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Research Article

Kegel Exercise for Stress Urinary Incontinence

Effectiveness of Kegel Exercise Combined With Utkatasana on Symptoms Associated With Stress Urinary Incontinence On Middle Aged Women

Murugaraj.T[1*], Ashila[2], Sabarish Hariharan [2], Mossadeq.A[3], and Shanmugananth.E[4]

[1]*Assistant Professor, Department Of Physiotherapy,Mahatma Gandhi Medical College And Research Institute, Sri Balaji Vidyapeeth, Puducherry, India,*

[2]*Undergraduate, Department Of Physiotherapy,Mahatma Gandhi Medical College And Research Institute, Sri Balaji Vidyapeeth, Puducherry, India,*

[3]*Professor & Head, Department Of Urology, Mahatma Gandhi Medical College And Research Institute, Sri Balaji Vidyapeeth, Puducherry, India.*

[4]*Professor & Head, Department Of Physiotherapy, Mahatma Gandhi Medical College And Research Institute Sri Balaji Vidyapeeth, Puducherry, India,*

Abstract; Millions of women are affected by Stress Urinary Incontinence (SUI). Here stress urinary incontinence refers to physical pressure rather than mental stress. SUI is one of the most common types of urinary incontinence. Kegel exercise and Utkatasana treats SUI symptoms by reinforcing weakened pelvic floor muscle and improving elasticity. But there was no evidence found that Kegel exercise combined with Utkatasana on symptoms associated with stress incontinence. so, the purpose of the study is to find out the effects of Kegel exercise and Kegel exercise combined with Utkatasana for symptoms associated with Stress Urinary Incontinence. This is a quasi-experimental study, 20 samples diagnosed with stress urinary incontinence referred from the department of urology of a tertiary care institution, aged between 25-50 years, who were willing were included in this study. Subjects having gynecological problems, neurological disorders, diabetes mellitus were excluded from this study. The subjects were evaluated and accessed before the beginning of the exercise session using unipolar scale questionnaire. Samples were divided into two groups A and B, Group A subjects received Kegel exercise alone and Group B subjects received Kegel exercise along with Utkatasana for a period of 3 months. The Pre and Post values were documented by using a unipolar scale questionnaire. Data are interpreted with the help of an Incontinence quality of life questionnaire (schurch). The data was analyzed under 3 domains namely Avoidance and Limiting Behaviour(ALB), Psycho-Social Impacts(PSI), and Social Embarrassment (SE). The data obtained from both Group A & Group B were documented and analyzed. Based on the statistical analysis it is found that the subjects in Group B showed marked improvement in Avoidance and Limiting Behaviour (ALB), Psycho-Social Impacts (PSI), and Social Embarrassment(SE) than those from the subjects of Group A Statistics were estimated for all 22 items and for the 3 domains of the I-QOL.: According to the results Kegel exercise combined with Utkatasana was found to be an effective treatment than the Kegel treatment alone for symptoms associated with SUI.

Keywords: Urinary Incontinence, Stress, Pelvic Floor Muscle Training, Asanas,, Kegel Exercise . Strengthen

***Corresponding Author**

Murugaraj.T , Assistant Professor, Department Of Physiotherapy,Mahatma Gandhi Medical College

