Stress urinary incontinence (SUI) is the spontaneous urine loss upon any effort or physical activity, or coughing or sneezing [1]. Urine incontinence (UI) is actually a serious problem during the pregnancy and postpartum. It can influence the quality of life and cause psychological problems that lead to depression and reduced self-esteem [2]. In 2016, a case control study was conducted on 344 postpartum females showed that the prevalence of stress UI was 45.5% in the women, occurrences of the leakage of urine many times a day in 44.2%, of which 71.4% were in reduced quantities while 57.1% upon coughing or sneezing, UI started in the pregnancy and remained throughout the postpartum duration in 70.1% of cases [3]. Stress urinary incontinence is the most widespread form of urinary incontinence [4].

**KEY WORDS:** Stress urinary incontinence, Kegel exercises, stabilization exercises, postpartum

**How to Cite:** Khalid, A. , Fatima, S. , Khan, W. , Zia, I. , & Ahmad, J. . (2022). Comparison of Kegel Exercises and Stabilization Exercises for Urinary Incontinence in Postpartum Females. Pakistan Journal of Health Sciences, 3(04). https://doi.org/10.54393/pjhs.v3i04.144

**Corresponding Author:** Amna Khalid
College of Physical Therapy, Government College University, Faisalabad, Pakistan
amnakhalid@gcuf.edu.pk

**Received Date:** 17th September, 2022
**Acceptance Date:** 24th September, 2022
**Published Date:** 30th September, 2022

**INTRODUCTION**
Stress urinary incontinence (SUI) is the spontaneous urine loss upon any effort or physical activity, or coughing or sneezing [1]. Urine incontinence (UI) is actually a serious problem during the pregnancy and postpartum. It can influence the quality of life and cause psychological problems that lead to depression and reduced self-esteem [2]. In 2016, a case control study was conducted on 344 postpartum females showed that the prevalence of stress UI was 45.5% in the women, occurrences of the leakage of urine many times a day in 44.2%, of which 71.4% were in reduced quantities while 57.1% upon coughing or sneezing, UI started in the pregnancy and remained throughout the postpartum duration in 70.1% of cases [3]. Stress urinary incontinence is the most widespread form of urinary incontinence [4]. The sign of stress incontinence detected only after treating the coexisting pelvic organ prolapse is referred to as SUI on prolapse reduction. SUI symptoms are clear as the spontaneous urine leakage upon exertion, coughing or sneezing. SUI indication is the involuntary urine outflow from urethra, associated with effort or sneezing or coughing [5]. Age, gender, menopause, and a history of vaginal delivery are all linked with UI, as are other factors that can be modified but aren’t necessarily necessary (e.g., smoking habit, excessive alcohol use, bad toileting behaviors, obesity and constipation). By restricting social activities and interactions, reducing workplace abilities, and high financial strain on women as well as society, UI lowers female’s life quality [6]. Study reveals corresponding possible origins of UI, includes detrusor or pelvic floor muscle malfunction, dysfunction of...
neural regulator of storage and voiding of urine [7]. Multiple traditional methods in case of SUI are available, some of them are pelvic floor muscle training, electrical stimulation, biofeedback and bladder training, acupunctere and vaginal cones [8]. Weighted vaginal cones can be used to aid women to train their PF and the pelvic floor is constricted from sliding out [9,10]. In SUI patients, the bladder training combined with PFMT also had substantial improvements in UI indications, QOL, and everyday UI incidents [11]. Kegel exercises are the most prevalent treatments and are generally custom-made. The number of contractions, duration of holding time, and sets differ across different participants [12]. Stabilization exercises are such interventions that are used to improve the particular trunk muscles function in order to achieve the control and coordination of spine and pelvis using segmentation and simplification which are the rules of motor learning [13]. A considerable amount of work had been done on kgel exercises for urinary incontinence but very few literature is found on the stabilization exercises for treating the urinary incontinence in postpartum females. Aim of this study is to provide evidence of comparative effect of kegel exercises and stabilization exercises for urinary incontinence in postpartum females.

