

DOI: <https://doi.org/10.36720/nhjk.v7i2.44>

Wilda, L. O. & Andriani, N. D. *Nurse and Health: Jurnal Keperawatan*. 2018 July-December; 7 (2): 106-112

Accepted: October 15, 2018

<http://ejournal-kertacendekia.id/index.php/nhjk/>

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ORIGINAL RESEARCH

p-ISSN 2088-9909 | e-ISSN 2623-2448

## THE INFLUENCE OF KEGEL EXERCISE ON ELDERLY PATIENTS WITH URINARY INCONTINENCE IN TECHNICAL IMPLEMENTATION UNIT OF SOCIAL SERVICE TRESNA WERDHA JOMBANG

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### ABSTRACT

**Background:** Urinary incontinence is an uncontrolled release of urine in considerable amounts, this is due to changes in bladder structure and pelvic floor muscle resulting in the elderly being unable to withstand urine during urination.

**Objectives:** The aims of this research were to determine the influence of kegel exercise on elderly patients with urinary incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

**Method:** The design of pre-experimental research design with one group pre-post-test design approach, conducted on 25 April to 25 May 2018. The Population of all elderly urinary incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang were 10 respondents. Sampling technique total sampling. Independent variable of kegel exercise, dependent variable urinary incontinence. Data collection using ICIQ - UI SF questionnaire. Statistical test using Wilcoxon with significant level  $\alpha = 0.05$ .

**Results:** The Result of the study from 10 respondents, mostly 7 respondents (70%) before the kegel exercise had moderate urinary incontinence, while almost all of 8 respondents (80%) after kegel exercise had mild urinary incontinence. Wilcoxon statistical test result obtained p value =  $0,008 \leq 0,05$  then  $H_a$  accepted so that there is influence of kegel exercise on elderly patients with urinary incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

**Conclusion:** Kegrel exercise proved to increase pelvic floor muscle strength and reduce urinary incontinence, so it is necessary to do the elderly regularly and periodically.

**Key words:** Kegrel Exercise, Urinary Incontinence, Elderly.

### INTRODUCTION

Physical changes occur in every elderly. This change occurs in a variety of systems, namely changes in cells, nervous system, auditory system, visual system, cardiovascular system, system of regulating body temperature, respiratory system, endocrine system, integumentary system, urinary system, and musculoskeletal system (Nugroho, 2008). One of the physical changes that occur in the elderly is a change in the urinary system that has the potential for urinary incontinence problems. Urinary incontinence is an uncontrolled amount

of urinary discharge. This is due to changes in the structure of the bladder and pelvic floor muscles which results in the elderly being unable to hold urine while urinating. Incidence of urinary incontinence in the elderly must be given management, therefore the elderly must be self-conscious in striving to prevent changes in the urinary organ system, especially changes in pelvic floor muscles that serve to protect the bladder and urinary tract door to prevent ongoing urinary incontinence. Based on preliminary studies conducted by researchers by conducting interviews with the elderly at

Technical Implementation Unit of Social Service Tresna Werdha Jombang in 10 elderly, obtained their complaints are not able to hold urine when urinating, which occurs almost every day with urine spending quite a lot, with conditions such as the elderly said during use diapers to deal with urinary incontinence. While the consequences of using pampers for a long period of time can cause abrasions if the amount of urine exceeds the capacity, so the urine comes out and consequently the skin becomes moist, redness of the skin, itching, and allergies. *World Health Organization (WHO)* mentioned that around 200 million people worldwide experience urinary incontinence. Data in the United States is estimated at around 10-12 million adults with urinary incontinence with 85% of them occurring in women (Collein, 2015). *Survey Asia Pasific Continence Advisory Board (APCAB)* revealed the prevalence of overall urinary incontinence in Asia from China, Hong Kong, India, Indonesia, Korea, Malaysia, Pakistan, the Philippines, Singapore, Taiwan and Thailand by 12.2%. In Indonesia, a survey of urinary incontinence conducted by the Geriatrics Division of the Department of Internal Medicine Dr. General Hospital Cipto Mangunkusumo on 208 elderly people in the family compensation center in Jakarta (2014), found the incidence of stress type urinary incontinence was 32.2%. While the research conducted at the Geriatric Police Hospital Dr. Sardjito found the prevalence rate of urinary incontinence was 14.47% (Setiati dan Pramantara, 2012). In East Java, a survey of urinary incontinence was carried out by the Urology Department of FK Unair-RSU Dr. Soetomo on 793 patients, obtained the incidence rate of urinary incontinence in men 3.02% while in women 6.79% (Angelita, 2016). Factors causing urinary incontinence occur due to the aging process in which the elderly experience changes in the anatomy or function of the urinary organs. Basically, the process is governed by the micturition reflex urinary centered at the center in the sacrum, afferent pathways carry information regarding the volume of the bladder in the spinal cord (Darmojo, 2008). Bladder filling is done by relaxing the bladder through the inhibition of the parasympathetic nerve and bladder neck contractions supplied by the sympathetic nerves and somatic nerves that supply the pelvic floor muscles (Guyton, 2007). Bladder emptying