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1. INTRODUCTION

As the female population ages, there is a significant increase in the number of patients presenting to their primary care physicians with urologic problems. Urologic problems are the third most common complaint among women. Urinary incontinence is one of the most common urologic problems in women. Urinary incontinence is defined by the International Continence Society (ICS) standardisation committee as "a condition in which involuntary loss of urine is a social or hygienic problem and is objectively demonstrable." Stress urinary incontinence affects millions of women (SUI). Stress urinary incontinence is the involuntary loss of urine with sneezing, coughing, and effort. It is a bothersome symptom that is common in middle-aged women. . Urinary incontinence occurs when a person is unable to keep urine from leaking out. (Fig1) It can occur as a result of stress factors such as coughing, during and after pregnancy, and is more common in conditions such as obesity[1,2]. The International Continence Society defines stress urinary incontinence as "the complaint of involuntary leakage of urine on effort, exertion, sneezing, or coughing" (ICS). Stress in this context refers to physical pressure rather than mental stress. Although it is not a life-threatening condition, SUI has a negative impact on the quality of women's lives in a variety of ways, including limiting women's social and personal relationships as well as physical activity. Although surgical treatment is thought to be more effective for SUI, conservative treatment is now recommended as first-line treatment. Non-surgical treatment options include improving one's lifestyle, bladder training, pelvic floor muscle training (PFMT), biofeedback, and electrical stimulation of the pelvic muscle. Kegel exercise or pelvic floor muscle training (PFMT) is the most popular method of reinforcing pelvic floor muscle and is a non-invasive treatment that does not involve the placement of any vaginal weights/cones[3,4]. Arnold Kegel, an American gynecologist, described them for the first time in 1948. They are the most cost-effective treatment and differ from other therapies in that patients can do them themselves at anytime, anywhere, while doing other work, and without having to visit the hospital on a regular basis. Patients must simply be taught how to contract their pelvic floor muscles. Yoga[5] has been proposed to be beneficial in the treatment of a wide range of medical conditions, including musculoskeletal conditions, cardiovascular conditions, and urological conditions. Yoga appears to be a relatively risk-free activity. Several studies indicate that yoga breathing, relaxation, and muscle control techniques may help to strengthen the pelvic floor. Specific yoga poses thought to be beneficial and tested include Utkatasana (chair pose), Trikonasana (triangle pose), and Malasana (squat pose). There is strong evidence to support the use of pelvic floor muscle training as a first line of defence in the treatment of urinary incontinence, particularly SU. Another method for strengthening the pelvic floor muscle is Utkatasana. Utkatasana - utkat means powerful or intense. Asana is Sanskrit for "posture." seated in a chair may sound very easy and comfortable. But sitting in an imaginary chair might be a little challenging! And this is exactly what we do . The literal meaning of Utkatasana is intense posture or powerful posture. therefore, in this study aimed is to find out theEffectiveness of Kegel exercise combined with Utkatasana on symptoms associated with Stress Urinary Incontinence on middle aged women.

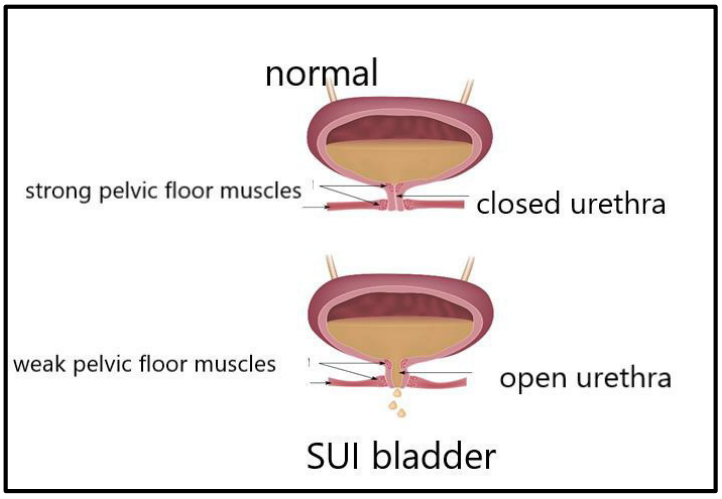

Fig 1 : Normal Bladder and Stress Urinary Incontinence Bladder

2. METHODOLOGY

The current research was a quasi-experimental study in order to explore the effectiveness of Kegel exercises combined with Utkatasana on symptoms associated with stress urinary incontinence on middle-aged women.: The population of the study consisted of women who had stress urinary incontinence complaints and were consulted and diagnosed by the urologists with stress incontinence in the Department of Urology, the study was conducted for a period of three months. In this study, 20 subjects were taken from the Department of Urology. The study was approved by the research committee and informed consent from the patients were obtained. The study was not randomized due to a small sample size and ethical concerns.

2.1 Selection criteria

The inclusion criteria were subjects with stress urinary incontinence who were aged between 25 to 50, postpartum women and who can co-operate for the study were included in this study. Exclusion criteria were congenital urological

disorders, previous central nervous system damage, bladder cancer, and urinary tract infection, conditions that may have caused neurogenic bladder diseases, and other major neurological diseases and pregnant women. The study was planned to include 10 women for each group and total of 20 women.