**METHODS**

It was a Quasi Experimental Study. A total of 30 postpartum females participated according to inclusion exclusion criteria, returned the questioner and were willing to participate in the study. Sample was selected by using convenience sampling technique. The data were collected from postpartum females from different Physiotherapy OPDs of Faisalabad. The criteria used to choose the participants was ages between 30 - 60 years' females participants was selected, suffered minimum of 3 months of SUI, grade of pelvic organ prolapse, stage ≤ 2, urologuric females and vaginal delivery. The criteria used to exclude the participants was anti-incontinence surgery history within the previous 12 months, pelvic prolapse repair or urethral surgery within the previous 12 months, clinically significant heart impairment, pregnant females, positive urinary tract infection, history of C- Section and participants who can't perform all four types of stabilization exercises. Data collection tools used in this study was Incontinence frequency chart, King's Health Questionnaire and Pad tests.

**RESULTS**

Table 1 explains in group 1 that out of 15 participants 5(33.3%), 4(26.7%), 6(40%), were in age group of 31-40, 41-50, and 51-60 years, respectively. Out of 15 participants 3(33.3%), 5(33.3%), 5(33.3%), 1(6.7%), 1(6.7%) were in 1-5, 6-10, 11-15, 16-20 and 21-25 incontinence group before kegel exercise, respectively and out of 15 participants 9(60%), 5(33.3%), 1(6.7%) were in 1-5, 6-10, and 16-20 incontinence frequency group after kegel exercise, respectively. Table 1 also explains in group 2 that out of 15 patients were included in Stabilization exercise group, 5(33.3%), 5(33.3%), 5(33.3%) were in age group of 31-40, 41-50 and 51-60 years, respectively. Out of 15 patients 6(40%), 3(20%), 4(26.7%), 1(6.7%) were in 1-5, 6-10, 11-15, 16-20, and were in 21-25 incontinence frequency group before stabilization exercise, respectively and out of 15 patients 3(20%), 5(33.3%), 4(26.7%), 2(13.3%), 1(6.7%) were in 1-5, 6-10, 11-15, 16-20 and 21-25 incontinence frequency group after stabilization exercise, respectively.

**Table 1: Age and distribution of exercise**

Table 2 explains the descriptive statistics about Kegel group comparison, Mean ± SD was 2.533 ± 1.302 at before treatment and Mean ± SD was 1.533 ± 0.833 at after treatment. Table 2 also explains the descriptive statistics about Stab group comparison, Mean ± SD was 2.866 ±1.125 at before treatment and Mean ± SD was 2.533 ± 1.187 at after treatment.

**Table 2: Paired Sample T test of Group 1 and Group 2**

Table 3 explains that kegel exercise treatment, effects showed significant difference and were founded at t value 5.123 and p-value 0.01. Table 3 also explains that after stabilization exercise treatment, effects showed significant difference and were founded at t value 2.646 and p-value 0.011.
DISCUSSION

