DOI: https://doi.org/10.53350/pjmhs2216984

**ORIGINAL ARTICLE**

# Impact of Urinary Incontinence on Quality-of-Life among Females Receiving Pelvic Floor Muscles Strengthening Exercises for Urinary Incontinence

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## ABSTRACT

**Background:** Among women urinary incontinence (UI) is the most familiar problem and complain of lower urinary symptoms in urinary incontinence has found between 15% and 55%. It is a symptom with a lot of influence on quality of life of women majorly in their community-based, confidential and sexual domains.
**Aim**: To see the impact of urinary incontinence on quality of life among females receiving pelvic floor muscles strengthening exercises for urinary incontinence.
**Study design:** Cross-sectional study.
**Methodology:** Patients (n=165) females with urinary incontinence were enrolled. The effect of urine incontinence on female quality of life, as well as the effect of pelvic floor muscle strengthening exercises on urine incontinency. The study inquired about the respondents' backgrounds, daily routines, and the impact of incontinence on their social relationships, as well as the effects of urine incontinence on emotional and mental health. All female volunteers who have been dealing with urine incontinence for a few months will be included in the study. Analysis of data was done by SPSS v.26.
**Results:** They were having physiotherapy for urine incontinency and it had not affected their quality of life but shown a positive effect in their household, social and personal activities. When the standard scoring method of IIQ-7 questionnaire applied the results of 0=Not at all,1= slightly, 2= moderate, 3= greatly, total mean of 7 items was 2.60 and 85% out of 100 get recovered and their quality of life improved by physiotherapy.
**Conclusion**: It was concluded that the females who were receiving pelvic floor muscles strengthening exercises had good quality of life and urinary incontinence had not affected their quality of life (IIQ-7 score = 2.60) and had good impact on their quality of life.
**Keywords**: Urine Incontinency, Quality of Life, Physiotherapy and Pelvic Floor Muscles.

## INTRODUCTION

The most common pelvic floor problem in women is urinary incontinence, which is defined as an "involuntary urinary spill complaint". The International Society of Urinary Incontinence defines urinary incontinence as "involuntary urinary incontinence that objectively constitutes social and hygienic problems." Stress incontinence is involuntary urinary incontinence in response to exercise or physical exercise (e.g., motor activity) or sneezing or coughing (SUI urgency) emergency[1]. There are five different types of urinary incontinence. Despite this, some scientific report authors categorize people into three groups: stress incontinence, urge incontinence, and mixed urine incontinence[2].

In up to 85% of cases, kinesiotherapy for pelvic floor muscle strengthening, as well as intravaginal and/or surface electrical stimulation, have been shown to alleviate UI symptoms. Strengthening the muscles of the pelvic floor is one of the main goals of physiotherapy[3]. According to an analysis of 36 general population studies, the prevalence of "any" incontinence in women ranged from 25 to 45%. In middle-aged or older women, the prevalence of UI ranges from 30%-60%, and it increases with age[4].

In women, UI is associated with many risk factors. Age, weight, race / ethnicity, pregnancy, oral hormone therapy, previous hysterectomy, cognitive impairment, motor impairment, diabetes, and history of pelvic and perineal surgery are factors to consider[5]. Urinary incontinence, or involuntary loss of urine, is a common condition that can affect quality of life. Many women stop exercising because of urinary incontinence, which causes them to lose urine while exercising[6]. Women compete in a variety of sports, and the number of female competitors is growing. Top performance necessitates a high level of commitment, which may be proven by increasing the amount of time spent training vigorously[7].

Received on 05-04-5022
Accepted on 17-08-2022

Urinary incontinence has a negative impact on many aspects of life, impairing daily functioning in areas including work, physical activity, and intimacy[8]. In previous study the quality of life had considered an important part during assessment of some others aspects as they concluded that Doctors and researchers should use health related quality of life measures when assessing the health of obese children[9]. Biofeedback (BFB) is a positive reward approach for developing pelvic floor muscle activities. The intensity and length of pelvic floor muscle contractions can be measured using biofeedback. Pressure and electromyographic BFB, which are led by visual, aural, or tactile inputs, are the most common types of BFB used on the PF[10].

