

Original Research Article

## Effectiveness of Pelvic Floor Exercises on Stress Incontinence among Rural Perimenopausal Women

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### ABSTRACT

**Background:** Perimenopause is a period of transition from reproductive adulthood to menopause. 30-70% of women in perimenopause and menopause suffer from urinary incontinence in some form

**Methods:** A quasi-experimental one group pretest posttest design was used to study a group of 60 randomly selected perimenopausal women from rural communities

**Results:** A significant decrease was noted after treatment with pelvic floor exercises. The Mean pretest stress incontinences scores was 6.5 which reduced to 3.6 in the posttest.

**Discussion:** Pelvic floor exercises have been found to be effective in treating stress incontinence among perimenopausal women.

**Conclusion:** Pelvic floor training is a cheap and cost-effective method of preventing and treating stress incontinence among women.

**Key words:** pelvic floor exercise, perimenopausal women, stress incontinence.

### INTRODUCTION

Stress incontinence is urodynamically proved involuntary loss of urine when the intravesical pressure exceeds that of the urethra with no simultaneous detrusor contraction. [1] Risk factors for genuine stress incontinence are inherently weak connective tissue, vaginal delivery, obesity, strenuous work, and old age. [2] Urinary incontinence causes both physical and psychological distress to women. Stress incontinence is often a common problem among middle aged and older women. It is also associated with a decrease in the quality of life. [3] The prevalence of stress incontinence among women ranges from 5 % to 60 %. [4,5] The menopause transition is a series of stages of variable length from early perimenopause and late peri-menopause to

postmenopause defined by changes in menstrual and hormonal patterns. Results from cross-sectional epidemiological studies show an increase in prevalence of incontinence among women between the ages of 45 and 55 years, an age range that coincides with the menopause transition. Women with stress incontinence had the severest perceived impact on quality of life. [6] Incontinence prevalence was 57%, with nearly 15% categorized as moderate and 10% as severe in a study on urinary incontinence predictors and life impact among ethnically diverse perimenopausal women. Biologic factors constituted the most important risk for severity, specifically perimenopausal compared with premenopausal status (odds ratio [OR] 1.35), body mass index (OR 1.04), diabetes mellitus (OR 1.55), and current

smoking (OR 1.38). Severity was associated with likelihood of discussing with a health care provider, with bothersomeness, and with likelihood of nighttime voiding.<sup>[7]</sup> Stress incontinence is often under reported as many women fail to seek help or report symptoms to health care providers due to the embarrassing and culturally sensitive nature of this condition.<sup>[8]</sup> Being in perimenopause makes it 1-2 times more likely for women to develop incontinence.<sup>[9]</sup> Pelvic floor muscles exercise has a greater effect than electrical stimulation and vaginal cones in the treatment of stress incontinence.<sup>[10]</sup> Physical therapies to treat stress incontinence include pelvic floor exercises with or without biofeedback, electrical stimulation, and weighted vaginal cones<sup>[11]</sup> Pelvic floor exercise is known to be an effective treatment for stress incontinence and studies evaluating its effectiveness among rural women remain inconclusive and flawed because of small sample sizes. A study to compare the effect of pelvic floor muscle training on premenopausal and postmenopausal women, successful outcome was reported by 59% of the premenopausal patients and 70% of the postmenopausal patients (P = 0.16), the attainment of the subjective goal by 68% and 81% (P = 0.09), and the need of an incontinence operation in a follow-up of 30 to 102 months by 15% and 14% (P = 1.0), respectively. None of the outcome parameters reached significance.<sup>[12]</sup>

A descriptive, exploratory cross-sectional population-based household survey on perimenopause and menopause indicated a high prevalence of stress urinary incontinence among perimenopausal women.<sup>[13]</sup> The main objective of this study was to assess the effectiveness of pelvic floor exercises among rural peri-menopausal women.

