



Psychosocial Impact of 6 Weeks of Kegel Exercise on Female MS (Multiple Sclerosis) with Urinary Incontinence (Case Study: Khuzestan Province)

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ABSTRACT: Aim and Background: incontinence affects various aspects of daily life of patients with Multiple sclerosis and has adverse effects on life quality of these patients. The present study aimed to evaluate the impact of 6 weeks of Kegel exercises on incontinence of female patients with Multiple sclerosis in Khuzestan province. The present study is applied, semi-empirical and control and experiment group. The sample consists of 19 patients with Multiple sclerosis with incontinence, member of MS association in Khuzestan province. The samples met the criteria and were selected by convenient sampling method and exercise group patients performed Kegel exercises for 6 weeks. Before and after six weeks of exercises, Incontinence evaluation was evaluated by IQOL (Incontinence quality of life) questionnaire. The collected data were analyzed by SPSS software, version 16 and descriptive statistical tests, Shapiro wilk test and covariance test. The evaluation of study findings showed the improvement of scores of questionnaire and positive effect of Kegel exercises on Incontinence, behavioral limitation, mental-social effects and social disorder of these patients. Based on the findings, Kegel exercise training was effective on reduction of Incontinence in patients with MS. Thus, it was proposed as non-medicine method, non-invasive and less costly in control of Incontinence of these patients.

Keywords: Kegel exercises, Incontinence, Multiple sclerosis

INTRODUCTION

Multiple sclerosis, abbreviated as "MS", is a disease of the central nervous system (brain and spinal cord). Multiple Sclerosis is one of the most common diseases of myelin destruction. Most MS experts believe that these factors include immune system disorders, inheritance, and some environmental factors such as preexisting viral infections and vitamin D deficiency. However, the cause of this disease is still unknown (Abramovitz, 2003). Given the increasing number of patients with MS, increased costs of treatment, devastating effects of the disease on quality of life, and the role of exercise in controlling the disease symptoms and improvement of health and life quality of patients, carrying out research on this subject is of great importance. MS is usually treated with drug. However, studies have shown that drug treatment has moderate impact on the rate of relapse and low impact on the rehabilitation of patients (Abramovitz, 2003). On the other hand, some studies have reported that the drugs used for treatment of MS cause serious complications in patients (Aminof, 2006). MS patients have great difficulty in controlling the urinary bladder and urine during their illness. The urinary bladder dysfunction is

usually controllable with medication or making changes to the daily activity or lifestyle (Nabavi and Vairanpour 2005).

Studies have shown that urinary incontinence can leave a significant impact on the characteristics and physical, social, and emotional activities of women, because it is considered an embarrassing situation which causes the person to withdraw from social activities and reduce her quality of life (Fantl *et al.*,) Urinary incontinence is one of the serious problems in MS patients, especially in women that its treatment imposes huge costs on society (Nygaard and Lemke 1996, Brown *et al.*, 1999). According to previous studies, exercises of pelvic floor muscles can play an essential role in the prevention and treatment of urinary incontinence (Rogers, 2008). One of these exercise is Kegel. Kegel exercises were developed by Arnold Kegel in 1948 for improvement and correction of the loosening or atrophy of pelvic floor muscles. Kegel involves a series of exercises which aim to strengthen and establish a balance between the back and abdominal muscles and lower extremities muscles and also strengthen the pelvic floor muscles in order to keep the natural anatomic situation of pelvis (Wong *et al.*, 2002).

These exercises are based on the assumption that the strong contractions of the pelvic floor muscles clamp the urinary tract, increase its pressure, and prevent the exit of urine in the event of a sudden increase in intra-abdominal pressure (Kashanian *et al.*, 2010). Any program that can control the problem improves the self-esteem and life quality of MS patients (Fowler *et al.*, 2009, Lucio *et al.*, 2010).

In this regard, some studies also suggest that training on pelvic floor muscle exercises can be effective in reducing the urinary incontinence and improving the quality of life in MS patients.