through parasympathetic cholinergic innervation that causes bladder contractions, while bladder sympathetic effects are reduced. If the cerebral cortex suppresses the inhibiting center, it will stimulate the appearance of micturition, while in the aging process resulting in the loss of suppression of the inhibiting center, this results in changes in the structure of the bladder and pelvic floor muscles so that the elderly cannot hold urine while urinating. In addition, due to abnormal contractions of the bladder wall may lead to a new bladder filled little has caused curiosity urination. Management of urinary incontinence is pharmacological management by taking drugs, such as Oxybutinin, Propantteine, Diclomine, Flavoxate, Imipramine. Non-pharmacological management, including surgery, modalities such as catheter use, toilet aids in the form of urinals, commodities, bedpan, and use of pampers (Muller, 2008). Other Management may include Kegel exercises are often applied in elderly patients with urinary incontinence (Yanthi, 2011). Kegel exercise is pelvic floor muscle training which was first developed by Dr. Arnold Kegel in 1940, this exercise was carried out by contracting and relaxing the pelvic floor muscles of Pubbococcygeus (PC) or Pelvic Floor Muscle which is beneficial to increase the strength of the pelvic floor muscles to contract and to stretch and increase muscle strength in the urethra, thereby resolving the stress of urinary incontinence. This study aims to determine the influence of kegel exercise on elderly patients with urinary incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

## **METHODS**

### *Study Design*

The study used pre-experimental with one group pre-post-test design approach.

### *Setting*

This research was conducted in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

### *Research Subject*

The population in this study were all elderly patients with urinary incontinence at Technical Implementation Unit of Social Service Tresna Werdha Jombang, which were as many as 10 elderly.

The sample in this study were all elderly patients with urinary incontinence at Technical Implementation Unit of Social Service Tresna Werdha Jombang, which were as many as 10 elderly. Sampling technique was used total sampling. After that, the consent form respondents will be given to the elderly.

#### Instrument

This study was carried out before being given treatment or treatment of kegel exercise, urinary incontinence was measured first (pre-test). After that, respondents were given treatment or treatment of kegel exercise and then measured urinary incontinence (post-test) using ICIQ - UI SF questionnaire.

#### Data Analysis

The results of this study were analyzed using the Wilcoxon statistic test with value of  $\alpha=0,05$ .

## RESULTS

### Characteristics of Respondents by Gender

**Table 1.** Distribution of Respondents by Gender in the Elderly at Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Gender	Frequency	Percentage (%)
1	Male	4	40
2	Female	6	60
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 1, it was found that most of the female were 6 respondents (60%).

### Characteristics of Respondents by Age

**Table 2.** Distribution of Respondents by Age in the Elderly at Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Age (Years)	Frequency	Percentage (%)
1	60-69	4	40
2	70-79	6	60
3	80-89	0	0
4	90	0	0
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 2, it was found that most of them aged 70-79 years were 6 respondents (60%).

### Characteristics of Respondents by Level of Education

**Table 3.** Distribution of Respondents by Level of Education in the Elderly at Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Level of Education	Frequency	Percentage (%)
1	No School	7	70
2	Elementary School	3	30
3	Junior High School	0	0
4	Senior High School	0	0
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 3, it was found that most of them did not attend school as many as 7 respondents (70%).

