

The Effectiveness of Pelvic Floor Exercises on Postpartum Urinary Incontinence in Women from Low and Middle Income Countries: A Review

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ABSTRACT

To find out the literature reviews on effectiveness of pelvic floor muscle exercises training on postpartum Urinary Incontinence in women from low and middle income countries to improve the maternal quality. In the modern era of life women health is a key indicator to improve one's wellbeing. As the millennium development goals came to a close last year and we entered the new Sustainable Development Goals (SDGs) era, the global health community took stock of accomplishments over the past decades and continuing challenges for the future. Most maternal and infant deaths occur in first 42 days after childbirth.

Keywords: Pelvic floor muscle exercise; Symptoms; Women; Infants; Pregnancy.

INTRODUCTION

Despite the critical importance of this period postnatal care consistently has among the lowest coverage of interventions on the continuum of maternal and child care, with a reported median for the countdown countries at just 28% [1,2]. Tracking and improving the quality and increasing "effective coverage" i.e., coverage of quality postnatal content at facility and community levels should thus be one of the priorities for the new global health agenda [3]. In low-income countries; almost 40% of women experience complications after delivery and an estimated 15% develop potentially life-threatening problems [4]. Maternal health is critical in many countries of the world, and the World Health Organization (WHO 2018) estimates that 99% of maternal deaths happen in Low Middle-Income Countries (LMICs) [5]. A substantial reforms have been made although in the community services for women health but the postpartum and postnatal period receive less attention and the delivery system of some programs are still failing to meet the needs, of which one of them is for postpartum mothers and newborn. Developing countries accounts 99% of all these maternal deaths which is higher in women living in rural areas and poor communities [6]. An estimate shows, of the total global incidence of maternal mortality, 25% occur in India [7]. India observes the largest number of neonatal and maternal deaths in any single country [8]. About 17% of maternal death happens

during child birth itself and between 50%-70% in the postpartum period. The pregnancy related complication occurs throughout the pregnancy, labour, childbirth and in the postpartum period [9]. The common complication associated with postpartum women includes Urinary Incontinence, back pain [10]. These complications may look simple and often neglected by women during pregnancy but these may lead to severe disability and social stigma in the postnatal period. Postnatal period demands a lot of physiological and psychological adaptations to improve postnatal recovery and return to pre pregnancy phase that benefits the mothers. Many of the physiological changes are retrogressive in nature; these changes occur in the body systems during pregnancy that are reversed to the non-pregnancy state. WHO statistics revealed that women at a regular basis do not perform postnatal exercise, as they often get involved in baby care and family responsibility [11].

Women and infants reflect a very poor health status in LMICs hence focus should be on women's education, so that they can fight for their rights. The opportunities to obtain quality post natal care service and education to the mother about its potential are very much an important part in improving women health. So proper guideline and knowledge should be given regarding the outcomes and complications [12]. Stress Urinary Incontinence in women is common and reliable statistic does not exist because of

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social stigma where discussing these issues of women are hidden so management of problem is still in nascent stage in LMICs. Low use of postnatal care services is associated with lack of education, poverty and limited access to health-care facilities is noticed in LMICs as they have to go back to household related work, baby care, and family responsibilities (World Bank 2014) [13]. So the focus should be on women's education, so that they can fight for their rights and provide opportunities to obtain quality post natal care service and education to the mother about its potential are very much an important part in improving women health [12]. A proper guideline should be incorporated related to complication of non-adherence to pelvic floor exercises and a channel to deliver knowledge about the outcomes, benefits and improvement in maternal quality of life in LMIC population by participating in training of pelvic floor exercises.

LITERATURE REVIEW

Type of Review

A wide range of randomized controlled trial, systematic reviews, meta-analysis, non-randomized controlled trial, cohort studies, observational studies, prospective studies, cross sectional studies and WHO regional database (African Index Medicus, Index Medicus for the Eastern Mediterranean Region, Index Medicus for South-east Asian Region and Western Pacific Region Index Medicus), Google scholar *via* library website, grey literature were reviewed.

Population involved

Post-partum women with Urinary Incontinence.

