Open Access Health Scientific Journal
https://oahsj.org/index.php/oahsj Vol. 6 No. 1 February 2025, pp. 6-11
Research article

The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at UPT Panti Sosial Tresna Werdha Glenmore

Grenda Aprilyawan*, Makrup, Enny Wulandari

STIKES RUSTIDA Banyuwangi, East Java, Indonesia
*Corresponden Author: Grenda Aprilyawan (grenda262@gmail.com)

ARTICLE INFO

Keywords:
Elderly,
Kegel Exercises,
Urinary Incontinence.

ABSTRACT

Background: The aging process is a natural process of life that occurs from the beginning of a person's life, with several phases, namely childhood, adulthood, and old age. The elderly can experience various changes including physical, psychosocial, and spiritual changes. One of the physiological changes that occurs in the elderly is a decrease in urethral muscle tension due to a decrease in the hormone estrogen which causes urinary incontinence. Urinary incontinence is the involuntary discharge of urine (unconscious or bedwetting) at an inappropriate time and place outside of desire. This study aimed to analyze the effect of Kegel exercises on urinary incontinence in the elderly**.**
Methods: The research design used was pre-experimental with a one group pre-test post-test design. The population of this study was all elderly people who experienced urinary incontinence at the UPT Panti Sosial Tresna Werdha Glenmore, this study was conducted on 34 elderly people. The sampling technique in this study used Nonprobability Sampling, namely using Saturated Sampling (total sampling). Data collection used a questionnaire sheet. The data obtained were then coded, scored, tabulated, and analyzed using the Wilcoxon test with a significant value of 0.05.
Results: The results of this study show the results of p-value (0.000) ≤ α (0.05) which means that there is an effect of Kegel exercises on urinary incontinence in the elderly at UPT Panti Sosial Tresna Wherda Glenmore.
Conclusion: Based on these results, it can be concluded that Kegel exercises can increase the strength of the pelvic floor muscles in urinary incontinence conditions. So it can be used as a non-pharmacological therapy for the elderly who experience urinary incontinence at UPT Panti Sosial Tresna Wherda Glenmore.

I. Introduction

Elderly is a process of growth and development in a phase of life where each individual will experience aging which is marked by a decrease in body function in repairing itself, so that it can cause problems of physical, psychological, mental, and social decline (Kusumawardani & Andanawarih, 2018). The elderly can experience various changes including physical, psychosocial, and spiritual changes. Physiological changes that occur in the elderly, especially in the urinary system, namely decreased vaginal muscle tension and urethral muscles due to decreased estrogen hormones which cause urinary incontinence, weakened muscles and will cause the frequency of urination to increase and be uncontrolled, so that later it can cause new problems (Daryaman, 2021).

According to data from the World Health Organization (WHO), as many as 200 million people experience urinary incontinence. In the United States, data shows that as many as 13 million adults are estimated to experience urinary incontinence, 85% of whom are women. The prevalence of urinary incontinence in Asia averages 21.6%, with 14.8% experienced by women and 6.8% experienced by men.

Received 12 October 2024; Accepted 3 December 2024; Published 1 February 2025
 DOI: https://doi.org/10.55700/oahsj.v6i1.53

In Indonesia, the prevalence of urinary incontinence has reached 5.8% of the total population (Jauhar et al., 2021). According to the Ministry of Health of the Republic of Indonesia, (2017) Asian Countries including Indonesia, 5,052 men suffered from urinary incontinence problems, ranging from 15 to 30% of individuals suffering from urinary incontinence were estimated to be over 60 years old. According to Samosir (2019) reported the prevalence of urinary incontinence in elderly women at 38% and in men 19%. The prevalence of urinary incontinence in Indonesia has reached 5.8% of the total population (Koerniawan, 2020). Urinary incontinence in East Java Province in 2017 was recorded at 14.21% (East Java Health Office, 2018). In 2024 at the UPT Panti Sosial Tresna Werdha Glenmore, the number of elderly people was 100 people, initial data on urinary incontinence sufferers in September 2024 at the UPT Panti Sosial Tresna Werdha Glenmore was 34 people.

