EFFECT OF AN AWARENESS PROGRAM ON KNOWLEDGE OF PHYSIOTHERAPY INTERVENTION REGARDING URINARY INCONTINENCE AMONG PREMENOPAUSAL WOMEN.

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ABSTRACT

Background: Urinary Incontinence (UI) is a prevalent and often debilitating condition characterized by the involuntary loss of urine, which can significantly impact an individual's quality of life and psychological well-being. There is a pressing need for targeted awareness initiatives aimed at dispelling myths, reducing stigma, and empowering individuals to seek timely intervention for UI. In light of this imperative, the present research endeavours to investigate the effectiveness of an awareness program on knowledge of physiotherapy interventions regarding UI among premenopausal women. **Method:** This study utilized pre-tests and post-tests to examine the impact of awareness program on the knowledge of physiotherapy interventions for UI among premenopausal women attending outpatient departments (OPD). Participants were recruited through the convenience sampling method at OPD. Prior to the session participants completed a pre-session questionnaire to assess baseline knowledge. The awareness program consists of interactive sessions. Following the session participants completed a post-session questionnaire to evaluate changes in knowledge. Data from both pre-session and post-session questionnaires were analyzed by using descriptive statistics and paired t-tests to assess the effectiveness of the awareness program. **Result:** A total of 102 participants attended the awareness program, Mean ± SD of Age (In years) of the Participants is 40.95 ± 3.32. Pre-session and post-session scores revealed a significant increase in knowledge scores, with the mean score rising from 12.37 to 23.67. **Conclusion:** The findings of this study underscore the profound impact of raising awareness about UI among premenopausal women. This research highlights the importance of continued efforts to sustain and expand awareness initiatives targeting premenopausal women. In conclusion, an awareness program shows a significant increase in knowledge of physiotherapy intervention regarding UI among premenopausal women.

Keywords: Physiotherapy, Urinary Incontinence, Pre-menopausal Women

INTRODUCTION

Urinary incontinence is a prevalent and often debilitating condition characterized by the involuntary loss of urine, which can significantly impact an individual's quality of life and psychological well-being. [1] Despite its high prevalence, urinary incontinence remains a vastly underreported and stigmatized health issue, particularly among premenopausal women.

Urinary incontinence (UI) represents a multifaceted and prevalent health concern affecting individuals across the lifespan, with notable implications for premenopausal women. Characterized by the involuntary leakage of urine, UI manifests in various forms, including stress urinary incontinence (SUI), urge urinary incontinence (UUI), and mixed urinary incontinence (MUI), each presenting distinct etiological factors and clinical manifestations. [1,2] SUI, the most common subtype among premenopausal women, is typified by urine leakage during activities that exert pressure on the pelvic floor, such as coughing, sneezing, or physical exertion. Conversely, UUI is characterized by a sudden and overwhelming urge to urinate, often resulting in leakage before reaching the restroom. MUI encompasses a combination of both stress and urge components, posing unique challenges in management and treatment. [1,2] The underlying causes of UI are multifactorial, encompassing a complex interplay of anatomical, physiological, and lifestyle factors. Pregnancy, childbirth, obesity, and hormonal fluctuations associated with the menstrual cycle are recognized risk factors predisposing premenopausal women to UI. [1,2]

Additionally, age-related changes in pelvic floor musculature and neurological function contribute to the development and progression of UI over time. [2] Physiotherapy-based approaches have emerged as a safe, effective, and non-invasive alternative, particularly for premenopausal women seeking conservative treatment options. By targeting pelvic floor muscle strength, coordination,

