

“A study to assess the effectiveness of Kegel Exercise on the management of urinary incontinence among women in selected rural area of Udaipur”

Mrs. Payal Chaturvedi¹, Associate Prof. Mrs. Yashashwini Deepak²

¹(Obstetrics & Gynecology Department, Geetanjali college of Nursing/Geetanjali University, India)

²(Associate prof & HOD, Obstetrics & Gynecology Department, Geetanjali college of nursing/Geetanjali university, India)

Abstract

Urinary Incontinence is defined as the **involuntary leakage of urine**. This condition is more common in women. Urinary incontinence can significantly impair quality of life, restricting social activity in women and usually accompanied by medical complications. Doctor Arnold Kegel, described a pelvic floor exercise, more commonly called a kegel exercise, consist of repeatedly contracting and relaxing the muscles that form part of the pelvic floor, now sometimes colloquially referred to as the Kegel muscles.

Researcher conducted a study to assess the effectiveness of Kegel Exercise on the management of urinary incontinence among women in selected rural area of Udaipur.

Material and method: In the study 60 samples were selected through purposive sampling technique. Researcher used Quasi experimental non randomized control group design to assess the level of urinary incontinence among rural women. Variables under study were Kegel exercise as independent variable and urinary incontinence in selected rural women as dependent variable. Researcher used conceptual framework based on general system model. Data were collected through Michigan scale and data were analyzed through suitable statistical method. **Result:** Result revealed that calculated t value was 12.73 is found highly significant at the level of 0.05. Hence, the research hypothesis H_1 was proved and accepted. In experimental group the socio demographic variable such as Age in year χ^2 -18.28 was found significant at 0.001, Educational status χ^2 - 22.87 was found significant at 0.001, Body built χ^2 - 19.08 was found significant at 0.01, Parity χ^2 - 20.74 was found significant at 0.01, Type of delivery χ^2 - 19.06 was found significant at 0.001, History of any surgery χ^2 - 22.49 was found significant at 0.01, Menstrual History χ^2 -16.13 was found significant at 0.001, Source of information regarding Kegel exercise χ^2 -27.94 was found to be significant at 0.001 level, where Occupation χ^2 - 4.60 was found to be non-significant at 0.05 level. Hence research hypothesis H_2 is proved and accepted.

Conclusion: This study concluded that there was improvement in level of urinary incontinence among selected women which indicates that the kegel exercise was effective. The socio-demographic variables of urinary incontinence women were significantly associated with the pre- test level of urinary incontinence score. The kegel exercise will help the women to manage their incontinence.

Keyword: Effectiveness, Kegel exercise, urinary incontinence.

Date of Submission: 20-11-2021

Date of Acceptance: 05-12-2021

I. Introduction

Women are the key to sustainable development and quality of life in the family. There are health issues which women experience because of their reproductive Anatomy. Among the health problems of women which affect their quality of life, ‘Pelvic Floor dysfunction’ is considered as a prime problem. Pelvic Floor Dysfunction (PFD) means the presence of any one of the symptoms such as ‘Urinary Incontinence (UI)’, ‘Faecal Incontinence (FI)’ etc.¹ Urinary Incontinence is defined as the involuntary leakage of urine.²

Doctor Arnold Kegel, described a pelvic floor exercise, more commonly called a Kegel exercise, consist of repeatedly contracting and relaxing the muscles that form part of the pelvic floor, now sometimes colloquially referred to as the Kegel muscles. Doctor Arnold kegel also invented perineometer which can be used to measure the improvement in strength and endurance of pelvic floor muscles. It gives an objective evaluation of the result of therapy and gives biofeedback to patients. Kegel exercise is said to be effective for the management of UI.³ Kegel excise is to reduce the pelvic floor problem. Increase kegel excise good for treating vaginal prolapse and uterine prolapse. kegel excise are useful in regaining pelvic floor muscle strength. Urinary incontinence is one such socially and emotionally challenging problem faced by women with major economical and psychological

effect on society. Involuntary leakage of urine is a common and distressing medical condition severely affecting quality of life.⁴

II. Material And Methods

This experimental study was carried out on rural women at kavita and badgao village of Udaipur, Rajasthan from 4th March, 2021 to 1st April, 2021. A total 60 rural area women of age group 45 to 50 years and above 50 year were selected for this study.