Every elderly person will experience an aging process that results in decreased body function which causes physiological and psychological changes. According Krisnawati, (2021) one of the physiological changes that occurs is a change in the urinary system with a decrease in bladder capacity. The bladder will become weak due to irregular sphincter muscle contractions so that the urination process in the elderly will increase. The capacity of the bladder will decrease, the pressure of urethral closure, the increase in the volume of residual urine after urination, and changes in the rhythm of urine production at night due to the aging process. Decreased bladder control can cause a problem if not treated, namely urinary incontinence or the ability to urinate (BAK) or a frequency of urination ≥ 8 per day/24 hours which is also known as urinary incontinence (Krisnawati, 2021).

Menurut Krisnawati (2021) One of the non-pharmacological therapies to overcome urinary incontinence in the elderly is by doing pelvic muscle exercises or can be called Kegel exercises. Kegel exercises are a form of exercise that can strengthen the pelvic floor muscles, especially in the pubococcygeus muscle, in addition to tightening the vaginal muscles and levator ani muscles. When the elderly do Kegel exercises regularly, it is hoped that the muscles can recover so that the strength of the muscles can control the release of urine. Kegel exercises are the easiest non-pharmacological therapy option if done by the elderly because the movements of Kegel exercises are easy to understand, do not require costs, have no side effects and can be done anytime and anywhere by the elderly such as standing, sitting or lying down. The family also has an important role in providing care and has the responsibility to monitor the elderly when doing Kegel exercises so that they get good benefits and results (Krisnawati, 2021).

Based on the background above, the researcher wants to conduct research on the effect of Kegel exercises on urinary incontinence in the elderly at the UPT Panti Sosial Tresna Werdha Glenmore.

METHODS

The type of research is a research plan that is arranged in such a way that researchers can obtain answers to research questions (Nursalam, 2020).

This type of research is quantitative with a quasi-experimental design, namely an experiment that is carried out without having strict limitations on randomization, at the same time it can control validity threats (Notoatmodjo, 2018).

This study uses a one group pre-test and post-test design, which is a study that reveals a causal relationship involving one group of subjects. A group of subjects is observed before the intervention is carried out, then observed again after the intervention. In this design there is no comparison group (control) but a first observation (pretest) is carried out which allows researchers to test the changes that occur after the treatment with a post-test (Nursalam, 2017).

In diagram form, the single group pretest and posttest design can be described as follows:

Pre test	Treatment	*Post test*
01	x	02

Information :

01 : Urinary incontinence measurement before doing Kegel exercises

X : Treatment or action of providing Kegel exercises

02 : Incontinence measurement after kegel exercises. As ethical considerations, researchers used informed consent, the principle of anonymity and the principle of confidentiality.

RESULTS

a. Respondent Characteristics

Based on research conducted on 34 respondents at the UPT Panti Sosial Tresna Werdha Glenmore, the following data was obtained on the characteristics of the respondents, including age and gender:

Table 1
Frequency Distribution of Respondents Based on Age and Gender (N=34)

Characteristics		Frequency	Percentage
1. Age			
	60-74	25	73,5 %
	75-90	9	26,5 %
	Total	**34**	**100 %**
2. Gender			
	Male	15	44,1 %
	Female	19	55,9 %
	Total	**34**	**100 %**

From table 1 above, based on age characteristics, it can be seen that the majority of 25 respondents (73.5%) are aged 60-74 years, almost half of 9 respondents (26.5%) are aged 75-90 years, and based on gender characteristics, the majority of 19 respondents (55.9%) are female, almost half of 15 respondents (44.1%) are male.