## **MATERIALS AND METHODS**

A quasi-experimental research using one group pretest posttest design

was conducted in a rural community of the state of Maharashtra. Sixty perimenopausal women in the age group of 40-50 were selected using non-probability purposive sampling technique. The study was approved by the institutional ethics review committee. Individual participants were informed about the study and due care was taken to get a written consent. The participants were assured that the data will be confidential and they may withdraw from the study whenever they wish.

Women, who were on treatment and have been trained to do pelvic floor exercises for stress incontinence, were excluded. Data was collected using a two part tool consisting of a semi-structured questionnaire on personal and obstetric history and a semi-structured interview to assess the degree of stress incontinence. The tool to assess the degree of stress incontinence had two parts

- Information regarding the factors influencing stress incontinence like diet, personal habits, associated illnesses, presence of constipation, any pelvic surgeries and involvement in sports.
- A 12 item scale to assess the degree of incontinence with questions regarding time of leakage, symptoms related to it, frequency, influencing and relieving factors as well as effect on quality of life.

The tool was tested for reliability using the test –re-test method. The Karl Pearson coefficient was found to be 0.89, making the tool reliable. The content validity of the tool was established by nursing experts in the field and the item related content validity index was found to be 0.8, making the tool valid for the study.

After taking appropriate permissions for the study, a house to house survey of the community was conducted to identify potential participants. Perimenopausal women who had stress incontinence and meeting the inclusion

criteria were included in the study. Everyday data was collected from three to four participants. Following data collection Pelvic floor exercises were taught to each one of the participants and they were told to perform the same under the guidance of the investigator once. The participant then practiced the pelvic floor exercises 6 – 7 times daily at home. For one week the investigator guided the participant in the performance of the exercises. The participant had to continue performing the exercises for the next three weeks. Post test was conducted after three weeks.

## RESULTS

The data analysis was analyzed using descriptive and inferential statistics and presented in form of tables, graphs and figures. Results indicated that more than half 34 (56.7%) of the participants were in the age group of 40-45 years and 26 (43.3%) of them were in the age group of 46-50 years. It was also seen that more than half 34 (56.7%) of the participants were housewives, 19 (31.7%) were doing service, 4 (6.7%) were daily wages laborers, and 3 (5%) worked in small scale industries. Majority 47 (78.3%) of the participants were married and 21.7% were widow.

Majority 25 (41.7%) of the participants were married at the age of 19-21 years. First delivery at a young age of 16 – 18 years was observed among 18 (30%). A majority 55 (91.7%) of the participants had normal delivery while 3 (5%) of them had undergone caesarean section and 2 (3.3%) had instrumental delivery. Interestingly it was noted that 46 (76.7%) of the participants had more than two children, 13 (21.7%) had only two children and most 53 (88.3%) were hospital deliveries. An assessment of the body mass index of the participants revealed that 36 (60%) of the participants had normal BMI, 24 (40%) of them were obese. A majority 59 (98.3%) of the participants were taking normal diet and 22

(36.7%) had habit of using mishri (burnt tobacco). While it was seen that 49 (81.7%) of the participants were not performing any exercises, only 11 (18.3%) reported participation in exercise daily. A few 7 (11.7%) participants reported having hypertension and diabetes and were taking antihypertensive and hypoglycemic medication.

In pretest, majority 44 (73.3%) of the participants had moderate stress incontinence (Score 5 to 8), 9 (15%) had mild stress incontinence (score 1 to 4) and 7 (11.7%) had severe stress incontinence (score 9 to 12). A comparison of the pretest and posttest stress incontinence scores among perimenopausal women revealed that 18 (30%) of the participants had moderate stress incontinence (Score 5 to 8), 42 (70%) had mild stress incontinence (score 1 to 4) and none of them had severe stress incontinence (score 9 to 12).