Study Design: Quasi experimental non randomized control group design was adopted in this study with an experimental and control group.

Study Location: This study was conducted in the Kavita and badgao village, in Udaipur, Rajasthan.

Study Duration: 4th March, 2021 to 1st April, 2021.

Sample size: 60 rural women of age above 45 years.

Population: In the present study the population consist that woman who has urinary incontinence from selected rural area of Udaipur.

Sampling Technique: Non probability Purposive sampling technique.

Inclusive Criteria-

- Woman who are willing to participate in the study.
- Woman who can understand Hindi.
- Women are able to do follow up.

Exclusive Criteria-

- Woman who had already undergone pelvic floor exercise training program.
- Woman who are not available at the time of data collection.

Procedure Methodology: The researcher adopted a purposive sampling technique was using to collect the sample. 30 experimental and 30 control group participants were selected for the study. Researcher obtained informed written consent from the study participants. Direct questionnaire was conducted with each participant and confidentiality of study subject was assured. Researcher administered research tool to obtained pre-test score. The tool consist 10 items which was used to know their level of problem. The language was found to be clear and items were easy comprehended by participants. Based on pre-test score the Kegel exercise was administered by the researcher to the participants. Kegel exercise was conducted for 10 to 15 seconds thrice follow daily. The post-test was conducted after four week of pre-test.

Statistical analysis: The obtained data were analyzed in terms of objectives of the study using descriptive and inferential statistics. The plan for data analysis was as follows Organization of data in master sheet. Obtained data were analyzed in terms of frequencies and percentages. Description Statistics: Description of demographic characteristics mean, median, SD and used to describe the area wise pre-test, post-test in experimental and control group of the participant regarding kegel excise Inferential Statistics: 't test is used to find out the effectiveness of kegel exercise on the management of urinary incontinence among women in selected rural area of Udaipur. Chi-square is used to find the Association between pre-test score of experimental group & control group participant with socio-demographic variables.

III. Result

Section I: Description of Socio-Demographic Variables

Section II: Assessment of Pre-test and Post-test level of urinary incontinence among selected women.

Section III: Effectiveness of Kegel exercise on the management of urinary incontinence.

Section I: Description of Socio- Demographic Variables: According to the distribution of the participants by Age in year in experimental group 10 (33.33 %) participants belonged to age group of 47-48, 8 (26.67 %) belonged to age group of 45-46, 7 (23.33 %) belonged to age group of 49-50 and 5 (16.67 %) belonged to age of above 50 year, where in control group 10 (33.33 %) participants belonged to age group of 47-48, 10 (33.33 %) belonged to age group of 49-50, 5 (16.67 %) belonged to age group of 45-46 and 5 (16.67 %) belonged to age of above 50 year. Distribution of participants by **Occupation**, in the experimental group majority of the participants i.e. 22 (73.34 %) were homemaker, 5 (16.66 %) were in service, and 3 (10 %) were related to other occupations, where in control group the most of the participants 21 (70 %) were homemaker, 6 (20 %) were in service, and 3 (10 %) were related to other occupations. Distribution of participants by **Educational Status** in the experimental group the 12 (40 %) participants did not have formal education, 12 (40 %) had primary education, 3 (10 %) had secondary education and 3 (10 %) had higher secondary education, whereas in control group 13 (43.34 %) participants had primary education, 7 (23.33 %) did not have formal education, 6 (20 %) had secondary education and 4 (13.34 %) had higher secondary education. Distribution of participants by **Body built** where in experimental group most of the participants 18 (60%) had normal weight, 6 (20%) were underweight and 6 (20%) were overweight. Where in control group 13 (43.33%) participants had normal