The older a person is, the greater the risk of experiencing health problems due to aging factors. The elderly will experience changes in terms of physical, economic, psychosocial, cognitive and spiritual aspects.

b. Frequency of Urinary Incontinence in the Elderly Before and After Intervention

Based on research conducted on 34 respondents at the UPT Panti Sosial Tresna Werdha Glenmore, the following data was obtained on the Frequency of Urinary Incontinence of pre-test and post-test respondents:

Table 2
Frequency Distribution of Urinary Incontinence in the Elderly Before and After Intervention

Variable	*Pre test*		*Post test*	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Mild urinary incontinence	0	0	15	44,1%
Mild to moderate urinary incontinence	11	32,4%	10	29,4%
Moderate urinary incontinence	9	26,5 %	9	26,5 %
Severe urinary incontinence	14	41,2%	0	0
Total	**34**	**100 %**	**34**	**100 %**

From table 2 above, it can be seen that before the Kegel exercise intervention, almost half of the 14 respondents (41.2%) experienced severe urinary incontinence, 11 respondents (32.4%) experienced mild-moderate urinary incontinence and 9 respondents (26.5%) experienced moderate urinary incontinence. While after the Kegel exercise intervention, almost half of the 15 respondents (44.1%) experienced mild urinary incontinence, 10 respondents (29.4%) experienced mild-moderate urinary incontinence and 9 respondents (26.5%) experienced moderate urinary incontinence.

c. Data Normality Test

Table 3
Normality Test Of Urinary Incontinence Frequency Data Before And After Kegel Exercises

Variable	Group	N	P-Value
Frequency of urinary incontinence	Experiment		
	Pre	34	0,00
	Post		0,00

From table 3 above, it can be concluded that the frequency of urinary incontinence before and after Kegel exercises has a p value <0.05 so that the data is not normally distributed. Data that is not normally distributed, the research hypothesis test uses a non-parametric comparative test, namely the Wilcoxon Test.

d. Wilcoxon Test

Table 4
Data On The Frequency Of Urinary Incontinence Before And After Kegel Exercises

Variable	Mean	SD	SE	P-Value	N
Rata-rata					
a. Pre intervention	3.0882	0.86577	0.14848	0.00	34
b. Post intervention	1.8235	0.83378	0.14299		34

From Table 4 above, it can be explained that the frequency of urinary incontinence before the provision of Kegel exercise intervention obtained an average (mean) of 3.0882 and a standard deviation of 0.86577, after the provision of Kegel exercise intervention 1.8235 and a standard deviation of 0.83378, it can be concluded that there is a change in the frequency of urinary incontinence from before and after the provision of Kegel exercise intervention. From the results of the Wilcoxon Signed Rank Test statistical test, a p-value (0.000) ≤ α (0.05) was obtained, meaning that H0 was rejected and H1 was accepted, which means that there is an effect of Kegel exercise on urinary incontinence in the elderly at the Tresna Wherda Glenmore Social Home.

DISCUSSION

Based on the results of the study conducted at the UPT Panti Sosial Tresna Werdha Glenmore, it can be seen that the age of the respondents is mostly in the interval of 60-74 years, namely 25 respondents (73.5%), and the least is at the age of 75-90 years, namely 9 respondents (26.5%). The higher the age of a person, the greater the risk of experiencing health problems because of the aging factors, the elderly will experience changes in terms of physical, economic, psychosocial, cognitive and spiritual. This is in line with the study conducted by Suhartiningsih, et al. (2021) entitled "The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at the Mandalika Mataram Elderly Social Center" it was found that urinary incontinence occurred in respondents who were ≥ 60 years old.

Based on table 4 of the Wilcoxon test above, it can be concluded that the p-value is 0.000 (<0.05), meaning that there is an effect of Kegel exercises on the frequency of urinary incontinence after being given Kegel exercises. This study is in line with the study conducted by Aulia, et al. (2022) entitled "The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at Toeloengredjo Pare Hospital", the P-value = 0.000 (<0.005) is obtained, meaning that Kegel exercises are effective in reducing the frequency of urination in urinary incontinence conditions.