The need to stay knowledgeable about potential risk factors. This understanding will help with disease prevention, early identification, and treatment. The negative impacts of UI on quality of life and social activities, which are common among women with UI diagnosis, can be minimized by preventive.[11] SUI develops during physical effort or activity; the research group's activity level is a critical factor to consider when comparing prevalence studies and risk factors[12] conservative therapy (such as an exercise routine or topical estrogens) has failed, surgical surgery should be considered.[13] Age, BMI, parity, and mode of delivery, with vaginal birth being the most significant, are all known risk factors for UI[14].

Jacopo Demurtas proposed in 2021 that the UI may be linked to poor QoL using a variety of ways. For instance, persons with UI are more likely than those without to have comorbidities. Although other risk factors have been identified, sex, age, dementia, and mobility have been found to be the most closely associated.[15] To minimize UI incidence and prevalence rates, several of the identified related factors could be addressed. The prevalence of UI and its associated characteristics among young Chinese women (ages 17–40) is understudied. Future studies should focus on UI in young women in order to promote bladder health throughout their lives[16].

In 2020, to made assessment of quality of life better for Urdu speaking people. They used Rand Short Form 36-item (SF-36)

questionnaire, which is a frequently used tool for evaluating patient's quality of life in both clinical and research settings, but its translation into Urdu language and its psychometric properties has still not been tested before, in accordance to the pre-established guidelines[17,18]. In 2019, the research held to determine the Effect of Pelvic Floor Muscles Exercise on Quality of Life in Women with Stress Urinary Incontinence and Its Relationship with Vaginal Deliveries, they concluded that both the combined training of the PFM and the synergistic (TrA) muscle, and the isolated PFM exercises improve the QoL of women with SUI. Nonetheless, the combined PFM and TrA muscle physiotherapy is more effective. The exercises for the PFM and the synergistic muscle give better results in women who have given birth fewer than three times than isolated PFM exercises[19].

The objective of the study was to see the impact of urinary incontinence on quality of life among females receiving pelvic floor muscles strengthening exercises for urinary incontinence.

## METHODOLOGY

A cross-sectional study of women with urinary incontinence was conducted. A total of 165 patients with urinary incontinence were included in the study. Using a pre-tested, structured, effective and reliable questionnaire IIQ-7 short form, the effects of urinary incontinence on women's quality of life, and the effects of pelvic floor muscle strengthening exercises on urinary incontinence and the pelvic floor we evaluated the effects of muscles. Strengthen quality of life. The analysis and conclusions were based on information provided by women dealing with urinary incontinence. The study inquired about the respondents' backgrounds, daily routines, and the impact of incontinence on their social relationships, as well as the effects of urine incontinence on emotional and mental health. All female volunteers who have been dealing with urine incontinence for a few months were included in the study.

**Statistical analysis**: Analysis of data was done by SPSS v.26. Mean and standard deviation, range, and histogram were used to depict the quantitative variables. Frequencies, percentages, cross tabulation, bar chart, and pie chart were used to depict categorical variables.