The present research outcomes were based to check the comparison between kegel exercise and stabilization exercise for stress urinary incontinence in postpartum women included 30 postnatal females from physiotherapy OPDs of Faisalabad. The investigation and outcomes of this research decided that both kegel exercise and stabilization exercise showed significant difference. Patient’s age was a main factor to determine the severity of SUI symptoms. Associated factors like not following the treatment protocols and not doing exercises on regular basis were found to be associated with the present study results. Another study showed the same results i.e. there is a difference between kegel exercise and stabilization exercise. This study was done to know about the pain severity at leisure and during diverse functional tasks in postpartum women having low back pain during introducing spinal stabilization exercises, as well as the influence of Kegel exercise. Lumbar stabilization techniques reduce discomfort and improve functionalities, and the Kegel technique is useful in treating urine incontinence [14-16]. Our research also indicated a substantial difference between kegel exercise and stabilization exercise with a significant value of 0.012, which is far less than the significant P value i.e. 0.05. Hence, other hypothesis is acknowledged and null supposition is excluded. Our study also showed that incontinence is more prevalent in elderly population. The table 4.1 showed that out of total 30 patients, 11 stress urinary leakage patients stayed from age group 51-60 years, which makes the 36.7% of the total percentage. Another study conducted to examine the frequency of urinary leakage in elderly as a part of normal aging process showed the same results [17,18]. As age increases, an elevated level of urine leakage and associated lower urinary tract problems prevails. Men who have reached their 7th decade of life and post-menopausal women are more aware of this influence. Although there is much discussion over if these significant effects are pathological or are a component of the “regular” process of aging, elderly people and healthcare providers frequently hold the opinion that incontinence is an anticipated sign of aging. Nevertheless, the modifications in the lower urinary tract, PNS, and CNS that encompass this assessment are both multi-faceted and imperfectly comprehended. Our study showed that stabilization exercises proved to stand better in managing stress urinary leakage. The table showed the significance value of 0.011, which is less than 0.05 (significant p value). Studying the influence of pelvic floor stabilization exercises on the signs and life quality of women with stress urine incontinence was conducted in 2020 [19-20]. This study concluded that after treatment, there was a high statistical difference seen between cases and controls in terms of the manifestations and quality of lifespan experienced by females with UI (p 0.01). Treatments to stabilize the pelvic floor were successful in easing discomfort and enhancing value of lifespan in urinary leakage patients. Recommending women to use pelvic floor stabilization techniques as an efficient strategy to manage the indications of urine incontinence and enhance their QOL.

CONCLUSIONS

This study concluded that the occurrence of urinary leakage due to physical strain increases with age as 36.7% participants of the study were from 51-60 years of age group. This study also proved that both kegel exercise and stabilization exercise were beneficial in treating stress urinary incontinence. It also proved that both exercises are highly statistically significant different with a p value of 0.012. Our research also showed that stabilization is a better approach in treating stress urinary incontinence by showing greater mean value of 2.533 ± 1.187. In the end, kegel exercises are primary treatment of SUI but when doing them alone, they showed slight improvement with a mean value of 1.533 ± 0.83.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

SOURCE OF FUNDING

The author(s) received no financial support for the research, authorship and/or publication of this article.

REFERENCES

[1] Tähtinen RM, Cartwright R, Tsui JF, Aaltonen RL, Aoki Y, Cárdenas JL, et al. Long-term Impact of Mode of...
Khalid A et al., Kegel Exercises and Stabilization Exercises for Urinary Incontinence in Postpartum Females

Delivery on Stress Urinary Incontinence and Urgency Urinary Incontinence: A Systematic Review and Meta-analysis. European urology oncology. 2016 Jul; 70(1):148-158. doi: 10.1016/j.eurouro.2016.01.037.

[2] Siahkal SF, Iravani M, Mohaghegh Z, Sharifipour F, Zahedian M. Maternal, obstetrical and neonatal risk factors' impact on female urinary incontinence: A systematic review. International urogyneocology journal. 2020 Nov; 31(11):2205-24.

[3] Leroy LD, Lúcio A, Lopes MH. Risk factors for postpartum urinary incontinence. Revista da Escola de Enfermagem da USP. 2016 Mar; 50:0200-7.

[4] Mooserdorf-Steinhauser HF, Berghmans B, Spaanderman ME, Bols EM. Prevalence, incidence and bothersomeness of urinary incontinence in pregnancy: a systematic review and meta-analysis. International urogyneocology journal. 2021 Jul; 32(7):1633-52.

[5] Osman NI, Li Marzi V, Cornu JN, Drake MJ. Evaluation and Classification of Stress Urinary Incontinence: Current Concepts and Future Directions. European Urology Focus. 2016 Aug; 2(3):238-244. doi: 10.1016/j.euf.2016.05.006.

[6] Xue K, Palmer MH, Zhou F. Prevalence and associated factors of urinary incontinence in women living in China: a literature review. BMC urology. 2020 Dec; 20(1):1-26.