weight, 10 (33.33%) were overweight and 4 (13.34%) were underweight and 3(10%) were obese. Distribution of participants by **Parity**, in experimental group 11(36.66 %) participants had 3rd parity, 8 (26.66 %) had 2nd parity, 7 (23.33 %) had 4 and above parity and 4 (13.33 %) had 1st parity, where in control group 12(40 %) participants had 3rd parity, 7(23.33 %) had 2nd parity, 7 (23.33 %) had 4 and above parity and 4 (13.33 %) had 1st parity. Distribution of participants by **Types of Delivery**, in experimental group the majority of the participants 20 (66.67%) undergone vaginal delivery,7 (23.33 %) undergone cesarean delivery and 3 (10%) undergone instrumental delivery, where in control group 16 (53.33%) participants undergone vaginal delivery, 12 (40%) undergone cesarean delivery and 2 (6.67%) undergone instrumental delivery. Distribution of participants by **History of any surgery** , in experimental group 12(40%) participants undergone abdominal surgery, same 12 (40 %) did not have any history, 4 (13.34 %) undergone vaginal surgery history, and 2 (6.66 %) undergone other type of history, while in control group 12(40%) participants undergone abdominal surgery, 9 (30 %) did not have any history, 6(20 %) undergone vaginal surgery history, and 3 (10 %) undergone other type of surgery history. Distribution of participants by **Menstrual History**, in experimental group i.e. 53.33% participants had irregular menstrual history, i.e. 46.67% of participants had menopausal history, where in control group i.e. 53.33% participants had menopausal history, i.e. 46.67% of participants had irregular menstrual history. Distribution of participants by **Source of Information Regarding Kegel Exercise** in experimental group the majority of the participants 27(90%) did not have information regarding kegel, where 2 (6.66 %) got information from health professionals and 1(3.37 %) got information through family member and peer group, while in control group the most of the participants 25(83.33%) did not have information regarding kegel, 3 (10 %) got information from health professionals and 2 (6.67 %) got information through family member and peer group.

Section II: Assessment of Pre-test and Post-test level of urinary incontinence among selected women.

Table-1: Frequency and percentage distribution of pre-test and post-test level of urinary incontinence among women for experimental group. N=30

EXPERIMENTAL GROUP						
Level of Incontinence	Mild Incontinence		Moderate Incontinence		Severe Incontinence	
	NO	%	NO	%	NO	%
Pre-test	00	00	08	26.66	22	73.34
Post-test	05	16.66	25	83.34	0	0

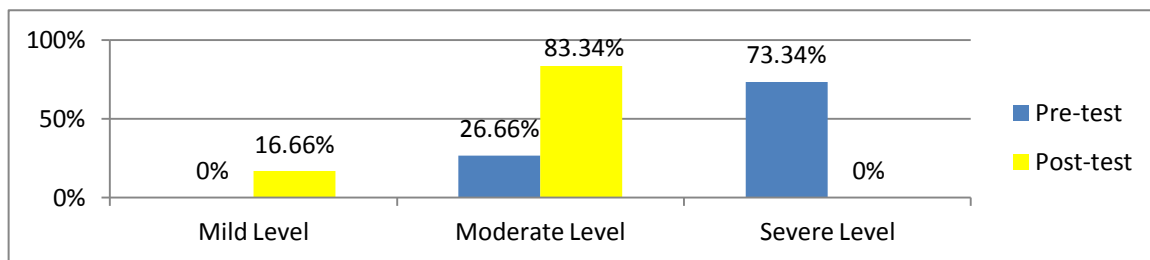


Figure 1: Percentage distribution of Pre-test and Post-test level of urinary incontinence for experimental group.

Table 1 and figure 1: It shows that, in the pre-test, majority of the participants 22 (73.34 %) had severe level of urinary incontinence , 8 (26.66 %) had moderate level of urinary incontinence before the Kegel exercise, where in the post-test, majority of the participants 25 (83.34%) had moderate level of urinary incontinence and 5 (16.66 %) participants had mild level of urinary incontinence after Kegel exercise.

Table- 2: Frequency and percentage distribution of pre-test and post-test level of urinary incontinence among women for control group.