Protocol of review

The process of searching and selecting articles was directed by (PRISMA) guideline by using the following steps. Induction of experimental diabetes

MATERIALS AND METHODS

Step 1

Source: A comprehensive search on PubMed, Google scholar, Science Direct, WHO regional data base, Wikipedia, papers using keywords postnatal exercises, Pelvic Floor Muscle training, Urinary Incontinence, outcome measure, low and middle income countries by using Boolean apparatus AND, OR, IN.

Step 2

Study selection: Randomized control studies, Systematic reviews and Meta-analysis, cohort, observational, cross sectional, prospective study reviews from 1st January 2010 to 1st January 2020 on Pelvic Floor Exercises in postpartum Urinary Incontinence and reviews on LMICs are included. Studies where English translation could not be accessed are excluded.

Step 3

Data extraction: The following data were extracted and entered in Table 1 (Level 1 evidence only) for all included studies. The results are reviewed by the 3 reviewers (TS, SB and RM) separately and final data summary made by consensus.

RESULTS

A total 3787 studies were identified. After duplicates were removed (n=1133), the remaining 1231 articles were screened for eligibility based on their title and abstract. The full text of 114 studies was assessed and of these, 24 studies were included in the review.

Postnatal care in LMICs

World Bank statistics shows by region East Asia and Pacific, Europe and Central Asia, comes under Lower Middle-Income Economies [14]. In low-income countries, almost 40% of women experience complications after delivery and an estimated 15% develop potentially life-threatening problems. In several systematic reviews by Magda Aguiar, Amanda Farley provides data of 41 LMICs where the majority being lower-middle (n=19) and upper-middle income (n=16) countries, they concluded that significant degrees of BPT (Birth Perineal Trauma) cause more than 70% of women having a vaginal birth in LMICs and the reason for this is due to low use of postnatal care services is associated with lack of education, poverty and limited access to health care facilities [1].

In North West and eastern Ethiopia conducted a study in Debre Markos and Kersa town to assess the magnitude and factors associated with postpartum morbidity and pelvic floor disorder and found that the magnitude of postpartum morbidity and pelvic floor disorders often remains silence. This may be due to absence of ANC visit, intrapartum abnormalities, delivery attended by skilled professionals, low level of health seeking and no postpartum visit is a predictor of maternal postpartum morbidity. Women in developing countries do not disclose their problems due to associated social stigma or lack of access to services indicates the silent suffering of many women with pelvic floor dysfunction

Table 1. Articles that have level 1 evidence under each category.

| S. No | Author and title | Objective | Results | Conclusion | Level of evidence | Citation |
|-----------------------------------|---|---|---|---|-------------------|---|
| A) Postnatal care in LMICs | | | | | | |
| 1 | Magda Aguiar, Amanda Farley. Birth-related perineal trauma in Low and Middle Income Countries: A systematic review and meta-analysis. | To collect data on rates of BPT in Low Middle Income Countries (LMICs) through a systematic review and meta-analysis. | Out of 1182 citations reviewed, 74 studies providing data on 334054 births in 41 countries were included. Five stories reported outcomes of birth in the community. In LMICs, the overall rates of BPT were 46%, 24% and 1.4% for episiotomies, second degree tear and OASI respectively. | Compared to high-income settings, episiotomy rates are high in LMIC medical facilities. There is an urgent need to improve reporting of BPT in LMICs particularly with regards to births talking in community settings. | 1 | Matern Child Health J. 2019;23:1048-1070. |

