

Effect of Combined Pallof Press and Kegels Training for Urinary Incontinence in Multigravida Women and Quality of Life

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Introduction

Urinary incontinence has become one of the main health issue faced by women after pregnancy. It's mainly due to inadequate care and neglect to the pelvic floor muscles in regaining strength leading to muscle weakness and Urinary incontinence. Traditional Kegel's focus only on pelvic floor muscles while core stability and abdominal strength also plays important role in preventing the occurrence of urinary incontinence. Aim and objective: The aim of the study was to find out the effects of combined Pallof press and Kegel's exercise for urinary incontinence in multigravida women and quality of life. Methodology: 30 women (group A-15, group B-15) of age group between 30 - 40 years, participated in simple experimental study for a duration of 8 weeks. Subjects were assessed by RUIS - Revised urinary incontinence scale and IIQ7 - Incontinence impact questionnaire. Result : The critical value of U at $p < 0.5$ is 64 which means it is statistically significant in controlling incontinence and critical value is not significant for IIQ7. Urinary incontinence occurrence frequency is high in women without core stability and abdominal strength. The study also revealed group of Kegel's exercise's alone still faces the occurrence of urinary incontinence more than those practiced both pallof press and kegels. If the core muscles doesn't have adequate strength and stability Kegels can't alone control the issue in a successful and satisfactory way. Conclusion: Subjects who practiced both Kegel's & Pallof press exercise shows less frequency of Urinary incontinence.

Keywords: Urinary incontinence, Kegel's, Pallof press, RUIS Revised urinary incontinence study form, IIQ7 form, Core stability, abdominal strength.

Introduction

Urinary incontinence is a significant health problem worldwide. It has a considerable social and economic impact on individuals and society. Urinary incontinence — the loss of bladder control — is a common and often embarrassing problem. The severity ranges from occasionally leaking urine when cough or sneeze to having an urge to urinate that's so sudden and strong¹.

According to J Urology analyzed data on 17,850 adults 20 years old or older who participated in the 2001 to 2008 cycles of the National Health and Nutrition Examination Survey proves that prevalence of urinary incontinence in the combined surveys was 51.1% in women and 13.9% in men.² In young women, the prevalence of incontinence is

usually low but around menopause, with a steady rise there-after into later life. Stress and mixed incontinence is higher than urge incontinence.³

In men, the prevalence of incontinence is much lower than in women, about 3% to 11% overall, with urge incontinence accounting for 40% to 80% of all male patients. Stress incontinence accounts for less than 10% of cases and is associated with prostate surgery, trauma, or neurological injury³.

Urinary incontinence has become one of the main health problem faced by women after delivery. Stress incontinence is one of the common type of urinary incontinence seen in delivered women caused by muscle weakness^{3,4}.

Pelvic floor exercises shows a wide range of improvement in regaining the muscle strength but core stability and gluteal contraction also plays an important role in urinary incontinence which plays an important role in maintaining spinal stability, proper posture thereby improving postural problems, reducing weight gain after delivery, preventing back pain and making people physically more active⁴.

Stress urinary incontinence is highly prevalent, affecting millions of women worldwide. It is difficult to pinpoint the number of women affected by stress urinary incontinence, because often they do not report it^{1,2,4}. However, studies show that 20.8% of women over the age of 15 have experienced stress urinary incontinence worldwide². The reported prevalence of stress urinary incontinence in India is about 12%³. Most of the women who are suffering from stress urinary incontinence withdraw from social life and try to hide the problem from families, friends^{4,5}.

Women who have undergone normal vaginal delivery reported stress urinary incontinence more, than those who delivered through cesarean section. Operative vaginal deliveries, mainly forceps delivery can cause stress incontinence symptoms in the postpartum period⁶. A descriptive study was conducted in Calcutta to determine the incidence of postpartum stress urinary incontinence and its correlation with mode of delivery in 250 primipara women⁷. Among them 222 responded to the questionnaire for stress urinary incontinence (SUI). The incidence of stress urinary incontinence was proved to be 23.42%⁸. The overall prevalence of urinary incontinence between the ages of 20 to 80 years was 53.2%. The incidence was significantly higher after vaginal delivery about 27.1% and more so after forceps delivery (35.5%) in comparison with that after cesarean section (14.3%)⁵. In middle aged women lack of core stability and core strength is very common because of obesity, pregnancy etc. leading to increased chance for urinary incontinence⁴.

