 1998).

Pelvic floor muscles exercises (or training): "Repetitive selective voluntary contraction and relaxation of specific pelvic floor muscles" (Abrams et al., 2010).

Primipara: A woman who is to give birth for the first time (Lee & Shorten, 1999).

Urinary Incontinence (UI): The "complaint of any involuntary leakage of urine" (Abrams et al., 2010).

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