and endurance through tailored exercise programs, physiotherapy aims to improve bladder control, reduce urinary leakage episodes, and enhance overall pelvic health. [2] Despite the growing recognition of physiotherapy as a valuable adjunctive therapy for UI, there remains a paucity of research specifically examining its efficacy and feasibility in premenopausal women. Therefore, the present study seeks to address this gap in the literature by investigating the role of physiotherapy in the management of UI among premenopausal women, with a focus on evaluating its impact on symptom severity, and patient satisfaction. By elucidating the potential benefits of physiotherapy interventions in this population, this research aims to inform evidence-based approaches to UI management and improve outcomes for premenopausal women affected by this prevalent and often distressing condition. Consequently, there is a pressing need for targeted awareness initiatives aimed at dispelling myths, reducing stigma, and empowering individuals to seek timely intervention for urinary incontinence. In light of this imperative, the present research endeavours to investigate the effectiveness of an awareness program in enhancing knowledge of physiotherapy interventions regarding urinary incontinence among premenopausal women. By elucidating the impact of such interventions on knowledge acquisition, attitudes, and healthcare seeking behaviour, this study seeks to contribute to the broader discourse on urinary incontinence awareness and management strategies, with the ultimate goal of improving health outcomes and enhancing the quality of life for affected individuals. [1,2] **Stress Urinary Incontinence (SUI):** SUI is characterized by the involuntary leakage of urine during activities that increase intraabdominal pressure, such as coughing, sneezing, or physical exertion. [2] Pathophysiological mechanisms: Weakness or dysfunction of the pelvic floor muscles, particularly the levator ani muscles, reduces support to the bladder and urethra, leading to urethral hypermobility or descent.

Damage or disruption of the urethral sphincter complex, comprising the internal and external urethral sphincters, compromises the ability to maintain continence during increases in intraabdominal pressure. Loss of collagen and connective tissue integrity in the urethral supportive structures, such as the endopelvic fascia, results in urethral hypermobility and predisposes to SUI.

Urge Urinary Incontinence (UUI): UUI is characterized by a sudden and overwhelming urge to urinate, often accompanied by urinary leakage before reaching the restroom. [2] Pathophysiological mechanisms: Dysfunction of the detrusor muscle, which controls bladder contraction, leads to involuntary bladder contractions or detrusor overactivity. Neurological disorders affecting the central or peripheral nervous system, such as stroke, multiple sclerosis, or spinal cord injury, disrupt normal bladder control mechanisms, resulting in uninhibited bladder contractions and urgency. Bladder irritation or inflammation due to conditions such as urinary tract infections or bladder stones can trigger abnormal bladder contractions and urge symptoms.

Mixed Urinary Incontinence (MUI): MUI involves a combination of both stress and urge components, presenting with symptoms of both SUI and UUI. [2] Pathophysiological mechanisms: MUI often results from a combination of pelvic floor muscle weakness and detrusor overactivity, leading to a complex interplay of stress-induced and urge-induced urinary leakage. Individuals with MUI may experience leakage during activities that increase intra-abdominal pressure as well as episodes of urinary urgency and frequency. **Overflow Urinary Incontinence:** Overflow urinary incontinence occurs when the bladder becomes overdistended and cannot empty properly, leading to continuous leakage of urine. [2,3] Pathophysiological mechanisms: Bladder outlet obstruction, such as benign prostatic hyperplasia in men or pelvic organ prolapse in women, impairs bladder emptying and results in chronic urinary retention. Neurological conditions affecting bladder

innervation, such as diabetic neuropathy or spinal cord injury, disrupt normal bladder sensation and contractility, leading to incomplete emptying and overflow incontinence.

Etiology/Causes/Risk Factors of Urinary Incontinence

Pelvic Floor Muscle Weakness: Weakness or dysfunction of the pelvic floor muscles, including the levator ani muscles, can lead to inadequate support of the bladder and urethra, predisposing to urinary incontinence.[2,3] Causes of pelvic floor muscle weakness include pregnancy and childbirth, hormonal changes (e.g., menopause), aging, chronic coughing or heavy lifting, and genetic predisposition.[2,3] **Urethral Sphincter Dysfunction:** Damage or disruption of the urethral sphincter complex, comprising the internal and external urethral sphincters, can impair the ability to maintain urinary continence.[2,3] Etiological factors contributing to urethral sphincter dysfunction include pelvic trauma or injury, pelvic surgery (e.g., prostatectomy in men), radiation therapy, and neurological disorders affecting bladder and sphincter control. **Pelvic Organ Prolapse:** Pelvic organ prolapse, such as cystocele (bladder prolapse) or rectocele (rectal prolapse), can result in mechanical obstruction of the urethra and impair bladder emptying, leading to urinary incontinence. [2,3] Risk factors for pelvic organ prolapse include childbirth, aging, obesity, chronic constipation, and connective tissue disorders. [2,3] **Neurological Disorders:** Neurological conditions affecting the central or peripheral nervous system can disrupt normal bladder and sphincter control mechanisms, leading to urinary incontinence. [2,3] Examples of neurological disorders associated with urinary incontinence include spinal cord injury, multiple sclerosis, Parkinson's disease, stroke, and diabetic neuropathy. **Bladder Dysfunction:** - Dysfunction of the detrusor muscle, which controls bladder contraction, can result in involuntary bladder contractions or detrusor overactivity, leading to urinary urgency and urge incontinence.