### Characteristics of Respondents by Marital Status

**Table 4.** Distribution of Respondents by Marital Status in the Elderly at Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Marital Status	Frequency	Percentage (%)
1	Not Married	2	20
2	Widow	8	80
3	Married	0	0
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 4, it was found that almost all were widows as many as 8 respondents (80%).

### Characteristics of Respondents by Long Occupied Tresna Werdha

**Table 5.** Distribution of Respondents by Long Occupied Tresna Werdha in the Elderly at Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Long Occupied Tresna Werdha (Years)	Frequency	Percentage (%)
1	0-5	4	40
2	6-10	6	60
3	More than 10	0	0
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 5, it was found that almost all were long occupied *tresna werdha* on 6-10 years as many as 6 respondents (60%).

*Characteristics of Respondents by Occupational Before Living in Technical Implementation Unit of Social Service Tresna Werdha Jombang*

**Table 6.** Distribution of Respondents by Occupational Before Living in Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Occupational Before Living in Technical Implementation Unit of Social Service Tresna Werdha Jombang	Frequency	Percentage (%)
1	Does Not Work	3	30
2	Retired	1	10
3	Farmer	4	40
4	Entrepreneur	2	20
5	Etc.	0	0
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 6, it was found that almost half of the respondents had a job before Living in Technical Implementation Unit of Social Service Tresna Werdha Jombang as farmers as many as 4 respondents (40%).

*Characteristics of Respondents by Drink Consumed*

**Table 7.** Distribution of Respondents by Drink Consumed in the Elderly at Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Drink Consumed	Frequency	Percentage (%)
1	Tea	5	50
2	Coffee	2	20
3	Mineral Water	3	30
Total		10	100

Sources: Primary Data of Questionnaire

Based on Table 7, it was found that half of the respondents consumed tea as many as 5 respondents (50%).

*The Influence of Kegel Exercise on Elderly Patients with Urinary Incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang*

**Table 8.** Examination of The Influence of Kegel Exercise on Elderly Patients with Urinary Incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang (n = 10).

No	Urinary Incontinence	Pre-Test		Post-Test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Mild Urinary Incontinence	2	20	8	80
2	Moderate Urinary Incontinence	7	70	2	20
3	Heavy Urinary Incontinence	1	10	0	10
Total		10	100	10	100

Wilcoxon Statistical Test obtained  $p = 0.008, \alpha \leq 0.05$

Sources: Primary Data of Questionnaire

Based on table 8, it was found that most of the respondents had moderate urinary incontinence before doing kegel exercise and mild urinary incontinence after exercise kegel exercise as many as 6 respondents (60%). Wilcoxon statistical test results obtained  $p$ -value = 0.008,  $\alpha < 0.05$  so  $H_a$  was accepted and  $H_o$  was rejected, it can be concluded that there was an effect of kegel exercise on elderly urinary incontinence sufferers in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

**DISCUSSION**

*Urinary Incontinence Before Kegel Exercise*

The results of the study in table 8 of 10 respondents found that most had moderate urinary incontinence before exercise kegel was 7 respondents (70%). The data is supported by 5 female respondents (71.4%), 5 respondents aged 70-79 years (71.4%), 6 non-school respondents (85.7%), 5 respondents are widows (71, 4%), 4 respondents occupied nursing homes for 6-10 years (57.1%), 3 respondents did not work (42.9%), 4 respondents consumed tea (57.1%). The results of statistical tests between demographic data and urinary incontinence prior to kegel exercise showed that the results of  $p$ -value  $> \alpha = 0,05$  so that there was no most dominant factor affecting urinary incontinence before kegel exercise. Factors causing urinary incontinence occur due to the aging process in which the elderly

experience changes in the anatomy or function of the urinary organs. Basically, the process is governed by the micturition reflex urinary centered at the center in the sacrum, afferent pathways carry information regarding the volume of the bladder in the spinal cord (Darmojo, 2008). Bladder filling is done by relaxing the bladder through the inhibition of the parasympathetic nerve and bladder neck contractions supplied by the sympathetic nerves and somatic nerves that supply the pelvic floor muscles (Guyton, 2007). The results of the study based on statistical tests showed demographic data such as age, sex, and consumption of certain drinks had no effect on incontinence. This is not in line with the theory that states that age above 60 years is prone to urinary incontinence. According to researchers the factors that play a more important role in the occurrence of urinary incontinence are factors that decrease urinary organs, especially on the pelvic floor. This makes the elderly unable to withstand urination for a long time which in turn causes urinary incontinence.