## RESULTS

A total of 165 people completed the IIQ-7 questionnaire. When questioned about their marital status, 102(61.8%) of the study's participants said they were married and 63(38.2%) of the study participants said that they were single and never married before. As a result, the majority of the study's participants were married. The females were given options of poor, fair, good and excellent to give the review on physiotherapy treatment used for them and their review about therapy and effect of physiotherapy for urine incontinency was different. 2(1.2%) females said Poor, 15(9.2%) females gave Fair as review, 84(51%) females said Good and 64(38.6%) females said excellent. As a result, the majority of participants had a good result and some have excellent. Few of females didn't have a good result. When they asked about the ability to do household chores such as cooking, house cleaning and laundry. The answers were again in four options not at all, slightly, moderately, greatly. 39(23.6%) females choose Not at all option for ability to do household activities. 22(13.3%) females said that they were slightly able to do these activities. 52(31.5%) females said moderately able to do activities. 52(31.5%) females said excellent as they are very well and doing these activities easily. As a result, majority and equal number of females had a result of moderately and excellent. Which showed that they were cured and feeling well. And remaining females had poor and fair ability in household activities. When they asked about Physical recreation such as walking, swimming or other exercises. 36(21.8%) females said Not at all as they were not able to do physical activity. 49(29.7%) females said slightly able to do this. 51(30.9%) females selected moderately as they felt they are good in it. 29(17.6%) females selected excellent as it was easy for them. As a result, moderate number of females felt that they were good with it and for few it was easy for them. Remaining were not able or slightly able to do physical activities such as walking. Swimming, gym or other exercises (table-1).

Table-1: Descriptive analysis of IIQ-7, (n=165)

| Questions | Mean | S. D |
|---|---|---|
| IIQ-7(1) | 27.80 | 6.38 |
| IIQ-7(2) | 5.38 | 0.21 |
| IIQ-7(3) | 26.80 | 3.69 |
| IIQ-7(4) | 1.59 | 0.50 |
| IIQ-7(5) | 1.43 | 1.55 |
| IIQ-7(6) | 3.86 | 2.28 |
| IIQ-7(7) | 3.19 | 0.64 |
| IIQ-7(8) | 2.98 | 0.99 |
| IIQ-7(9) | 2.90 | 0.90 |
| IIQ-7(10) | 3.05 | 0.88 |
| IIQ-7(11) | 3.07 | 1.01 |
| IIQ-7(12) | 2.95 | 1.00 |
| IIQ-7(13) | 1.68 | 0.85 |
| IIQ-7(14) | 1.52 | 0.77 |

When the participants were questioned about Entertaining activities such as movies, concerts, etc. all of them gave the answers. 39 (23.6%) females said that they are not able for it and some were not feeling good to go out. 32 (19.4%) females said they are slightly able and go for entertaining activities. 42 (25.5%) females selected moderately. They were quite much involved in it. 52 (31.5%) females selected greatly. As a result, majority were involved in entertaining activities. Remaining were not involved in such activities. When participants were questioned about Ability to travel by car or bus more than 30 minutes from home. 35 (21.2%) females said Not at all. They couldn't go out. 17 (10.3%) females said they were slightly able to go out. 51 (30.9%) females selected moderately as they were good with travelling. 62 (37.6%) females answered excellent as this was easy for them. As a result, majority of participants were able to go out for 30 minutes and has ability to do travelling. Remaining still fell not good with travelling. When they were questioned about participation in social activities outside your home. 40 (24.2%) females were not at all able for social activities. 41 (24.8%) females were slightly able for social activities. 47 (28.5%) females were moderately able for outdoor social work. 37 (22.4%) females were great in doing social activities outside the home. As a result, majority were moderately able to do outdoor social work after treatment. Remaining were not good with outdoor activities. When they questioned about Emotional health such as nervousness, depression, etc. 63 (38.2%) females were not feeling any emotional health disturbance. 36 (21.8%) females were feeling emotional disturbance slightly. 37 (22.4%) females felt emotional disturbance moderately. 29 (17.6%) females were felling disturbance greatly. As a result, majority of participants were not feeling any disturbance in emotional health but some participants were still facing this disturbance it indicated that urine incontinency effects the emotional health and it could may remain for long time or need treatment for it separately further investigation is needed table-2.