This pelvic floor muscle exercise is able to strengthen the levator ani muscle, maintain the endopelvic layer and the integrity of the nerves which can increase awareness of the pelvic floor muscles to adjust the transmission of abdominal pressure, and increase the ability of these muscles to support the bladder, which can then increase the resistance of the urethral sphincter so that it can increase the continent period for urine.

According to Amelia's research (2020) Urinary incontinence is suffered by 23.73% of the elderly. Geriatricians report that this is a common problem faced by patients, which is estimated to cover 25–35% of the overall elderly population. The inability to control urine production is a common problem that occurs in elderly women and men and can cause social disorders. This condition is known as urinary incontinence. This is reinforced by the fact that a person's age increases the likelihood of incontinence because aging reduces the efficiency and physiological function of organs.

Research conducted by Krisnawati (2021) entitled "The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at the UPT Tresna Werdha Magetan Social Services". The study aims to determine the effect of Kegel exercises on reducing urinary incontinence in the elderly, using a pre-experimental research design with a one group pre-post test design, and using the RUIS (Revised Urinary Incontinence Scale) observation sheet research instrument, which was then analyzed using the Wilcoxon sign rank test statistical test. The difference between the current and previous studies is that the instrument used in the current study uses the ICIQ-UI short Form questionnaire sheet. The similarities in both studies are that both use Willcoxon as their testing technique.

CONCLUSION

Based on the results of the discussion above, it can be concluded that there is an effect of Kegel exercises on urinary incontinence in the elderly at the UPT Panti Sosial Tresna Werdha Glenmore. This

conclusion is based on the results of the evaluation before and after the Kegel exercise intervention using the ICIQ-UI short Form questionnaire sheet, where there is variation in the improvement.
The results of observations before and after the intervention were given to the sample showed changes in the increase in pelvic floor muscle strength as described in the ICIQ-UI short Form questionnaire. Before the Kegel exercise intervention, 14 respondents were in the severe urinary incontinence category, 11 respondents were in the mild-moderate urinary incontinence category and 9 respondents were in the moderate urinary incontinence category. While after the Kegel exercise intervention, 15 respondents were in the mild urinary incontinence category, 10 respondents were in the mild-moderate urinary incontinence category and 9 respondents were in the moderate urinary incontinence category. Based on these results, it can be concluded that Kegel exercises can increase pelvic floor muscle strength in urinary incontinence conditions. So it can be used as a non-pharmacological therapy for the elderly who experience urinary incontinence at the UPT Panti Sosial Tresna Wherda Glenmore

ACKNOWLEDGMENTS:
Thank you to all respondents and all those who have contributed to this research

CONFLICTS OF INTEREST
No conflict of interest was found during the research

REFERENCES
Amelia R. Prevalence and risk factors of urinary incontinence in elderly in social homes for the disabled in West Sumatra. Faculty of Medicine, Baiturrahmah University; 2020

Andanawarih P, Kusumawardani D (2018) The role of elderly integrated health service post on elderly health in Bina Griya Indah housing complex, Pekalongan city. Cycle journal, volume 7 number 1

Arumsari, et al. (2019). The Effect of Reiminiscence Therapy on Stress Levels in the Elderly at the Budi Luhur Unit PSTW, Kasongan, Bantul, Yogyakarta.

Aulia, I.S., Ahmad, A., Rachma, P.K., Yohanes, D.F. (2022). The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at Toeloengredjo Hospital, Pare. Muhammadiyah Nursing Journal Vol. 7 No. 1 2022.

Cabrera, A. J. (2015). Theories Of Human Aging Of Molecules To Society. MOJ Immunology, 2(2), 41.

Cho, S.T., & Kim, K.H. (2021). Pelvic floor muscle exercise and training for coping with urinary incontinence. J. Exerc. Rehab. 17 : 379–387.

Daryaman, Usan. 2021. "The Effect of Kegel Exercise on Urinary Incontinence in the Elderly." Jurnal Sehat Masada 15(1): 174–79.