[2,3] Other bladder-related etiological factors include bladder outlet obstruction (e.g., benign prostatic hyperplasia, urethral stricture), bladder inflammation or infection (e.g., cystitis), and bladder stones. **Hormonal Changes:** Hormonal fluctuations, particularly during pregnancy, childbirth, and menopause, can impact bladder and pelvic floor function and contribute to urinary incontinence. [2,3] Estrogen deficiency associated with menopause can lead to pelvic floor muscle atrophy and decreased urethral sphincter tone, predisposing to urinary incontinence. **Medications and Substances:** - Certain medications, such as diuretics, alpha-blockers, anticholinergics, and sedatives, can affect bladder function and contribute to urinary incontinence. [2,3] Alcohol, caffeine, and certain acidic or spicy foods may irritate the bladder and exacerbate urinary urgency and frequency, leading to urinary incontinence symptoms.

Signs and Symptoms of Urinary Incontinence: Urinary Leakage: The hallmark symptom of urinary incontinence is the involuntary leakage of urine, which may occur during activities that increase intra-abdominal pressure (stress urinary incontinence), with a sudden urge to urinate (urge urinary incontinence), or continuously (overflow urinary incontinence). [2,3] **Increased Urinary Frequency:** Individuals with urinary incontinence may experience an increased frequency of urination, needing to void more often than usual throughout the day and night (nocturia). [2,3] **Urinary Urgency:** Urinary urgency is characterized by a sudden and intense urge to urinate, often accompanied by fear of leakage if a restroom is not immediately accessible. [2,3] **Nocturnal Enuresis:** Nocturnal enuresis, or nighttime bedwetting, may occur in individuals with urinary incontinence, leading to unintentional urine leakage during sleep. [2,3] **Incomplete Bladder Emptying:** Some individuals with urinary incontinence may experience difficulty fully emptying their bladder, resulting in residual urine volume and increased risk of urinary tract infections. [2,3]

Pelvic Pain or Discomfort: Pelvic pain or discomfort may accompany urinary incontinence, particularly in cases of pelvic organ prolapse or bladder irritation/inflammation. [2,3] **Impact on Quality of Life:** Urinary incontinence can have significant psychosocial and emotional consequences, impacting an individual's quality of life, self-esteem, and mental well-being. [2,3] **Skin Irritation or Infections:** Prolonged exposure to urine leakage can cause skin irritation, breakdown, and infections in the perineal area, leading to discomfort and increased risk of complications. [2,3] **Social Withdrawal or Isolation:** Individuals with urinary incontinence may experience embarrassment, shame, or fear of stigma associated with their condition, leading to social withdrawal or isolation from social activities and relationships. **Limitations in Daily Activities:** Urinary incontinence can interfere with daily activities, such as work, exercise, and travel, reducing overall quality of life and functional independence. [2,3]

ASSOCIATION BETWEEN PREMENOPAUSAL STAGE AND UI

During the premenopausal stage, women are more likely to experience urinary incontinence, possibly due to several factors. One contributing factor is the increased frequency of anovulatory cycles, which can lead to prolonged elevated levels of estrogen in certain women, thereby increasing the risk of developing urinary incontinence. Additionally, women transitioning through the premenopausal stage often experience symptoms such as hot flushes and changes in vaginal bleeding, which may contribute to the development of incontinence, especially if these symptoms occur more frequently. Moreover, during this stage, women may exhibit unmeasured behaviours that could either increase or decrease the likelihood of developing urinary incontinence. Previous studies have noted a strong association between anxiety symptoms and incontinence, particularly urge incontinence. Weight gain among women is also linked to an increased risk of stress urinary incontinence, as excess weight gain can elevate intra-abdominal pressure. Furthermore, diabetes is recognized as a major risk factor for urinary incontinence due to its association with neuropathy and polyuria resulting from glucosuria. [5]