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| 2 | Talie A, Yekoye A. Magnitude and associated factors of postpartum morbidity in public health institutions of Debre Markos town, North West Ethiopia. | To assess the magnitude and factors associated with postpartum morbidity in public health institutions in Debre Markos town. | The magnitude of postpartum morbidity was found to be 101(32.8%). Divorced/widowed women 10.920, women who didn't have ANC follow up 3.710, abnormal labour 3.496, women delivered by doctor 0.111 and women who were not attended postpartum visit 0.088, were the factors associated with postpartum maternal morbidity. | Maternal morbidity in Debre Markos health institution was found to be major maternal health issue. Being divorced/widowed, absence of ANC visit, intrapartum abnormalities, delivery attended by skilled professionals and no postpartum visit were important predictors of maternal postpartum morbidity. | 1 | Pub med Matern Health Neonatol Perinatol. 2018;4:19. |
| 3 | Merga Dheresa, Alemayehu Worku. One in five women suffer from pelvic floor disorders in Kersa district Eastern Ethiopia: A community-based study. | The study was conducted to assess the magnitude of pelvic floor disorders in Kersa district Eastern Ethiopia. | A total of 3432 women participated of which 704 reported at least one type of pelvic floor disorder and 349 reported two or more pelvic floor disorders. The most common PFDs included an over active bladder 15.5%, pelvic organ prolapse 9.5%), stress urinary incontinence 8.3% and anal incontinence 1.9% More than two-thirds of the women with pelvic floor disorders 68.0% reported having severe distress but had never sought health care. | The magnitude of the health problem and the low level of health seeking behavior indicate the silent suffering of many women in the study area. Extrapolating this figure to national statistics would indicate the staggering number of women suffering from pelvic floor disorders in the country. | | BMC Womens Health. 2018;18:95. |
| 4 | Kirti Iyenga. Early postpartum maternal morbidity among rural women of Rajasthan, India: A community-based study. | An intervention on postpartum care for women within the first week after delivery to initiate in a rural area of Rajasthan, India. | | A total of 4,975 women in a population of 58,000, were examined in their first postpartum week. The most common morbidity was postpartum anemia 7.4% of women suffered from severe anemia and 46% from moderate anemia. Other common morbidities were fever (4%), breast conditions (4.9%), and perineal conditions (4.5%). Life-threatening postpartum morbidities were detected in 7.6% of women where 9.7% among those who had deliveries at home and 6.6% among those who had institutional deliveries. | 1 | J Health Popul Nutr. 2012;30(2): 213-225. |
| B) Urinary Incontinence and pelvic floor exercises | | | | | | |
| 1 | Ozge Celiker Tosun, Ulas Solmaz. Assessment of the effect of pelvic floor exercises on pelvic floor muscle strength using ultrasonography in patients with urinary incontinence: A prospective randomized controlled trial. | To evaluate whether the effect of pelvic floor exercises on pelvic floor muscle strength could be detected via ultrasonography in patients with urinary incontinence. | After training, the PERFECT, perineometry and trans-abdominal ultrasonography measurements were found to be significantly improved, and the stop test and pad test results were significantly decreased in the pelvic floor muscle training group, whereas no difference was observed in the control group. | Ultrasonography can be used ultrasonography can be used as a noninvasive method to identify the change in pelvic floor muscle strength with exercise training. | 1 | J Physical Ther Sci. 2016;28(2): 360-365. |

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| 2 | Wu YM, McInnes N, Leong Y. Pelvic floor muscle training versus watchful waiting and pelvic floor disorders in postpartum women: A systematic review and meta-analysis. | To assess the efficacy of postpartum PFMT on these pelvic floor disorders. | 15 RCTs (3845 patients) were included. Women undergoing PFMT less likely report POP symptoms (RR 0.48); very low-quality evidence. There is no significant difference in the number of women with stage II (RR, 0.74); moderate-quality evidence. Fewer women receiving PFMT report the presence of sexual dysfunction (RR, 0.48); low-quality evidence). There is no significant difference in AI symptoms (RR, 1.11). | Postpartum PFMT likely reduces the risk of UI, particularly stress urinary incontinence symptoms. There is currently little evidence about postpartum PFMT and long-term pelvic floor function. | 1 | Female Pelvic Med Reconstr Surg. 2018;24(2):142-149. |
| 3 | Mørkved S, Bo K. Effect of pelvic floor muscle training during pregnancy and after childbirth on prevention and treatment of urinary incontinence: A systematic review. | Systematic review to address the effect of PFMT during pregnancy and after delivery in the prevention and treatment of UI. | | 22 randomized or quasi-experimental trials were found. There is a very large heterogeneity in the populations studied based on the studies with relevant sample size, high adherence to a strength-training protocol and close follow-up, we found that PFMT during pregnancy and after delivery can prevent and treat UI. A supervised training protocol following strength-training principles, emphasizing close to maximum contractions and lasting at least 8 weeks is recommended. | 1 | Br J Sports Med. 2014;48(4):299-310. |
| C) Rehabilitation using pelvic floor exercises and QOL | | | | | | |
| 1 | Hadizadeh-Talasz Z. Effect of pelvic floor muscle training on postpartum sexual function and quality of life: A systematic review and meta-analysis of clinical trials. | To review the effect of pelvic floor exercise on female sexual function and quality of life in the postpartum period. | The search resulted in 347 titles and abstracts, narrowed down to 12 eligible articles. Pooled standardized differences in means of sexual function in both pelvic floor exercise and control group were 0.462. The pooled SMD was 1.294 for sexual quality of life. The pooled SMD was 0.232 for general quality of life. Evidences showed that Pelvic Floor Muscle Training in primi or multi-parous women can boost sexual function and quality of life in postpartum. | Evidences showed that Pelvic Floor Muscle Training in primi or multi-parous women can boost sexual function and quality of life in postpartum. | 1 | Taiwan J Obstet |