N=30

CONTROL GROUP						
Level of Incontinence	Mild Incontinence		Moderate Incontinence		Severe Incontinence	
	NO	%	NO	%	NO	%
Pre-test	00	00	00	00	30	100
Post-test	00	00	00	00	30	100

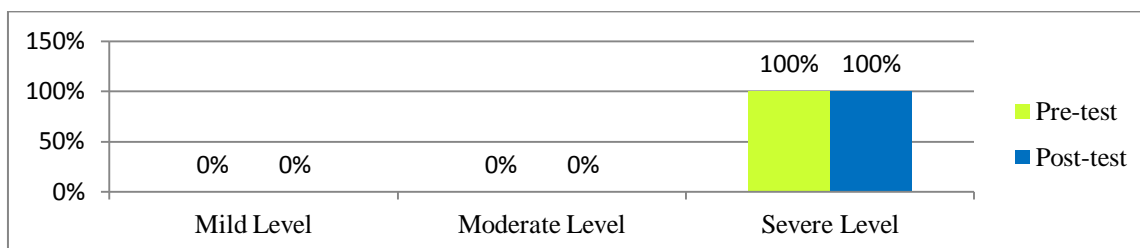


Figure 2: Percentage distribution of Pre-test and Post-test level of urinary incontinence for Control group.

Table 2 and figure 2 : It shows that, in the pre-test, all of the participants 30 (100 %) had severe level of urinary incontinence at the time of pre-test and while post-test, same, all the participants 30 (100%) also had severe level of urinary incontinence.

Section III: Effectiveness of Kegel exercise on the management of urinary incontinence.

Table-14: Effectiveness of intervention Comparison of pre-test and post-test score for experimental group.
N=30

Experimental Group	Test	Mean	SD	Mean Diff.	T-test	Df	P value
	Pre-test	28.966	3.49	11.90	12.73	29	P= 0.05 Significant
	Post-test	17.06	4.03				

The result show that in the Experimental group pre-test mean 28.96 with standard deviation 3.49 and post-test mean was 17.06 with standard deviation 4.03, t value was 12.73 which is higher than table value that is 2.05 at 0.05 levels. Hence H₁ is accepted.

Table - 15: Effectiveness of intervention Comparison of pre-test and post-test score for control group.
N=30

Control Group	Test	Mean	SD	Mean Diff.	T-test	Df	P value
	Pre-test	30.833	4.16	0.5	2.40	29	P=0.001 not significant
	Post-test	31.333	2.00				

The result show that in the Control group pre-test mean **30.83** with standard deviation **4.16** and post -test mean was **31.33** with standard deviation **2.0**, t value was **2.40** which is lower than table value that is 3.66 at 0.001 level. Hence H₁ is not accepted.

IV. Discussion

In experimental group the improvement in level of urinary incontinence from pre-test to post-test the mean was 28.96 to 17.06 , SD was 3.49 to 4.03.The mean difference was 11.90. The data further represent that the, “t” value of 12.73 was significantly higher than the table value 2.05 at 0.05 levels. This indicates that

there was difference in pre-test and post-test level of urinary incontinence of participants and the Kegel exercise was effective to improve the level of urinary incontinence among selected women. Hence H_1 is accepted.

Whereas in control group the score of the level of urinary incontinence from pre-test to post-test the mean was 30.83 to 31.33, SD was 4.16 to 2.00. The mean difference was 0.5. The data further represent that the, “t” value of 2.40 was not significantly higher than the table value 3.66 at 0.001 levels. H_1 is not accepted.