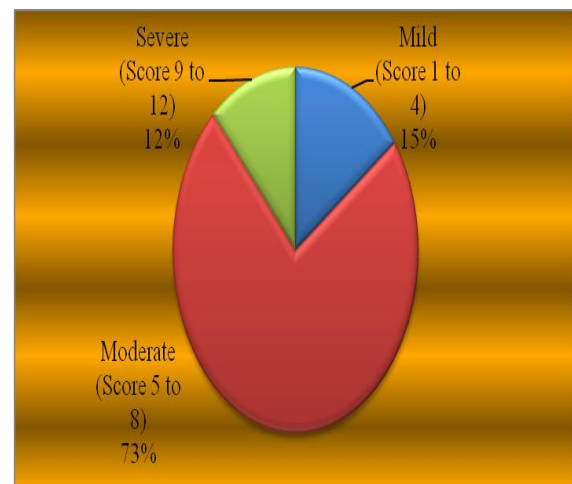


Fig1: Distribution of participants according to degree of stress incontinence

A paired t test was used to compare the pre and posttest stress incontinence score and it was found that t value at 29 degrees of freedom was 28.4, the corresponding p value was 0.0000 which was significant at  $p < 0.05$ . This indicates that the stress incontinence among perimenopausal women improved remarkably after pelvic floor exercises.

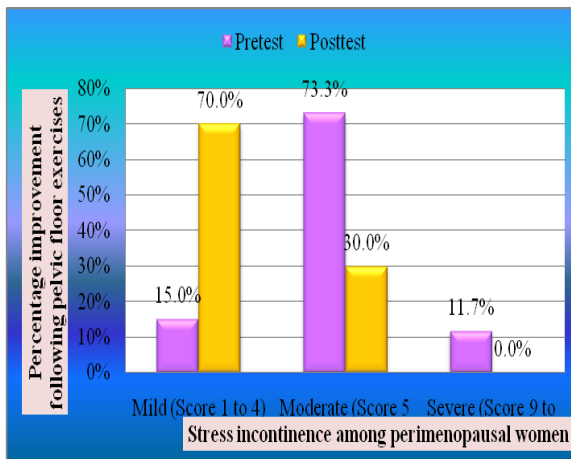


Fig 2: Bar diagram showing pretest and posttest results of pelvic floor exercises on stress incontinence.

Interestingly it was noted that there was no association of obstetric variables like age at first delivery, type of delivery, number of children and place of delivery with stress incontinence.

## DISCUSSION

Similar to the findings of this study Fritel, Ringa et al in their study on prevalence of severe stress incontinence and mode of delivery among perimenopausal women found that prevalence of severe stress incontinence was the lowest amongst nulliparous women but was similar among parous women regardless of the number of births (14-17%). Also the prevalence of severe stress incontinence was not associated with the mode of delivery. Contrary to the findings of this study the authors found that significant risk factors for severe stress incontinence were high body mass index, diabetes mellitus, previous incontinence, surgery, parity and first delivery under the age of 22 years. [15] The study concluded that pelvic floor exercises are effective in reducing the degree of stress incontinence. Watts, Robertson in their study to assess the effectiveness of pelvic floor exercise on urinary incontinence following child birth found that both antenatal and postnatal pelvic floor muscle exercises are effective in resolving and reducing urinary incontinence following child birth. [14]

Community health nurses will be able to assess the degree of stress incontinence using the instrument for assessment of degree of stress incontinence and train women to practice pelvic floor exercises for prevention and resolution of stress incontinence. In rural India where many treatment options are not available this type of low cost effective treatments are beneficial to women without causing any side effects, Also pelvic floor exercise can be done by the women anywhere, anytime and requires no special equipment making a very easy to use treatment option to improve the quality of life of women in the perimenopausal and menopausal age. Health literacy related to such treatment options can be provided by nurses to women in rural areas and assist in improvement of quality of life. The findings of the study can be made available to student nurses who can apply these evidences in nursing care of patients in the clinical as well as community. The authors recommend that further research on larger samples and effect of pelvic floor exercise in long term quality of life is essential.

## CONCLUSION

This study has highlighted the effectiveness of pelvic floor exercises in resolving stress incontinence among perimenopausal women. Regular practice of this low-cost, simple treatment modality can result in improvement of the quality of life of perimenopausal women and a stress free transition into menopause.

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