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| 2 | Nahid Golmakani, Zahra Zare. The effect of pelvic floor muscle exercises program on sexual self-efficacy in primiparous women after delivery. | To define the effects of an 8-week pelvic floor muscle exercise program on sexual self-efficacy in primiparous women after childbirth. | The results showed significant increase in pelvic floor muscle strength in the intervention group at 4 and 8 weeks after exercises but no significant difference was observed in the control group. There was a significant increase in sexual self-efficacy in the intervention and control groups at 4 and 8 weeks after the start of the study. | The findings showed that 8-week pelvic muscle exercises increase the sexual self-efficacy in women after delivery. | 1 | Iran J Nurs Midwifery Res. 2015; 20(3):347-353. |
| D) Adherence rate to pelvic floor exercises | | | | | | |
| 1 | Sacomori C, Zomkowski K. Adherence and effectiveness of a single instruction of pelvic floor exercises: A randomized clinical trial. | To know the effective in preventing Urinary Incontinence (UI) in a 3-month postpartum period with good adherence rates. | | Although the proposed intervention did not prevent UI symptoms, the adherence rate to PFME was high. | 1 | Int Urogynecol J. 2019. |
| 2 | Jean Hay Smith, Sarah Dean. Pelvic floor muscle training adherence "modifiers": A review of primary qualitative studies. | To locate and summarize the findings of qualitative studies exploring the experience of and adherence to Pelvic Floor Muscle Training (PFMT) to recommend future directions for practice and research. | | Individuals' experience substantial difficulties with capability, motivation and opportunity when adopting and maintaining a PFMT program. Expert consensus was change strategies directed to the "modifiers" of adherence identified in the review may improve PFMT outcomes. | | Department of women's and children's health, Dunedin School of Medicine, University of Otago. |
| E) Guidelines and pelvic floor exercises | | | | | | |
| 1 | Sénat MV, Sentilhes L. Postpartum practice: Guidelines for clinical practice from the French College of Gynecologists and Obstetricians (CNGOF). | To make evidence-based recommendations for the postpartum management of women and their newborns, regardless of the mode of delivery. | | The postpartum period presents clinicians with a unique and privileged opportunity to address the physical, psychological, social, and somatic health of women and babies. | 1 | Eur J Obstet Gynecol Reprod Biol. 2016;202:1-8. |
| 2 | Fritel X, de Tayrac R. Preventing Urinary Incontinence with supervised prenatal pelvic floor exercises: A randomized controlled trial. | To compare, in an unselected population of nulliparous pregnant women, the postnatal effect of prenatal supervised pelvic floor muscle training with written instructions on postpartum Urinary Incontinence (UI). | | Prenatal supervised pelvic floor training was not superior to written instructions in reducing postnatal UI. | 1 | Obstet |