2.2 Grouping

The subjects were recruited into two groups i.e., group A & group B. The randomization was done by a computer generated random number method. The subjects were evaluated and assessed before the beginning of experimental session by the use of incontinence quality of life questionnaire (Schurch). Incontinence quality of life questionnaire consist of three domansi.e., Avoidance and Limiting Behaviour(ALB), Psycho-Social Impacts (PSI) and Social Embarrassment(SE)[6]. Avoidance and limiting behaviour domain consist of 8 items (table 1). Psycho-social impacts domain consists of 9 items (table 1).Social embarrassment domain consists of 5 items (table 1).

Table 1: Incontinence - Quality of Life Questionnaire (Schurch)

ALB DOMAIN	
1.	I worry about not being able to get to the toilet on time
2.	I worry about coughing/sneezing because of my incontinence
3.	I have to be careful standing up from sitting
4.	I worry about where toilets are in new places
5.	It's important for me to make frequent trips to the toilet
6.	It's important to plan every detail in advance because of my incontinence
7.	I have difficulty getting a good night's sleep because of my incontinence
8.	I have to watch how much I drink because of my incontinence
PSI DOMAIN	
1.	I feel depressed because of my incontinence
2.	I don't feel free to leave home for long periods because of my incontinence
3.	I feel frustrated because my incontinence prevents me doing what I want
4.	My incontinence is always on my mind
5.	My incontinence makes me feel unhealthy
6.	My incontinence makes me feel helpless
7.	I get less enjoyment out of life because of my incontinence
8.	My incontinence limits my choice of clothing
9.	I worry about having sex because my incontinence
SE DOMAIN	
1.	I worry about others smelling urine on me
2.	I worry about my incontinence getting worse as I get older
3.	I worry about being embarrassed or humiliated by my incontinence
4.	I worry about wetting myself
5.	I feel I have no control over my bladder

Abbreviations: ALB, Avoidance and limiting behaviour; PSI, Psychosocial Impacts; SE, Social Embarrassment

The totally incontinence quality of life questionnaire consists of 22 items.It was measured by Uni-Polar Scale proposed by Jon Krosnick, professor of communication at Stanford in 2008.Unipolar scale has following ratings from 0 – 4 i.e., not at all, slightly, moderately, very moderately & extremely. According to this scale, data was analyzed and documented.

2.3 Study protocol

Group A subject received Kegel exercises alone. Subjects were taught that Kegel exercise or pelvic floor muscle training (PFMT) by the therapist. Subjects were recommended to perform Kegel exercise 6 session in a week. After a period 3 months the group a subject was reassessed by I-QOL questionnaire, and the data was analyzed and documented. Group B subjects were recommended to perform Kegel exercise along with Utkatasana for period of three months. Kegel exercise or pelvic floor muscle training (PFMT) are recommended as well as Group A subject. Utkatasana recommended to perform 6 sessions in a week. Subjects were taught to hold the pose for about 10-12 counts.After a duration of 3 months, the group b subjects were reassessed by I-QOL questionnaire, and data was analysed and document.(fig 2, 3, 4 ,)

3. STATISTICAL ANALYSIS

The study was a quasi-experimental study of non-equivalence type followed by assessment of confounding variables. The sample size was calculated by a online software to achieve a confidence interval of 95 with an error of 5%. The sample size was derived from a possible 1 % involvement of the disease in the population visiting the hospital. The size was 16 according to software. We recruited twenty to avoid dropouts. The student T tests were used for mean and SD and a p value of less than 0.05 was taken as significant