METHODOLOGY

The project was started after receiving ethical approval from the ethical committee. Participants fulfilling inclusion and exclusion criteria were recruited through a convenience sampling method at physiotherapy OPD at D. Y. Patil Medical College Hospital & Research Institute Kadamwadi, Kolhapur. **Target population:** Above 35 years **Materials:** Consent form, initial assessment form, urinary Incontinence Knowledge Questionnaire, ICUQ- SF, information booklet **Inclusion Criteria-** Age above 35 years, who is willing to participate **Exclusion criteria** Females perceived education other than Health Sciences. After recruiting participants, a written consent form was provided to the participants before starting the session. This study utilized a pretest-posttest to examine the impact of an awareness program on the knowledge of physiotherapy interventions for urinary incontinence among premenopausal women attending an outpatient department (OPD). Before the awareness program session, participants completed a pre-session questionnaire to assess baseline knowledge level by using a validated questionnaire. The awareness program was conducted over a four-week period, comprised of pre-session, main session, and post-session. Following the post-session questionnaire to evaluate changes in knowledge. During the pre-sessions, participants were briefed on the objectives and structure of the program, and baseline data regarding their understanding of physiotherapy interventions for urinary incontinence were collected. The main sessions consisted of educational modules, interactive discussions, and physiotherapy techniques relevant to managing urinary incontinence. Participants were actively engaged in learning about pelvic floor exercises, bladder training, and lifestyle modifications aimed at improving continence. Following the completion of the intervention, post-session assessments were conducted to evaluate the effectiveness of the program in enhancing participants' knowledge. Significant outcomes were observed through comparisons of pretest and post-test scores. Statistical analysis, including paired t-tests, were utilized to assess the significance of these outcomes, with a predetermined level of significance set at $p < 0.05$. These findings provide valuable insights into the efficacy of targeted awareness programs in improving knowledge and self-management skills related to urinary incontinence among premenopausal women attending OPD settings.

RESULTS

The mean ± SD of the age of the participants is 40.95 ± 3.32. The analysis of age demographics examined the distribution of participants across various age groups above 35 years and explored potential relationships between age and baseline knowledge levels, as well as the impact of age on the effectiveness of the awareness program. Correlation analyses were conducted to investigate any associations between age and changes in knowledge score post-intervention.

Education	No. of Participants	Percentage
High School	14	14%
Higher secondary education	26	25%
Graduation	62	61%