[7] Aoki Y, Brown HW, Brubaker L, Cornu JN, Daly JO, Cartwright R. Urinary incontinence in women. Nature reviews Disease primers. 2017 Jul; 3(1):1-20.

[8] Li H, Wu RF, Qi F, Xiao AM, Ma Z, Hu Y, et al. Postpartum pelvic floor function performance after two different modes of delivery. Genetcs and Molecular Research. 2015 Apr; 14(2):2994-3001. doi: 10.4238/2015.April.10.9.

[9] Herbison GP and Dean N. Weighted vaginal cones for urinary incontinence. Cochrane Database of Systematic Reviews. 2013(7).

[10] Yüce T, Dökmeçi F, Çetinkaya ŞE. A prospective randomized trial comparing the use of tolterodine or weighted vaginal cones in women with overactive bladder syndrome. European journal of obstetrics, gynecology, and reproductive biology. 2016 Feb; 197:91-7. doi: 10.1016/j.ejogrb.2015.11.034.

[11] Kaya S, Akbayrak T, Gursen C, Bek sac S. Short-term effect of adding pelvic floor muscle training to bladder training for female urinary incontinence: a randomized controlled trial. International Urogyneocology Journal. 2015 Feb; 26(2):285-93. doi: 10.1007/s00192-014-2517-4.

[12] Chang SR, Chen KH, Lin HH, Chao YM, Lai YH. Comparison of the effects of episiotomy and no episiotomy on pain, urinary incontinence, and sexual function 3 months postpartum: a prospective follow-up study. International journal of nursing studies. 2011 Apr; 48(4):409-18. doi: 10.1016/j.injrurstu.2010.07.017.

[13] Gomes-Neto M, Lopes JM, Conceição CS, Araujo A, Brasileiro A, Sousa C, et al. Stabilization exercise compared to general exercises or manual therapy for the management of low back pain: A systematic review and meta-analysis. Physical Therapy in Sport. 2017 Jan; 23:136-142. doi: 10.1016/j.ptsp.2016.08.004.

[14] Urme NA, Alam F, Jahan N. Effectiveness of Specific Lumbar Stabilization Exercise for LBP among Postpartum Women: A Quasi-Experimental Study. Journal of Advanced Academic Research. 2021 Jun; 8(1):79-95.

[15] Khosravi A, Riazi H, Simbar M, Montazeri A. Effectiveness of Kegel exercise and lubricant gel for improving sexual function in menopausal women: A randomized trial. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2022 Jul; 274:106-12.

[16] Gibson W and Wagg A. Incontinence in the elderly, 'normal' ageing, or unaddressed pathology? Nature Reviews Urology. 2017 Jul; 14(7):440-448. doi: 10.1038/nrurol.2017.53.

[17] Simpson AN, Garbens A, Dossa F, Coyte PC, Baxter NN, McDermott CD. A cost-utility analysis of nonsurgical treatments for stress urinary incontinence in women. Female pelvic medicine & reconstructive surgery. 2019 Jan; 25(1):49-55.

[18] Fathy Ahmed N and Atef Osman H. Effect of Pelvic Floor Stabilization Exercises on Symptoms and Quality of Life among Women with Stress Urinary Incontinence. Egyptian Journal of Health Care. 2020 Mar; 11(1):1139-52.

[19] Herbison GP and Dean N. Weighted vaginal cones for urinary incontinence. Cochrane Database of Systematic Reviews. 2013(7).

[20] Mooserdorf-Steinhauser HF, Berghmans B, Spaanderman ME, Bols EM. Prevalence, incidence and bothersomeness of urinary incontinence in pregnancy: a systematic review and meta-analysis. International urogyneocology journal. 2021 Jul; 32(7):1633-52.

[21] Siahkal SF, Iravani M, Mohaghegh Z, Sharifipour F, Zahedian M. Maternal, obstetrical and neonatal risk factors' impact on female urinary incontinence: A systematic review. International urogyneocology journal. 2020 Nov; 31(11):2205-24.