Table 2: Descriptive Analysis Of IIQ-7 (Mean And S.D Of Options)

| Options | Mean | S. D |
|---|---|---|
| Not at all | 39.86 | 36.03 |
| Slightly | 30.14 | 11.82 |
| Moderatly | 52.29 | 20.89 |
| Greatly | 42.71 | 24.69 |

When participants were questioned about Feeling frustrated. 75 (45.5%) females were not feeling frustration after recovery. They felt themselves in good mood most of the time. 48(29.1%) females were feeling frustration. 26(15.8%) females were having

frustration moderately it means they get frustrated easily. 16(9.7%) females were in frustration most of time and get frustrated easily. It indicated that incontinency effected the mental health for this further investigation is needed and mental and emotional health should be examined with treatment and make them a part of treatment. As a result, majority patients were not feeling frustration issue after treatment and in remaining others some were having this issue slight, moderately and some were having this greatly. When the standard scoring method of IIQ-7 questionnaire applied the results of 0=Not at all, 1= slightly, 2= moderate, 3= greatly, total average of 7 items was 2.60 and 85% out of 100 get recovered and their quality of life improved by physiotherapy. As the score was less than the cutting value 9 hence urinary incontinence had no affected-on quality of life (Table-3).

Table 3: Descriptive Analysis Of IIQ-7 (Frequency and %age)

| Questions | Not At All | Slightly | Moderatly | Greatly |
|---|---|---|---|---|
| Sr.No | Frequency | Frequency | Frequency | Frequency |
| IIQ-7(1) | 22 (23.6%) | 16 (13.3%) | 69 (31.5%) | 49 (31.5%) |
| IIQ-7(2) | 13 (21.8%) | 37 (29.7%) | 69 (30.9%) | 46 (17.6%) |
| IIQ-7(3) | 11 (23.6%) | 27 (19.4%) | 69 (25.5%) | 58 (31.5%) |
| IIQ-7(4) | 21 (21.2%) | 16 (10.3%) | 59 (30.9%) | 69 (37.6%) |
| IIQ-7(5) | 20 (24.2%) | 27 (24.8%) | 59 (28.5%) | 59 (22.4%) |
| IIQ-7(6) | 87 (28.2%) | 52 (21.8%) | 18 (22.4%) | 08 (17.6%) |
| IIQ-7(7) | 105 (45.5%) | 36 (29.1%) | 22 (15.8%) | 02 (9.7%) |

## DISCUSSION

The general suggestion to employ pelvic floor muscle training as a first-line conservative management program for women with stress, urge, or mixed urine incontinence was supported by evidence on September 15, 2010. Women with stress or mixed urine incontinence should be given an initial trial of supervised PFMT that lasts at least three months. A regimen for strengthening the pelvic floor muscles should include at least eight contractions done three times daily. Exercise program should be continued if pelvic floor muscle training is useful. Although the evidence for PFMT's usage in urge incontinence is more recent, there have been several articles on the benefits of the treatment for urinary stress incontinence. Pelvic floor muscle training has no negative side effects that are long-lasting or disabling. There are other alternate management solutions available in the event that it fails. In comparison to pharmacological therapy, PFMT is less expensive, requires fewer resources, and has fewer, milder side effects. Similar to this, my research shown that pelvic floor exercises increase people's quality of life and have a good impact on urinary incontinence. Knowing that pelvic muscle strengthening exercises are an effective incontinence treatment and aid in urine control and discharge is also helpful.[20]

On July 2, 2015, a piece of writing appeared online with the findings of; 40 patients were enlisted (control 19, VKD 21). During week 16 of training, three patients in the control group left the program but there were none in the VKD group. The Australian pelvic floor questionnaires used to measure SUI scores revealed a substantially earlier improvement in the VKD group at week 4 (P =.035). The SUI scores for the groups did not, however, significantly differ at week 16. At weeks four and sixteen, the VKD group's strength of the pelvic floor muscles was significantly higher (P =.025, P=0.001). At week 16, both groups' subjective cure rates were similar (62.5 percent for the control group and 61.9 percent for the VKD) (P=0.742). These findings suggest that they have similar good outcomes to mine. They conducted experimental study, which can produce outcomes that are more distinct and satisfying, and this research corroborated my findings. They employed the Vibrance Kegel Device with Pelvic Floor Muscle Exercise, which are included in pelvic floor muscles strengthening exercises, since it was an experimental study, and I conducted a cross-sectional study that revealed the same outcomes.[21]