[14,15]. Iyengar, conducted a study among rural women in Rajasthan, India to know the patterns of maternal morbidity in resource-poor countries where in first week study reported that life threatening postpartum morbidities were detected in 7.6% of women, 9.7% among those who had deliveries at home and 6.6% among those who had institutional deliveries. This study adds valuable knowledge on postpartum morbidity affecting women in the first few days after delivery in a low-resource setting. Health programmers should invest to ensure that all women receive early postpartum visits after delivery at home and after discharge from institution to detect and manage maternal morbidity. Further these should also ensure that women are properly screened for complications before their discharge from hospitals after delivery. In 2014, WHO recommended that a mother and her newborn child should receive postnatal care within 24 hours of the birth and then at least three more times i.e., at least on the day three after the birth followed by second week after the birth and after six weeks after the birth [16].

Urinary incontinence and pelvic floor exercises

A randomized controlled trial study was done by Tosun where he demonstrated a statistically significant increase in the strength of the PFM after training in patients with all levels of PFM strength. A supervised pelvic floor muscle training programs individually was prepared and delivered which found to be the most effective method to relieve the symptoms of Urinary Incontinence. Leon Lorios in quasi randomized controlled trial investigate the effects of a pelvic floor training following a birth programme on perineal trauma and concluded that training programme composed of pelvic floor exercises and perineal massage may prevent episiotomies and tears in primiparous women. The pelvic floor programme was associated with significantly lower rates of episiotomies and severe perineal trauma [17,18].

In several systematic reviews Wu has stated Pelvic Floor Muscle Training (PFMT) can often be recommended to treat postpartum Urinary Incontinence (UI). Fifteen RCTs (3845 patients) were included in study, women undergoing PFMT less likely report bothersome Pelvic Organ Prolapsed (POP) symptoms (Risk Ratio (RR), 0.48 (0.30-0.76); very low-quality evidence). There is no significant difference in the number of women with stage II or greater POP (RR, 0.74 (0.45-1.24); moderate-quality evidence). Fewer women receiving PFMT report the presence of sexual dysfunction (RR, 0.48 (0.30-0.77); low-quality evidence). There is no significant difference in Anal Incontinence (AI) symptoms (RR, 1.11 (0.82-1.51)), but PFMT may be more beneficial for women with anal sphincter injuries (standardized mean difference in AI scores, -0.57 (-1.12 to -0.02); low-quality evidence). Women receiving PFMT less likely report UI (RR, 0.44 (0.25-0.75); moderate-quality evidence) with a more pronounced effect on Stress Urinary Incontinence (SUI) [19]. Herbert RD did a study to find out the evidence for alternative exercises to specific pelvic floor muscle training for treatment of stress Urinary Incontinence in women and concluded that other exercises like abdominal training, paula method, Pilates exercises is still in testing phase [20].

In few studies done by Siv Morkved, pelvic floor muscle exercises training found to be effective in prevention and treatment of Urinary Incontinence in antenatal and after child birth. High adherence to a strength-training protocol and close follow up proved that PFMT during pregnancy and after delivery can prevent and treat UI. A supervised training protocol following strength-training principles, emphasizing close to maximum contractions and lasting at least

8 weeks is recommended [21]. In the other study of review done by Woodley, they included 38 trials involving 9892 women from 20 countries and concluded that targeting antenatal women early in pregnancy and offering a structured PFMT programme may prevent the onset of Urinary Incontinence in late pregnancy and postpartum. A PFMT program following general strength-training principles can be recommended both during pregnancy and in the postnatal period [22,23].

Rehabilitation using pelvic floor exercises and QOL

The PFMT programs which are supervised individually are the most effective methods to relieve the symptoms of Urinary Incontinence. PFM rehabilitation is applied in 12 to 14 week and 6 month program, but there is strong evidence with a significant increase in PFM strength after 12-week programs [24]. A home program applications were compared with long-term pelvic floor rehabilitation applications in a physiotherapy clinic, no difference was found between the results of the two applications in terms of a pad test or strength measurements [12]. QOL concept includes person's physical health, psychological well-being, social relationships, and sexual satisfaction. The efficacy of pelvic floor muscle exercises on sexual function and quality of life in postpartum women and found that women who were doing pelvic floor exercise scored significantly higher on the majority of sexual function [24].