A Similar study was conducted by **Ms. S. Priya Dorathy (2012)** at Chennai, the data showed that, in experimental group the improvement in level of urinary incontinence from pre-test to post-test the mean was 11.96 to 8.03. The data further represent that the, “t” value of 5.5 was significantly higher than the table value 1.9 at df 30 which was statically significant which show that ‘t’ value for mean difference between pre and post-test mean score in experimental group was significant at $p < 0.05$ level. This indicates that stress urinary incontinence reduces in experimental group was significant at 0.05 levels. This data show that stress urinary incontinence was reduced in experimental group after practice of pelvic floor exercise, whereas in control group computed value ‘t’ value 0 is less than table value 1.9, df 24 which was statically **not significant**. There was no significant reduction in the stress urinary incontinence of women among control group.⁵

In experimental group socio demographical variable such as Age in year, $\chi^2 - 18.28$ was found significant at 0.001, Educational status $\chi^2 - 22.87$ was found significant at 0.01, Body built $\chi^2 - 19.08$ was found significant at 0.01, Parity $\chi^2 - 20.74$ was found significant at 0.01, Type of delivery $\chi^2 - 19.06$ was found significant at 0.001, History of any surgery $\chi^2 - 22.49$ was found significant at 0.001, Menstrual History $\chi^2 - 16.13$ was found significant at 0.001, Source of information regarding Kegel exercise $\chi^2 - 27.94$ was found to be significant at 0.001 level, where Occupation $\chi^2 - 4.60$ was found to be non-significant at 0.05 level. Hence research hypothesis H_2 is proved and accepted. In control group socio demographical variable such as Age in year $\chi^2 - 13.08$ was found significant at 0.01, Occupation $\chi^2 - 16.74$ was found significant at 0.05, Educational status $\chi^2 - 26.04$ was found significant at 0.001, Body built $\chi^2 - 23.48$ was found significant at 0.001, Parity $\chi^2 - 22.47$ was found significant at 0.001, Type of delivery $\chi^2 - 17.33$ was found significant at 0.01, History of any surgery $\chi^2 - 19.09$ was found significant at 0.01, Source of information regarding Kegel exercise $\chi^2 - 22.54$ was found to be significant at 0.001 level. Menstrual History $\chi^2 - 04.03$ was found to be non-significant at 0.01 levels. Hence research hypothesis H_2 is proved and accepted.

In Similar study was done by **Swati Deshmane and K Memchoubi (2018)** at Pune which shows the association between the pre-intervention levels of Urinary Incontinence with selected demographic variables using Fisher’s exact test. Chi-square test was used to compute the association between pre-test with their selected socio-demographic variables. So it is found to have association with the pelvic floor exercise among women with Urinary Incontinence.⁶

V. Conclusion

Study concluded that there was improvement in level of urinary incontinence among selected women which indicates that the kegel exercise was effective. The socio-demographic variables of urinary incontinence women were significantly associated with the pre- test level of urinary incontinence score. The kegel exercise will help the women to manage their incontinence.

Reference

- [1]. Wallace H&, Luber KM, Boero S, Choe JY. Herman & Wallace White Paper Female Pelvic Floor Dysfunction 2010 to 2050. 2010; Available from: https://hermanwallace.com/images/docs/HW_Female_Pelvic_Floor_Dysfunction_White_Paper.pdf
- [2]. Jayachandran, Chaandini, "Prevalence of Stress, Urge, and Mixed Urinary Incontinence in Women". Master's Theses and Doctoral Dissertations. 2007; 7-8. Available at: <http://commons.emich.edu/theses> (urinary-incontinence-in-women.pdf)
- [3]. Margaret Polden & J Mantle. Physiotherapy in Obstetrics & Gynaecology, 1st Edn. 1990, New Delhi. Chapter 11, Published by J.P. Brothers, Pg. 349.
- [4]. Currie CJ, McEwan P, Poole CD. (2006) The impact of the overactive bladder on the health related utility and quality of life. BJU 97: 1267- 1272.
- [5]. Dorathy S. Priya .A study to assess the effectiveness of pelvic floor exercise for stress urinary incontinence among women in selected communities, at coimbatore. 2012;31-59
- [6]. Deshmane Swati, K Memchoubi. An experimental study to assess the effectiveness of pelvic floor exercise for the management of urinary incontinence among women in selected areas of Pune city. Int J Appl Res 2018;4(6):128-133

Mrs. Payal Chaturvedi, et. al. “A study to assess the effectiveness of Kegel Exercise on the management of urinary incontinence among women in selected rural area of Udaipur.” *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 10(06), 2021, pp. 34-38.