June 9, 2011 While their findings support the study, Cathryn Glazener and David Jenkinson found some clear results regarding pelvic floor muscle training. They conducted a study and concluded that PFM training has been shown to be successful in treating SUI in women. This PFM training method is the most successful, but is currently only partially known. Monitored PFM training that is performed more frequently (more than 2 sessions per month) or enhanced with biofeedback seems to be more effective, but there is consensus on the data and therefore which component of the PFM training program (B. The strength and duration of muscle contractions, the type of training used, the number of repeated contractions used, the location of exercise, the inclusion or exclusion of biofeedback are most effective, as well as long-term compliance and treatment. Research on factors and therapeutic approaches that influence consensus compliance is still in its infancy. The question of whether a PFM training program is effective is no longer relevant. Rather, which factors (including adjuvant therapies) and their combinations are most effective. In addition, it is not possible to study PFM training without considering PFM dysfunction, strength training, and adherence variables and techniques generated from physiology theory and state-of-the-art technical research. Future RTCs will need to address some of the issues surrounding the most effective ways to treat women with SUI, incorporating techniques and tactics that have proven successful in both treatment and long-term adherence to treatment[22].

The short-term pelvic floor strengthening program included sessions and exercises. Gunvor Hilde concluded on July 27, 2012 that the short-term results of PFMT can be maintained with long-term follow-up without incentives for continuing education. This is based on data found that the majority of female urinary incontinence patients have a longer effect. Learn cures, solve this problem and improve your quality of life thereafter. However, this study shows a high degree of heterogeneity in terms of both intervention and methodology qualities[23].

In his article published on July 26, 2013, Robert D. Herbert2 came to the conclusion that there isn't enough proof to say that alternate exercise routines can help women with stress urinary incontinence stop leaking urine. For women with stress urine incontinence, alternative exercise regimes should not yet be advised for use in clinical practice. developed a favorable and influential comments by treated patients after assessing the facts gathered by various patients. Although some ladies remain the same following therapy, statistics show that it improves their life and helps them overcome urinary incontinence[24].

A 6-week pelvic floor muscle training program showed the severity of symptoms in pregnant women with stress urinary incontinence, according to a study conducted by Bussara Sangsawang and Yaowalak Serisathien on December 6, 2011 in pregnant women suffering from stress urinary incontinence. It has been reduced. After the experimental group completed the pelvic floor muscle training program, they conducted an experimental study showing that the frequency and amount of incontinence and the perceived severity of SUI were all significantly lower than before. In addition, women in the experimental group had significantly lower frequency, amount, and perceived severity scores of SUI than women in the control group after participation. This study gains new depth with the discovery that pelvic floor muscle exercise benefits not only pregnant women but also women of the opposite genders[25].

**Limitations:** Single centre study with small sample size and financial constrains. The IQoL survey consists of seven questions that assess behavioral restrictions, psychosocial impacts, and UI-induced social embarrassment. Daily activity restrictions, physical restrictions, social restrictions, relationships, emotions, sleep / mood, and severity levels.

## CONCLUSION

It was concluded that the females who were receiving pelvic floor muscles strengthening exercises had good quality of life and

urinary incontinence had not affected their quality of life (IIQ-7 score = 2.60) and had good impact on their quality of life.

**Author's contribution: AF & FA:** Conception of idea, Data Collection, Data Analysis, Interpretation of data, Composition of article, **AM, SM & WL:** Composition of the article, critical Review of the article, statistical Interpretation and methodology formation.

**Conflict of interest:** None

**Funding:** None

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