The flow chart is below

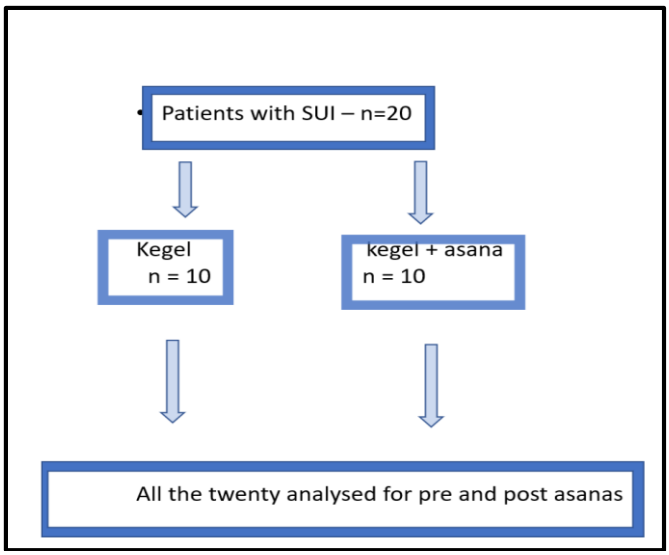

Fig 2 : Performing kegel exercise

Fig 3 : Pelvic Floor Muscle training for a subject

Fig 4 : Performing Utkatasana for stress urinary incontinence

4. RESULT

All the twenty patients completed the study. There were no drop outs. There were no complaints or sickness which admission. The 22 questionnaires were completed by the subjects at the end of the experimental session. The majority of the subject felt that their Quality of life & activity of daily living was good, in many cases the impact of their stress urinary incontinence was considerable based on the data obtained by the incontinence-quality of life questionnaires(schurch) as questionnaire method. The data was analysed under 3 domains namely Avoidance and Limiting Behaviour(ALB), Psycho-Social Impacts(PSI) and Social Embarrassment(SE). The data obtained from both Group A & Group B were documented and analysed. Based on the statical analysis it is found that the subjects in Group B showed marked improvement in the Avoidance and Limiting Behaviour (ALB), Psycho-Social Impacts (PSI) and Social Embarrassment(SE) then those from the subjects of Group A Statistics were estimated for all 22 items and for the 3 domains of the I-QOL. The values for Avoidance and Limiting Behaviour (ALB) 1.63, Psycho-Social Impacts (PSI) 1.67, & for Social Embarrassment (SE) 1.85. (p value=0.01) The confounding variables like age were similar and insignificant in the study. (p = 0.1)

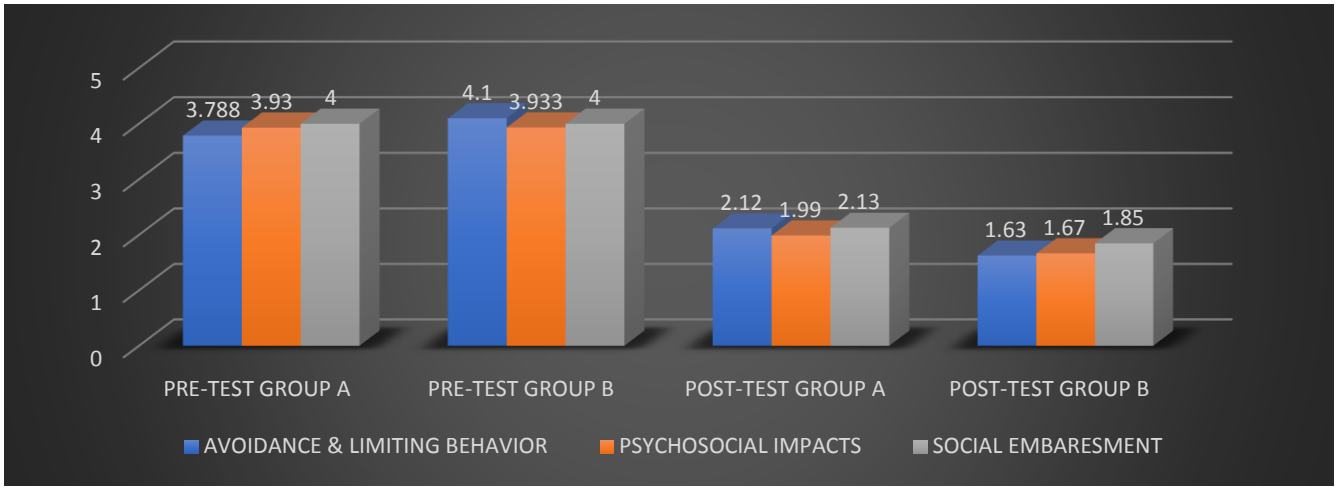

Fig 4 showing the difference between pre and post treatment values

3. DISCUSSION

Incontinence has the capacity to affect all aspects of women's health, both physical and psychological women living with stress urinary incontinence have been shown to have a significantly lower quality of life compared with those who are continent. It is very important to consider and assess the impact on incontinence in daily living. The condition has been shown to affect areas such as travel, sleep, work, relationship, sports and hobbies.