Urinary incontinence is more common in women because of childbirth stretching the pelvis and its muscles and/or because of a different anatomy than men, with a shorter urethra that allows easier passage of urine⁷. And the prevalence of incontinence increases with age – 17 per cent ages 40 to 59, 23 per cent ages 60 to 79 and 32 per cent after age 80^{4,5}.

Stress incontinence occurs when urine leaks with

increased intra-abdominal pressure, such as when you cough, sneeze or laugh or do heavy lifting. It is caused by decreased strength of the urinary sphincter and pelvic floor muscles⁵.

Among the different types of urinary incontinence, stress urinary incontinence predominates in most surveys. This condition affects women of all age groups and probably related to pregnancy and labour⁸. A descriptive study was conducted in community setting to assess the prevalence of stress urinary incontinence in premenopausal nulliparae, primiparae and grand multiparae and to examine possible obstetric risk factors. Three hundred consecutive nulliparae and grand multiparae, 20 to 43 years of age, were interviewed during the third postpartum day about the symptoms of stress urinary incontinence. Prevalence was significantly higher in grand multiparae (21%). It was lower in nulliparae (5%). Grand multiparity was found to be associated with an increased risk of developing persistent stress urinary incontinence during reproductive ages. Study concluded that frequent vaginal birth adds more risk to have SUI^{10,11}.

Methodology

30 female subjects were selected based on the inclusion criteria for the experiment. The written consent letter was taken from them and the description of the study was explained in detail. The participants were randomly grouped into group A and B. Group A includes 15 females and underwent kegels training and group B with 15 females and received kegels combined with Pallof press exercise. Group A received exercise of 3 sets per day daily for 8 weeks. Group B was given kegels and Pallof press exercise daily for a period of 8 weeks. Start by lying on back. Contract pelvic floor muscles for 3 to 5 seconds. Relax for 3 to 5 seconds. Repeat the contract/relax cycle 10 times. Do 3 set exercises of 10 repetitions, daily 3 times. Group B used red resistance band since the medium resistance ideal for all population. Start with kegels exercise's same as group A followed by Pallof press set up with a band firmly affixed to an immovable object. Stand in line with the band apparatus and turn body perpendicular. Center the band on chest using both hands. Push the band straight out in front, keep body in a straight-line with no rotation. Hold it in front for 3 seconds, return the band in complete control to chest. Continue the exercise 3 sets of 10 repetitions in both sides. RUIS and IIQ 7 were taken on the first day and after the 8th week.



Figure : 1 kegels exercise



Figure : 3 Pallof press



Figure :2 Starting position of Pallof press

Results

The intervention of kegels exercise and pallof press exercise were found to be individually effective in controlling urinary incontinence(RUIS) and improving quality of life of women (IIQ-7).

But in comparison of post test scores of outcome measures evidenced that the reduction in the urinary incontinence frequency and improvement in quality of life scores were significantly more among the women s treated with combined kegels and pallof press exercise than with women s treated with kegels alone .

It may be concluded that combined pallof press and kegels exercise is more effective in treating stress urinary incontinence and improving quality of life in the long run.

Table-1: Range, mean and SD of outcome measures of subjects with stress urinary incontinence in kegels group.

Sno	Outcome measures	Kegels Group				Wilcoxon test	p-value
		Pre test		Post test			
		Range	Mean ±SD	Range	Mean ±SD		
1	RUIS	5-7	6.06±0.79	4-6	4.66±0.72	U=64 Z=-3.73	0.05
2	IIQ-7	5-8	6.26±0.88	4-6	4.8±0.67	Z=-4.23	0.05

Note; S-significant(p<0.05), NS-Not significant(p>0.05).

The above **table-1** shows the pre and post test outcome measures in this study. In pre test, RUIS was ranging within 5-7 with mean and SD of 6.06±0.79. But in post test, it was found to be decreased to the range 4-6 with mean and SD of 4.66±0.67. The non-parametric test for comparison of dependent outcomes, the Wilcoxon test was carried out and it was found to be significant (p<0.05).

Similarly, in pre test, IIQ-7 were ranging within 5-8 with mean and SD of 6.26±0.88 But in post test, it was found to be increased to the range 4-6 with mean and SD of 4.8±0.67. The non-parametric test for comparison of dependent outcomes, the Wilcoxon test was carried out and it was found to be significant (p<0.05).

