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Original Article

Comparison of Kegel Exercises and Stabilization Exercises for Urinary Incontinence in Postpartum Females

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ABSTRACT

Stress urinary incontinence (SUI) is the spontaneous urine loss upon any effort or physical activity, or coughing or sneezing**. Objectives:** This study aimed to investigate the effects of Kegel exercises and stabilization exercises on urinary incontinence along with the improvement in the strength of pelvic floor. **Methods:** This was a quasi-experimental study in which purposive sampling was done from postpartum females from Physiotherapy OPDs of Government hospitals of Faisalabad after meeting inclusion exclusion criteria. Thirty females with urinary incontinence were assigned into two groups: Group A and Group B. Group A received Kegel exercises for 4 weeks and group B received stabilization exercises for 4 weeks. Data was analyzed by SPSS version 16. Paired T test was used for inter-group analysis and independent T test was used for intra-group analysis. **Results:** The study concluded that the incidence of stress urinary incontinence 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 and showed significant difference with a p value of 0.012. **Conclusions:** It showed that stabilization exercises are 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 stress urinary incontinence but when doing them alone, they showed lesser improvement with a mean value of 1.533 ± 0.833.

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

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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, acupuncture 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 kegel 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, ultiparous 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(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 1(6.7%), 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

Parameter		Group 1	Group 2
		Frequency(%)	Frequency(%)
Age	31-40	5(33.3%)	5(33.3%)
	41-50	4(26.7%)	5(33.3%)
	51-60	6(40.0%)	5(33.3%)
Incontinence frequency before exercise intervention	1-5	3(20.0%)	1(6.7%)
	6-10	5(33.3%)	6(40.0%)
	11-15	5(33.3%)	3(20.0%)
	16-20	1(6.7%)	4(26.7%)
	21-25	-	1(6.7%)
	26-30	1(6.7%)	-
Incontinence frequency After Exercise Intervention	1-5	9(60%)	3(20.0%)
	6-10	5(33.3%)	5(33.3%)
	11-15	-	4(26.7%)
	16-20	1(6.7%)	2(13.3%)
	21-25	-	1(6.7%)

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.

		Mean±SD	N	S.E
Pair 1 and 2	Pre_Kegel	2.5333±1.30201	15	0.33618
	Post_Kegel	1.5333±0.83381	15	0.21529
	Pre_Stab	2.8667±1.12546	15	0.29059
	Post_Stab	2.5333±1.18723	15	0.30654

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.

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		Paired Differences				t	d f	p-value
		Mean±SD	S.E	95% Confidence Interval of the Difference				
				s	Upper			
Pair 1	Pre_Kege l	1.0000±0.7559	0.1951	0.5813	1.4186	5.12	14	0.013
	Post_Kegel	0±3	8	8	2	3		
Pair 2	Pre_Stab	0.3333±0.4879	0.1259	0.0631	0.6035	2.64	1	0.011
	Post_Stab	3±5	9	2	5	6	4	

Table 3: Paired Samples Test

Table 4 explains the descriptive statistics group vise comparison Stab and Kegel group, Mean ± SD was 2.533 ± 1.187 at stabilization as a treatment and Mean ± SD was 1.533 ± 0.833 at kegel as a treatment. Table 4 explains significant difference was founded between the two interventions at t value 2.670 and p-value 0.012. So, we accepted alternative hypothesis and null hypothesis is rejected.

	Group	N	Mean±SD	S.E	t	p-value
Comparison	Stab	15	2.5333±1.18723	0.30654	2.670	0.012
	Kegel	15	1.5333±0.83381	0.21529		

Table 4: Independent t test for Comparison.

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.

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