Dinkes Jatim. 2018. East Java Health Profile 2017. Surabaya: East Java Provincial Health Office.

D'Ancona, C. et al. (2019) 'The International Continence Society (ICS) report on the terminology for adult male lower urinary tract and pe;vic floor symptoms and dysfunction', Neurology and Urodynamics, 38(2), pp. 433-477. doi: 10.1002/nau.23897.

Haris, A. B., & Emilyani, D. (2019). The Effect of Breathing Relaxation Techniques on Urinary Incontinence in the Elderly at PSTW "Meci Angi" Bima. Jurnal Analis Medika Biosains, 2(2), 302–311.

Jauhar, M., Lestari, R. P., & Surachmi, F. (2021). Literature Study: Kegel Exercises Reduce Urinary Frequency in the Elderly. Bimiki (Scientific Periodical of Indonesian Nursing Students), 9(1), 29–38.

Kemenkes RI, 2017. Indonesian Health Profile Year 2017. Jakarta : Kemenkes.

Kholifah, Siti Nur. 2016. Gerontic Nursing. Jakarta Selatan: Kemenkes RI.

Koerniawan, D., Srimiyati, Fari, A. I., & Sanny Frisca. (2020). Assistance in Efforts to Reduce Urinary Incontinence for the Community in Talang Betutu Palembang. Nursing and Nursing Science, Musi Charista Catholic University, Indonesia, 4(1), 77–83.

Krisnawati, K. (2021). Thesis The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at the Tresna Werdha Magetan Social Service Unit (Muhammadiyah University of Ponorogo).

Mariza, (2021). Thesis Factors Related to Urinary Incontinence in the Elderly at Tanjung Raman Health Center, Prabumulih City. Nursing Study Program, Faculty of Medicine, Sriwijaya University, Indonesia.

Moa, H. M., Milwati, S., and Sulasmini, S. 2017. The Effect of Bladder Training on Urinary Incontinence in the Elderly at the Elderly Posyandu in Sumberdem Village, Wonosari District, Malang. Nursing News: Scientific Journal of Nursing. 2(2): 595–606

Notoatmodjo, S. 2018, Health Research Methodology, Jakarta: Rineka Cipta

Nursalam. (2017). Nursing Science Research Methodology (4th ed). Jakarta : Salemba Medika.

Nursalam. (2020). Nursing Science Research Methodology (P. P. Lestari (ed.); Edisi 5). Salemba Medika.

Relida, N., & Ilona, Y. T. (2020). The Effect of Giving Kegel Exercises to Reduce the Degree of Urinary Incontinence in the Elderly. *Jurnal Ilmiah Fisioterapi*, *3*(1), 18–24. Https://Doi.Org/10.36341/Jif.V3i1.1228

Robinson, D. (2021). Ambulatory Surgical Procedures in Stress Urinary Incontinence. *Ambulatory Urology and Urogynaecology*, 81–97. https://doi.org/10.1002/9781119052258.ch7

Samosir, Nova Relida & Ilona, Y. T. (2019). THE EFFECT OF GIVING KEGEL EXERCISES TO REDUCE THE DEGREE OF URINARY INCONTINENCE IN THE ELDERLY. *Jurnal Ilmiah Fisioterapi (JIF)*, *2*, 18–24.

Suhartiningsih, Wahyu Cahyono & Martina Egho (2021). The Effect of Kegel Exercises on Urinary Incontinence in the Elderly at the Mandalika Mataram Elderly Social Center. Jurnal Ilmu Sosial dan Pendidikan (JISIP) Vol. 5 No.3 Juli 2021.

Susilo, Wilson. (2017). Risk of Falls in the Elderly Increases with Age and is Not Affected by Gender. Journal of Medicine and Health Vol.1 No.6.

Untari, I. (2018). Gerontic Nursing Textbook. Jakarta: EGC. Hal: 30-38.

Yang, B., & Foley, S. (2020). Overview on the management of adult urinary incontinence. *Surgery (United Kingdom)*, *38*(4), 204–211