An effect of pelvic floor exercise on the quality of life was investigated where 80 women with stress incontinence in postpartum period were included and the result showed that the quality of life in women who had eight weeks of Pelvic Floor Exercises significantly increased compared to control group. Pregnancy and childbirth can be the factors in weakening the pelvic floor muscles where the best way to strengthen them is by pelvic floor exercises [25]. Study by Gagnon, a prospective cohort study showed that performing pelvic floor muscle exercises showed improvements in women's quality of life but the two components physical and mental dimensions where separately assessed and did not show any significant results. Oakley, has showed significantly improvement in physical health but not in mental health of quality of life due to heterogeneity in the sample design. Hence the reviews suggest postpartum women who follow and practice pelvic floor muscle exercises may benefit from the training program and can increase in sexual health, mental health and physical health which are the important dimensions in improving the quality of life.

Adherence rate to pelvic floor exercises

The adherence rate was calculated in a study done by Sacomori C, where they stated that single Pelvic Floor Muscle Exercise (PFME) session in immediate postpartum stage would be effective in preventing Urinary Incontinence (UI) and in a 3 month postpartum stage also showed a higher adherence rate. The adherence rate in following the pelvic floor exercises was 85.1% where only 37% of the women reported having some knowledge about PFME prior to participate in the study. The main barriers to PFME identified were forget fullness (61.2%), lack of time (52.2%) and the need to take care of the baby (56.7%) as result postnatal PFME delivered in the immediate postpartum period was ineffective for improving the complication like urinary symptoms such as frequency of leakage, amount of leakage and influence of leakage on QOL. The study also had no difference in QOL in 3 months post-partum. A review carried out by Hay-Smith, on exploring the experience of and adherence to Pelvic Floor Muscle

Training (PFMT) identified Six "modifiers" of adherence were knowledge; physical skill; feelings about PFMT; cognitive analysis, planning, and attention; prioritization; and service provision and concluded that individuals experience substantial difficulties with capability (particularly knowledge and skills), motivation (especially associated with the considerable cognitive demands of PFMT), and opportunity (as external factors generate competing priorities) when adopting and maintaining a PFMT program [26-29].

Hence the review on the adherence to pelvic floor exercise suggested that adherence rate for exercise is very important in order to prevent primary pelvic floor dysfunction which can lead to Urinary Incontinence and affect the QOL. The review also gave an overview of the barriers and strategies to be considered during the delivery of pelvic floor exercise training to postpartum women in low and middle income community.

Guidelines and pelvic floor exercises

Guidelines or a standardized set of instructions that are followed while setting and delivering an exercise training, specifically related to pelvic floor exercises during postpartum Urinary Incontinence have been suggested in study done by Deffieux X, pelvic-floor rehabilitation using pelvic floor muscle contraction exercises is recommended to treat persistent Urinary Incontinence at 3 months postpartum (grade A), regardless of the type of incontinence with minimum of 3 guided sessions with a therapist followed by an home programme. The postpartum rehabilitation improves short-term Urinary Incontinence (1 year) but not effective in long-term Urinary Incontinence (6-12 years) [30]. In another study regarding antepartum PFEs when used with biofeedback and taught by trained health care personnel using a conservative model did not show any significant result in decrease in Urinary Incontinence or pelvic floor strength in short term (3 months). Postpartum PFEs when performed with a vaginal device providing resistance or feedback had an impact on decrease in postpartum Urinary Incontinence and increases strength [31].

Hence the reviewed articles suggest that set of planned resistance training of pelvic floor muscle exercises with a feedback mechanism can help postpartum women to regain the strength and the biomechanical properties of the muscle to work in a sequential manner to prevent any type of Urinary Incontinence in initial 3 months of the phase. The population of low and middle income community can be trained on exercise protocol with accessible material to strengthen the pelvic floor muscles with proper guidelines through different modes of delivery system.