It shows there is a significant improvement on stress urinary incontinence and quality of life among subjects

treated with kegels exercise.

Table-2: Range, mean and SD of outcome measures of subjects with stress continence in Kegel and pallof group.

Sno	Outcome measures	Kegel + Pallof				Wilcoxon test	p-value
		Pre test		Post test			
		Range	Mean \pm SD	Range	Mean \pm SD		
1	RUIS	5-7	6.13 \pm 0.74	4-6	4.73 \pm 0.70	U=64 Z=-3.73	0.05
2	IIQ-7	5-8	6.86 \pm 0.91	4-6	4.66 \pm 0.61	Z=-4.23	0.05

Note; S-significant ($p < 0.05$), NS-Not significant ($p > 0.05$).

The above table-2 shows the pre and post test outcome measures stress incontinence and quality of life. In pre test, RUIS was ranging within 5-7 with mean and SD of 6.13 \pm 0.74. But in post test, it was found to be decreased to the range 4-6 with mean and SD of 4.73 \pm 0.70. The non-parametric test for comparison of dependent outcomes, the Wilcoxon test was carried out and it was found to be significant ($p < 0.05$).

Similarly, in pre test, IIQ-7 were ranging within 5-8 with mean and SD of 6.86 \pm 0.91. But in post test, it was found to be increased to the range 4-6 with mean and SD of 4.66 \pm 0.16. The non-parametric test for comparison of dependent outcomes, the Wilcoxon test was carried out and it was found to be significant ($p < 0.05$).

Its evident that there is a significant improvement on stress urinary incontinence and quality of life among subjects treated with Kegels and pallof exercise.

Discussion

The main objective of the study was to find out the effect of combined pallof press and kegel training for urinary incontinence in multigravida women and its effects on quality of life.

The study was carried out at various physiotherapy clinics and houses in and around Bangalore and the mean age was taken 35.67 \pm 2.91 (group A-kegels) and 34.8 \pm 3.14 (group B-kegels and pallof press)

There is a crucial link between urinary incontinence and quality of life. Previous studies shows that prevalence of urinary incontinence and other pelvic floor disorders like pelvic organ prolapse will increase as the global population ages. PFE are advised as a first line of treatment for women with SUI. These exercises are

designed to strengthen weak perineal and pelvic floor muscles, but their success highly depends on patients' motivation level and compliance with the exercises. Contraction of the abdominal muscles may provide an efficient mechanism by which contraction of the pelvic floor muscles is initiated, particularly for patients who have difficulty in learning how to contract those muscles. However, the use of Abdominal muscle training to rehabilitate the pelvic floor muscles may be useful in treating SUI. The abdominal muscles act indirectly to activate the pelvic floor muscles and maintain their coordination, support, endurance, and strength.

The benefits of pelvic floor exercises can be maintained for up to 5 years even with a reduction in frequency of exercise to as little as one session per week. However, the PF group only showed some increase in LPP after 12 weeks of treatment that did not quite reach statistical significance. Although they continued to perform pelvic floor muscle training after 12 weeks, the effect was not further enhanced at 24 weeks. These findings thus raise concerns about the efficacy of pelvic floor muscle training.

At this point, the need for abdominal strengthening arises to help or to support the pelvic floor in proper and effective functioning so that the incontinence can be reduced or controlled in more better way than with kegels alone. Thus this study strongly suggest to combine abdominal strengthening with pallof press exercise which is easy, less time consuming and more effective in controlling urinary incontinence along with kegels.

Conclusion

The study concluded that combined use of kegels and pallof press is more effective in controlling the frequency of stress urinary incontinence in women and improving the quality of life than providing kegels alone for urinary incontinence. Kegels alone is effective in pelvic floor strengthening but in the long run there is a need for abdominal strength along with pelvic floor strengthening that can be helpful in preventing associated health issues. Clinicians should be aware of the complications after vaginal or cesarean delivery and advise them to perform both kegels and pallof press daily.

Future recommendations:

Further research can be done by increasing the number of sample size and age of women with urinary incontinence, include both the genders and study can be done so that the treatment can be beneficial to both categories. Study can be done with Pallof press in different positions.

Conflict of Interest: Nil

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Ethical Clearance: was taken from the Oxford College Of Physiotherapy committee.

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