Table. No.1. Education Table

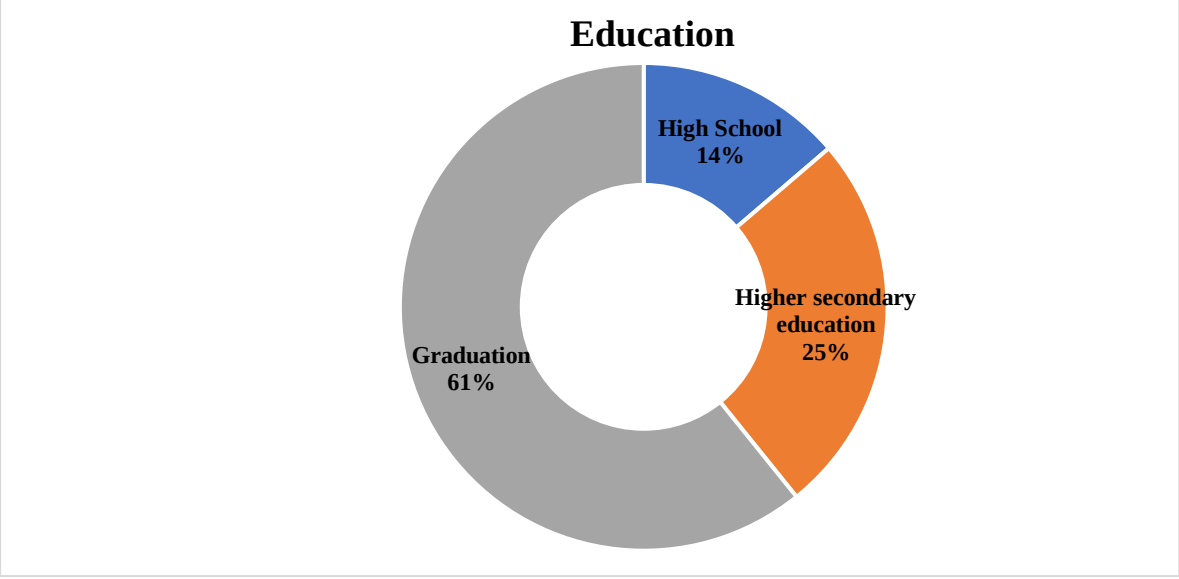

Fig.1. Education Of Participants

The education (Fig.1.) provided an overview of participants' educational backgrounds, illustrating the distribution of participants across different levels of education. This facilitated the exploration of potential associations between educational attainment and baseline knowledge levels regarding urinary incontinence and physiotherapy interventions.

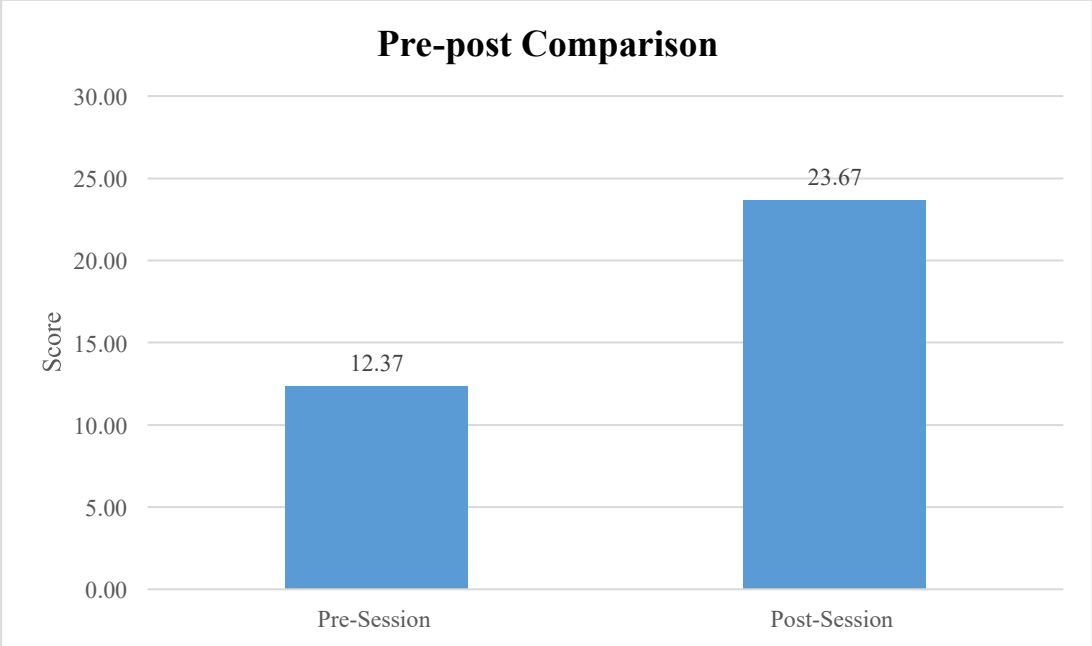

Fig.2. Comparison Between Pre-Session Score and Post-Session Score

The pre-post session score (Fig.2.) displayed the mean scores and standard deviations of participants' knowledge assessments administered before 12.37 (SD=2.87) and 23.67 (SD=3.84) after the awareness program. Paired t-tests were conducted to ascertain the significance of changes in knowledge scores following the intervention. In summary, the data analysis provided a comprehensive evaluation of the effectiveness of the awareness program in enhancing knowledge of physiotherapy interventions for urinary incontinence among premenopausal women. By

incorporating education, pre-post test scores, and age demographics, the findings not only demonstrated the impact of the intervention but also identified potential demographic factors influencing knowledge acquisition and retention in this population. These insights contribute to a deeper understanding of the mechanisms underlying educational interventions for urinary incontinence and inform the development of targeted strategies to improve awareness and management of this condition among premenopausal women.