Thus, pelvic floor muscle exercises can be recommended as a non-drug, non-invasive, and cost-effective way for controlling the urinary incontinence in these patients (Rafii *et al.*, 2014). In addition, all three methods of Kegel exercises, Interferential Current Therapy (IFC), and exercise with Interferential Current Therapy (IFC) are useful for patients with urinary incontinence. Although Kegel exercise therapy and IFC have the same effects, a combination of exercise with IFC has been more effective in reducing the number of leakage (Kheiri *et al.*, 2011). These exercises, proposed as the first line of conservative treatment, is much less expensive and has no side effect for the patient, compared to medical and surgical treatments (Torkzadeh, 2012). Training of pelvic floor muscle stability exercise is effective in reducing the urinary incontinence in MS patients, so it is recommended as a non-drug, non-invasive, and cost-effective way for controlling the urinary incontinence in these patients (Boveiri *et al.*, 2015). Given the effect of pelvic floor muscles exercise on increasing the sexual satisfaction of women, this easy and low-cost method can be included in basic trainings after childbirth aiming at improving the level of marriage life and more durability of families (Modarres *et al.*, 2012). Pelvic floor muscle exercises improve the urinary incontinence, but women who did the exercises related to the vagina showed a faster process of healing (Porta-Roda *et al.*, 2015). Improvement of urinary incontinence has positive impacts on the quality of life in women with MS who performed the exercises of pelvic floor muscles (Ade´liaCorreia *et al.*, 2011). Considering the effect and role of pelvic floor muscles exercise in reduction of urinary incontinence and improvement of quality of life in MS patients, the present research aims to study the effect of 6 weeks of Kegel exercises on psychosocial status of female MS patients with urinary incontinence in Ahwaz, Khuzestan Province.

METHODOLOGY

The present research was an applied, quasi-experimental study which was carried out in experimental and control groups. The required data and

information were collected by measuring the dependent variable through pretest and posttest.

Inclusion and exclusion criteria: The statistical population included 1151 women with MS referred to the MS Association Office in Khuzestan Province in Faculty of Rehabilitation of Jondi Shapour University of Medical Sciences in a period from September to November 2014, 25 of whom with a EDSS of 1-5.5 suffering from urinary incontinence were selected as the sample through available sampling method. The subjects were randomly divided into two groups of experimental and control.

Both groups filled out a valid questionnaire on diagnosis of urinary incontinence in order to ensure the existence of this complication. Then, the standardized Incontinence Quality of Life (IQOL) Questionnaire in Iran was filled out by the subjects. In the next step, subjects in the control group took a rest and those in experimental group participated in 6 weeks of Kegel exercises related to pelvic floor muscles. With the fall in the number of subjects, finally 10 patients in the control and 9 subjects in the experimental group finished the study. After 6 weeks of Kegel exercises, subjects in both groups were summoned for filling out the standardized Incontinence Quality of Life (IQOL) Questionnaire in Iran.

Exercise protocol: The subjects in the experimental group participated in 18 sessions of Kegel exercises for 6 weeks (three days a week on odd days). Every week, the subjects were trained on Kegel exercises with a new functional status. According to the principle of overload, the severity and frequency of exercises were increased every week in order to improve the effectiveness of exercises. In addition, all subjects were recommended to contract their pelvic floor muscles when getting up from a bed or chair or sitting conditions on the ground. In order to prevent the impact of circadian rhythms and also fatigue, exercise sessions were performed in the morning (from 9 to 10 A.M.) when the subjects were less tired and their duration was 40-60 minutes.

Exercises were performed in the indoor hall of Faculty of Rehabilitation of Jondi Shapour University of Medical Sciences at a temperature of 25-27°C. Before entering the main exercises, subjects in the experimental group warm out their body for 10 minutes which included a little slow walking and dynamic and static stretching movements. These warm-out exercises aimed to involve suez iliac muscle, rectus femoris, hamstrings, quadriceps, buttocks, soleus, and so on. The main exercises included Kegel exercises which begins with contraction of pelvic floor muscle and ends with its gradual relaxation. These exercises are performed in three exercise cycles of simple, moderate, and advanced for 6 weeks in four positions of sitting on a chair, lying down, prostrate, and standing with the correct implementation of pelvic floor muscle contraction.

Statistical methods: The required data and information were extracted from record sheets and analyzed in SPSS software. Excel software was used for drawing the graphs. Level of significance for all statistical methods was considered to be $p < 0.05$ (two-way).

FINDINGS

In the research, the effect of 6 weeks of Kegel exercises on psychosocial status of female MS patients with urinary incontinence was studied. The results have been shown in Table 1. T-test findings suggest that significance level of independent t-test is less than 0.05 (Sig.<0.05). This means that 6 weeks of Kegel exercises have a significant impact on psychosocial status of female MS patients with urinary incontinence. The mean value of the experimental group was higher than that of the control. In other words, considering the fact that increased mean is equal to reduced side effects of urinary incontinence.

