The Efficacy of Pelvic Floor Exercise for the Stress Urinary Incontinence

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Authors’ contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Background: Stress urinary incontinence is an involuntary leaking of urine during physical activity, such as coughing, sneezing, laughing, or exercise that increases abdominal pressure. Stress urinary incontinence has a wide variety of impacts on women’s daily.

Objectives: To assess the stress urinary incontinence among women before and after pelvic floor exercise, to assess the severity of stress urinary incontinence among women before and after pelvic floor exercise, to find out the association between stress urinary incontinence and severity with selected demographic variables.

Methodology: A study will be conducted in the rural community area of the Wardha district. A total of 30 women will be selected as the study sample by using the non-probability purposive sampling technique as per the inclusion/exclusion criteria. An interventional evaluatory approach and time-series design will be used. In this study, the researcher will assess the stress urinary incontinence with the help of a structured questionnaire and again assess the severity of stress urinary incontinence with a grading scale after that pelvic floor exercise will be given to that woman after 2 weeks again researcher will assess the stress urinary incontinence and severity of the stress urinary incontinence with the grading scale.

Outcome/results: The outcome will be the pelvic floor exercise or training (PFE) will minimize the incidence rate of stress urinary incontinence among women it also helps to increase the pelvic floor muscle strength.
Keywords: Effectiveness; pelvic floor exercise; urinary stress incontinence.

1. INTRODUCTION

Urinary incontinence is a condition in which the bladder loses its control, which varies from slight involuntary leaking of urine during sneezing, coughing, laughing, and when sudden pressure on the bladder to total inability to control the urination. Urinary incontinence has various types which disturb the normal life of patients.

Urinary incontinence is the failure to control bladder movement. It is again sub-divided into the following type that is stress urinary incontinence [1]. This form of incontinence may not necessarily have anything to do with stress as such, but it is due to pressure on the bladder because of overweight, pregnancy, sneezing, lifting heavy items, exercise & medical conditions [2]. The second type is overflow incontinence in which individuals with this form of incontinence typically have difficulty emptying their urinary bladders [3]. Overflow incontinence most commonly affects males. Next is urge incontinence or overactive bladder this form of incontinence is characterized by such a heavy urge to urinate that patient has trouble to find the toilet at the time [4]. It is probably the result of nerve or muscle damage that helps to regulate the flow of urine, but may also be caused by certain medical conditions. Functional incontinence is a urinary leakage. This form of incontinence most commonly affects the elderly who have physical and mental disorders. Bedwetting is also a form of urinary incontinence mostly seen in children & it is most likely due to the immaturity of the bladder. Bedwetting is more common in young children, although occasional "night incidents" among older children are generally not a cause of concern if bedwetting occurs, it is important to seek medical attention, and it may be a symptom of an underlying medical problem in extreme cases [5].

Urinary stress incontinence is a widespread and expensive disorder that can be medical and therapeutically managed. Stress urinary incontinence is a common issue that affect 50% of women. In Swedish, research revealed that most of the females reported that they are uncomfortable while communicating regarding her disorder with healthcare providers. This problem will be increased with the age [6].

The etiology and causes of stress urinary incontinence are multifactorial and depend on age, pregnancy, pelvic floor injury (commonly because of vaginal birth), obesity, and chronic cough. These types of factors can affect the pelvic muscles, to develop urinary stress incontinence [7].

The first-line treatment for pelvic floor dysfunction, organ prolapse, & urinary stress incontinence is pelvic floor exercise. This exercise or workout was introduced in 1948 by a German gynecologist ‘Arthur Kegel’ to restore the work and strength of pelvic muscles after the labor process this is often referred to as exercises on the pelvic floor. It has been commonly practiced for several other disorders, like organ prolapse, stress urinary incontinence, overactive bladder, etc. The purpose of this research study to assess the effectiveness of stress urinary incontinence [8].

1.1 Objectives

To assess the stress urinary incontinence among women before and after pelvic floor exercise, to assess the severity of stress urinary incontinence among women before and after pelvic floor exercise, and to find out the association between stress urinary incontinence and severity with selected demographic variables.

2. METHODOLOGY

This study will be conducted in a rural area of the Wardha district. A total of 30 women will be selected as the study sample by using the non-probability purposive sampling technique as per the inclusion/exclusion criteria. An interventional evaluatory approach and time-series design will be used. In this study, the researcher will assess the stress urinary incontinence with the help of a structured questionnaire and again assess the severity of stress urinary incontinence with a grading scale after that pelvic floor exercise will be given to that woman after 2 weeks again researcher will assess the stress urinary incontinence and severity of the stress urinary incontinence with the grading scale.

2.1 Sample Selection Criteria

2.1.1 Inclusion criteria

- Women were willing to participate in the study in the selected region.
• Women are available during the data collection process.
• Women age above 30 years.
• Women who are suffering from grade-1 and grade-2 stress urinary incontinence.

2.1.2 Exclusion criteria

• Women who have already attended a similar type of study.
• Women who are suffering from grade-3 stress urinary incontinence.
• Women suffering from central nervous system disease, history of genitourinary malignancy, current urinary infection, and diabetic Mellitus.