DISCUSSION

The evaluation of level of awareness regarding the program on knowledge of physiotherapy interventions regarding urinary incontinence among premenopausal women is important. The observed patterns and trends underscore the importance of targeted interventions and comprehensive awareness campaigns in addressing knowledge gaps and fostering a deeper understanding within the community. One notable finding is the significant variation in awareness levels across different demographic groups, with disparities observed based on factors such as age, education, and area of residence (Rural). These disparities underscore the need for tailored approaches to reach diverse segments of the population effectively. Strategies such as utilizing multiple communication channels, including traditional media, social media platforms, and community outreach programs, may prove instrumental in reaching individuals with varying levels of access to information. Moreover, the identification of key determinants of awareness, such as prior exposure to information sources and engagement with awareness campaigns, provides valuable insights for designing targeted awareness programs. By leveraging existing platforms and networks, stakeholders can amplify their efforts and maximize the impact of awareness initiatives.

The role of attitudes, beliefs, and perceptions in shaping awareness levels. Participants expressed increased confidence in the efficacy of pelvic flower exercises, biofeedback techniques, and behavioural modifications in alleviating symptoms and improving quality of life. This attitudinal change is indicative of a border shift towards proactive engagement with physiotherapy services as a key component of urinary incontinence management. Understanding the underlying factors influencing individuals' receptiveness to awareness messages is essential for crafting compelling narratives and engaging communication strategies that resonate with the target audience.

Furthermore, the identification of barriers and facilitators to awareness offers actionable insights for overcoming obstacles and enhancing the effectiveness of awareness-raising efforts. Addressing misconceptions, dispelling myths, and providing credible information are crucial steps in promoting greater awareness and fostering behaviour change within the community. Future research should explore strategies to overcome these barriers and reach undeserved populations, including minority groups an individual with limited healthcare access. In conclusion, this research underscores the importance of ongoing monitoring and evaluation of awareness initiatives to gauge their impact and refine strategies accordingly. By adopting a multi-faceted approach that considers the diverse needs and preferences of the target population, stakeholders can work towards achieving sustained improvements in awareness levels and promoting positive social change.

CONCLUSION

This research study underscores the transformative impact of an awareness program on the knowledge of physiotherapy interventions regarding urinary incontinence among premenopausal women. Through targeted educational initiatives and comprehensive training modules a significant improvement in their understanding of the role of physiotherapy in managing this prevalent and often debilitating condition. One of the most notable outcomes of the awareness program was the

increased recognition of physiotherapy as a viable and effective treatment option for urinary incontinence. By providing participants with evidence-based information about pelvic floor exercises, biofeedback techniques, and behavioural modifications, the program empowered women to take an active role in their care and seek out physiotherapy services as part of their treatment plan. Furthermore, the positive impact of the awareness program extended beyond individual knowledge acquisition to encompass broader societal attitudes and perceptions surrounding urinary incontinence and its management. By fostering open dialogue, reducing stigma, and promoting a culture of proactive healthcare-seeking behaviour, the program contributed to a more supportive and inclusive healthcare environment for women. Importantly, the awareness program highlights the critical importance of ongoing education and outreach efforts in promoting optimal health outcomes and enhancing the quality of life for individuals. By integrating physiotherapy education into existing healthcare curricula, community health programs, and public awareness campaigns, we can ensure that women have access to the information and resources they need to effectively manage this condition. In conclusion, the effect of this awareness program on knowledge of physiotherapy interventions regarding urinary incontinence among premenopausal women underscores the transformative potential of targeted education and empowerment initiatives. By equipping women with the knowledge and skills to address urinary incontinence through physiotherapy, we can improve health outcomes, enhance quality of life, and promote holistic well-being for individuals.

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