It can be stated that 6 weeks of Kegel exercises significantly reduced the psychosocial side effects in female MS patients with urinary incontinence. In addition, the effect of 6 weeks of Kegel exercises on social turmoil of female MS patients with urinary incontinence was studied. Based on the results shown in Table 4, significance level of independent t-test is less than 0.05 (Sig.<0.05). This means that 6 weeks of Kegel exercises have a significant impact on social turmoil of female MS patients with urinary incontinence. The mean value of the experimental group was higher than that of the control. In other words, considering the fact that increased mean is equal to reduced side effects of urinary incontinence, it can be stated that 6 weeks of Kegel exercises significantly reduced the social turmoil in female MS patients with urinary incontinence.

Table 1: Effect of gige exercise on Psychosocial effects of female patients.

| Group | Mean \pm SD | Mean diference | df | t | Sig (2-tailed) |
|--------------------|-----------------|----------------|--------|-------|----------------|
| Control group | 22.4 \pm 7.89 | -19/60 | 11/117 | -7/42 | 0/000 |
| Experimental group | 42 \pm 2.60 | | | | |

Table 2: Effect of gige exercise on Social turmoil female patients.

| Group | Mean \pm SD | Mean difference | df | t | Sig (2-tailed) |
|--------------------|---------------|-----------------|----|-------|----------------|
| Control group | 10.7 – 3.97 | -12/08 | 17 | -7/60 | 0/000 |
| Experimental group | 22.78 – 2.77 | | | | |

DISCUSSION

The present research aimed to study the effect of 6 weeks of Kegel exercises on life quality factors (behavioral restriction, psychosocial impacts, and social turmoil) in female MS patients with urinary incontinence in Khuzestan Province. According to the study findings, Kegel exercises made significant changes to the life quality factors of subjects. Pakgohar et al., in a study entitled "Studying the quality of life in postmenopausal women with urinary incontinence", reported that the mean score of life quality in these women was 46.18 ± 19.91 . They also stated that the highest and the lowest scores of life quality were related psychosocial aspect (55 ± 22.31) and social behaviors (37.47 ± 20.99), respectively.

Sar and Khorshid conducted a study in order to evaluate the impact of pelvic floor exercises on urinary incontinence and quality of life. In this clinical trial, 41 women were studied.

The subjects in the experimental group performed the exercises three times in different modes for 8 weeks. The subjects in the control received no intervention. Finally, women's quality of life was assessed using the IQOL questionnaire. The results showed that the two groups were different in terms of life quality score. The authors came to the conclusion that pelvic floor exercises can improve women's quality of life and reduce episodes of urinary incontinence. Borleaux France et al. conducted a study on 36 women with stress urinary incontinence in order to evaluate the effects of pelvic floor exercises on urinary incontinence and quality of life. The subjects were divided into two groups. The exercises were performed one a week and four times a week by the first and the second group for 6 months. Finally, the results revealed no significant difference between two groups in terms of the frequency of urinary incontinence and quality of life (Borello-France, 2008).

The effect of chronic debilitating diseases such as MS and their associated problems on quality of life in all aspects is no secret. Several studies have shown that MS patients have a lower quality of life than the general population (Nedjat *et al.*, 2006). Quality of life is a multidimensional construct including physical, psychological, and social health which has been increasingly recognized as an important result of studies in the field of health policymaking and the effectiveness of therapeutic interventions (Vickrey *et al.*, 1995). Behavioral restriction refers to behaviors that are limited or impaired due to the problem of urinary incontinence. These behaviors involve fear of sneezing and coughing, fear of finding toilets in unfamiliar places, controlling drinks intake, sleep disorders, etc. Psychological and social effects caused by urinary incontinence represent the problems such as frustration, depression, and helplessness. Social turmoil considers the feelings such as shame and humiliation due to complications of urinary incontinence.

It should be noted that doing exercises in a short term, through neuromuscular adaptation mechanisms, improving the coordination of pelvic floor muscle fibers, and activation of motor unit in these muscles, increases the strength and endurance of the muscles of the perineum. This improvement leaves a significant impact on symptoms of urinary incontinence and promotion of life quality in patients suffering from this complication.

CONCLUSION

According to the results of the present study and other studies presented in this paper, Kegel exercises can improve the status of urinary incontinence in MS patients. Improvement in the status of urinary incontinence in these patients can promote the factors of quality of life which include behavioral restriction, psychosocial effects, and social turmoil. Therefore, Kegel exercises, in addition to drug therapies, improve the general health of MS patients and reduce their common stresses. What is certain is that any training program should be based on patient's needs and also minimize the possible dangers. Kegel exercises, due to their static and dynamic states, have these features. Hence, MS patients can be confidently provided with the results of the present study. This will lead to increased participation of patients in social activities, improved psychological status of patients, and reduced prevalence of senility and depression among them.

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