DISCUSSION

Most research review studies find that the low middle income countries lacks in availing the facility of postnatal care services due to various barriers like socio, economical, psychological, family and personal issues. These reviews done in this study found that specific problems faced to use of such services was not possible due to poor socioeconomic status, lack of education, poverty and cost of postnatal care [32]. According to many studies women suffered a high burden of morbidities in first few weeks of delivery due to moderate and severe anemia, birth related perineal trauma caused due to infections, hemorrhage, and incontinence. The reported data on socioeconomic status states that the LMICs cannot offer the medical facilities, opportunities and cost of postnatal care where there is no clear and consistent association between women's income generating employment and her use of postnatal care

services. A woman in gainful employment may still have no control over any of her household's finances where her economic activity may be poorer due to poverty and relatively poor remuneration [32]. Based on the level of education women who received a formal education, women who attend primary education and women who completed secondary school were the most likely to use postnatal care, so poorer educational status prevented them from use of postnatal care in LMICs.

The childbearing and delivery system plays an important role in maternal health where many deliveries occur at primary care facilities, where the quality of care is poor in LMICs [33]. In the study involved with six countries on facilities provided access to the centers of delivery and certain policy and guidelines implication that delivery in hospital system improves maternal health. In 2014, WHO recommended that a mother and her newborn child should receive postnatal care within 24 hours of the birth and then at least three more times i.e. at least one on day three after the birth, the second one in the second week after the birth and later six weeks after the birth prevents postpartum complications.

The study aimed to assess the efficacy of pelvic floor exercise on urinary incontinence in postpartum women. In pooling of our studies showed statistical influence on urinary incontinence when pelvic floor muscle exercises were used. The strength of our reviews concludes that pelvic floor muscle exercises increases the strength of the PFM after training in patients with all levels of PFM strength [17]. Sacomori, stated in their study that single Pelvic Floor Muscle Exercise (PFME) session immediately postpartum would be effective in preventing Urinary Incontinence (UI) in a 3 month.

Based on the evidence provided on large sample size, well-defined training protocols, high adherence rates and close follow-up, a PFMT program following general strength-training principles can be recommended both during pregnancy and in the postnatal period for prevention and treatment of UI. Pelvic floor muscle exercises can boost sexual function and quality of life in postpartum. There are mechanisms which explain why using pelvic floor muscle exercises ameliorate sexual function. Pelvic floor exercises strengthen levator-ani muscle through muscular hypertrophy; stronger levator ani muscle enhances support and lessens the burden imposed on the ligament. Pelvic exercises can lead to increase in the blood flow to the pelvic floor and help in speed healing and revascularization of damaged cells and tissues. study aimed at investigating the effect of pelvic floor exercise on the quality of life of 80 women with stress incontinence in postpartum period, result showed quality of life in women who had eight weeks of pelvic floor exercise exercises significantly increased compared to control group [33,34].

The strength of our reviews concludes that pelvic floor muscle exercises increases the strength of the PFM after training in patients with all levels of PFM strength and further strengths can be the use of design structured pelvic floor exercises by skilled physical therapists and to initiate a supervised group training sessions in primary health care centers. The postpartum women should be encouraged to participate, ensure delivery of knowledge through different modes of delivery system so that the barriers in LMICs will be overlooked and access to postnatal care services may benefit in improving their maternal health Quality of Life (QOL).

CONCLUSION

The review suggested that relevant evidence from low and middle income countries showed there is a need to strengthen policy

making in health systems and overcome the barriers and provide facilities to access the use of postnatal care services at affordable cost which can prevent the problem of postpartum Urinary Incontinence and other complications. The review of these studies has some implications that an effective pelvic floor exercise regimen practice by postpartum women may benefit and improves the QOL of increasing physical, mental and sexual health. On other hand the guidelines and policies will aid in improvising on socioeconomic status, quality facilities of postnatal care services, reducing the cost burden, education and follow up leading to reduction in the impact of postpartum problem in developing countries..

AUTHOR CONTRIBUTIONS

The corresponding author initiated the study on review literature as there where minimal published study on literature survey related to pelvic floor exercise programme in Lower Middle Income Countries. Each author warrants that she has participated sufficiently in the intellectual content, the analysis of data and the writing of the work to take public responsibility for it. The authors have reviewed the final version of the work individually believes it represents valid work and approves it for publication.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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