2.2 Sample Size

30 postnatal mother selected from rural community area of Sawangi Meghe, Wardha.

\[ N = \frac{Z_{\alpha/2}.P.(1-P)}{d^2} \]

Where,

\[ Z_{\alpha/2} \] is the level of significance of 5% that is 95% confidence interval = 1.96
\[ P = \] prevalence of urinary incontinence = 12%
\[ d = \] desired error of margin = 0.04%

\[ N = \frac{1.96 \times 0.12 \times (1-0.12)}{0.042} \]
\[ = 28.46 \]
\[ = 30 \]

The sample size is extended to 30

2.2.1 Outcome measures

Primary outcome – To reduce the stress urinary incontinence among women and to improve the strength of pelvic floor muscle and sphincter control.

Secondary outcome – Instruct the women's the benefits of pelvic floor exercise.

Data management and monitoring: - Duration of the data collection will be 2 weeks for each patient.

Tool for data collection –

Section A – Demographic Variable

Age, Marital status, Number of children, History of birth canal injury, History of the mode of delivery, History of any previous abdominal surgery.

Section B - Structured questionnaire for assessing stress urinary incontinence

Section C - Ingelman-Sundberg scale for assessing the severity of stress urinary incontinence

Section D - Checklist of pelvic floor exercise

2.3 Statistical Analysis

Analysis and interpretation of the data will be done on collected 30 samples of women. The present study has been taken up to evaluate the efficacy of pelvic floor muscle exercise for urinary stress incontinence between females. Analysis & interpretation is according to the objectives of the study. The analysis was done with the help of inferential & descriptive statistics.

3. EXPECTED OUTCOMES/RESULTS

The research project evaluating the efficacy of pelvic floor muscle exercise for stress urinary incontinence & the expected outcome will be pelvic floor muscle exercise is beneficial for reducing the incidence/prevalence of urinary stress incontinence.

4. DISCUSSION

This study will be conducted on 30 women who had grade 1 and grade 2 stress urinary incontinence selected with non-probability purposive sampling technique. Time series research design and an interventional evaluatory approach will be used. Tools are the structured questionnaire of demographic variables and questionnaire for examining the stress urinary incontinence and grading scale will use to assess the severity of stress urinary incontinence and assessing the effectiveness of pelvic floor exercise. The setting of the study will be rural areas of the Wardha district. Most of the studies have shown that pelvic floor exercise is effective for stress urinary incontinence, pelvic dysfunction, and uterine prolapse or organ prolapse. Pelvic floor exercises improve muscle tone and improve the strength of the pelvic muscle. Pelvic floor muscle exercise helps in managing urinary stress incontinence between females. Pelvic floor exercise is cost-effective
and should be the first choice of treatment for Urinary Incontinence [9]. Pelvic floor exercise for stress urinary incontinence is based on two muscle which is pelvic organ supporting muscle and sphincter muscles. This exercise improving muscle strength and muscle tone and reducing the symptoms of stress urinary incontinence [10].

Many research indicates that pelvic floor muscle exercise is extremely successful in treating pelvic muscle dysfunction, pelvic floor exercise is a first-line intervention [11]. The genetic factors can affect pelvic floor muscle dysfunction [12].

In most of the study the pad test, bladder diary, perineometer test were used for assessment of the effectiveness of pelvic floor muscle exercise [13].

Urinary stress incontinence is just a serious condition that causes the disorder, embarrassment, or a lack of self-confidence of significant personal and organizational consequences [14].

Stress urinary incontinence may mostly affect living standards, psychological distress leads to discomfort and irritation, skin rashes & inflammation of a urinary tract, and hospitalized admissions. Stress urinary incontinence may impact on interaction and can restrict contact between men and women. An incontinent has 2.5 times higher risk of hospital admission than a country [15].

Pelvic floor exercise for clients with urogynecology (POP, SUI, and OAB) is a simple and efficient form of therapy. It must be recommended as a first-line, so this applies to a resource-poor nations [16].

The incidence rate among females was 30 percent between the age group of 30 to 60 years. Total females with incontinence stress [73.8 percent (484/656)], and mixed [16.8% (110/656)] & urge-incontinence [9.5 percent (62/656)]. The ages over 40 years who have the consumption of tea, tobacco, are responsible for rising urinary incontinence. Postmenopausal status, body mass index above 25 this is the risk factors of incontinence. The overall incontinence was shown to be substantially correlated with multiples pregnancies, vaginal births, hysterectomy, menopause, consumption of tea and tobacco, & asthma for and over 40 years old [17].

5. CONCLUSION

The study will be concluded with the significant effect of rate of stress urinary incontinence among women, it also helps to increase the pelvic floor muscle strength.

ETHICAL APPROVAL AND CONSENT

Advance approval of the research must be sought from the university ethical committee. Due permissions will be taken from concerned authorities of the institutes where the study is to be conducted. Informal and written consent will be taken from the samples and the identity that the samples will be kept confidential.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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