3.1 SLEEP

The quality and amount of sleep is most negatively affected in those suffering from an overactive bladder. Women may be woken up several times a night with the urgent need to urinate and they may not always make it to the bathroom in time, either wetting the bed (enuresis) or being incontinent on the way to the bathroom. Women suffering from stress incontinence may feel uncomfortable if they leak urine while in bed; for example when turning over, changing position or coughing. Furthermore, wearing protective pads in bed can be uncomfortable and irritating, which can have a negative impact on the quality of sleep. Léger et al.[7] explored the impact of sleep deprivation on daytime functioning and quality of life. They showed that people with sleep disturbance reported a higher incidence of reduced concentration on tasks, reduced effectiveness at work, and a reduction in normal activity. They also demonstrated a significantly lower quality of life[8]. We must not underestimate the impact of incontinence on sleep quality and quantity, plus its potential to influence negatively other important aspects of women's daily lives.

3.2 TRAVEL

Travelling or going on holiday can be a stressful time for anyone. For women suffering from urinary incontinence, what should be an enjoyable trip can often become a daunting and traumatic experience. These women often feel reluctant to visit new places and worry that there will be no toilets nearby or that there will be no bathroom facilities at all.[9] Queuing at public toilets is a concern and travel on transport without toilet facilities can seem like a nightmare. This concern is more common in women suffering from an overactive bladder, as the worry of urgency without access to a toilet worsens the condition and a vicious cycle develops. The end result of all of these concerns is that the woman is likely to stay at home and not travel. There are also practical issues in relation to travel. These include the need to pack protective materials such as sanitary pads, in case of urine leakage, thinking of a way to dispose of used pads and the need to change into dry clothing. Even though, we have not separately studied the effects of sleep and travel, we have done the social impact scores which encompasses all.

3.3 RELATIONSHIP

The relationships of couples can be significantly affected by urinary incontinence. Nilsson et al. 2 showed that 38% of women and 32% of men reported that the female partner's incontinence impacted negatively on their relationship. Furthermore, 20% of women and 17% of men reported reduced intimacy, affection, and physical proximity[10]. They showed that when specifically asked several women said that they felt that their incontinence had been a factor in their marriage breakdown and subsequent divorce; others feared that without a cure for their incontinence their marriage might be in jeopardy. This shows that suffering from incontinence may have an even higher cost in psychosocial terms than most of us can imagine. These all are the severe impacts of incontinence. so we recommended that kegel exercise combined with utkatsana found to be an effective treatment.Our study analysed the whole scores rather than individual patterns. After a thorough literature search, we could not find any such combined interventions for SUI. This is the first such study to tackle SUI with non-pharmacological methods like combined exercises and asanas. Even though Mills[11] has raised questions on the usefulness of yoga in the management of urinary incontinence we, have positive results. The authors have done extensive research in the usefulness of Yoga[12- 14] on various health issues and found them to be extremely effective. But this is about a distinct clinical problem which is refractory to various allopathic regimens. Exercise interventions aimed at the pelvic floor muscles may improve pelvic floor muscle power, urinary incontinence symptomatology, and sometimes even quality of life metrics[15]. Exercise training that were supervised and even included some type of biofeedback device improved more quickly and significantly than unsupervised interventions. But we have done targeted named exercise to prove its usefulness.

4. CONCLUSION

The study showed the improvement of SUI symptoms in middle-aged women performed with kegel exercises along with Utkatasana is much more effective than in the subjects who did kegel exercises alone. Such combined approaches may have an impact on the quality of life and sleep of patients suffering from SUI. Further studies are needed on each aspect of quality of life with such combined treatment approaches.

5. AUTHOR CONTRIBUTION STATEMENT

SH and MA and ashila – data collection
SE – concept and design

6. CONFLICT OF INTEREST

Conflict of interest declared none.

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