#### *Urinary Incontinence After Kegel Exercise*

The results of the study in table 8 out of 10 respondents found that almost all had mild urinary incontinence after doing exercise exercises as many as 8 respondents (80%). The data is supported by 4 respondents female (50%), 5 respondents aged 70-79 years (62.5%), 6 respondents not schooling (75%), 6 respondents are widows (75%), 5 respondents inhabit institutions werdha for 6-10 years (62.5%), 3 respondents did not work (37.5%), 4 respondents consumed tea (50%). The results of statistical tests between demographic data with urinary incontinence after kegel exercise obtained  $p$ -value  $> \alpha = 0.05$  so that there was no most dominant factor affecting urinary incontinence after the respondent's kegel exercise. According to research conducted by Rahajeng (2010), that without pelvic floor muscle exercises or kegel exercises there would be no improvement in pelvic floor muscle strength. Weakness of the pelvic floor muscles can cause the muscle to fail to perform its function. According to Setiati (2006), incomplete emptying of the bladder causes a lot of urine in the bladder so that just a little filling is stimulating to urinate. Prostate hypertrophy can also cause the amount of residual urine in the bladder as a result of imperfect emptying.

The results of the study based on statistical tests showed demographic data such as age, sex, and consumption of certain drinks had no effect on incontinence after kegel exercise. Changes that occur in urinary incontinence are caused by kegel exercise. Changes in the majority of incontinence are mild urinary incontinence. Exercises that are carried out on a regular basis and the movement of Kegel exercises performed correctly by the elderly will make the pelvic muscles stronger so that the ability to withstand urination is longer. Another factor influencing according to the researchers is the consumption of drinks with diuretic content which is reduced by the elderly so that urine production is not too much.

#### *The Influence of Kegel Exercise on Elderly Patients with Urinary Incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang*

The results of the study Based on Table 8 it was found that out of 10 respondents most of the respondents had moderate urinary incontinence before doing kegel exercise and mild urinary incontinence after exercise kegel exercise as many as 6 respondents (60%). Wilcoxon statistical test results obtained  $p = 0.008$ ,  $\alpha \leq 0.05$ . Based on this,  $H_a$  is accepted and  $H_o$  is rejected, it can be concluded that there is an effect of kegel exercise on elderly patients with urinary incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

Kegel exercise is pelvic floor muscle training which was first developed by Dr. Arnold Kegel in 1940, this exercise was done by contracting and relaxing the pelvic floor muscles of Pubbococcygeus (PC) or Pelvic Floor Muscle which is beneficial to increase the strength of the pelvic floor muscles to contract and to stretch and increase muscle strength in the urethra, thereby resolving the stress of urinary incontinence (Yanthi, 2011).

According to Maas in Karjoyo et al (2017), pelvic floor muscle training involves repeated contractions of the Pubbococcygeus (PC) muscle, the muscles that make up the pelvic support structure and surround the pelvic door in the vagina, urethra, and rectum. Kegel exercises increase pelvic floor muscle tone, by strengthening the pelvic floor muscles when micturition is felt, individuals are able to delay episodes of urinary incontinence associated

with weakness of the pelvic muscles and / or weakness of the bladder exit.

The results of the study showed the success of kegel exercise in reducing the degree of urinary incontinence. Kegel exercises focus on strengthening pelvic floor muscles that involve contractions of several muscles that make up the pelvic support structure. Increased strength of the pelvic floor muscles makes the sensation of voiding episodes more easily felt than it will make the elderly become stronger to resist urination. The effect of the exercise kegel ultimately makes urinary incontinence decrease so that the quality of life of the elderly becomes better.

## CONCLUSION

Based on the results of the study there are several things that can be concluded, among others:

1. Most experienced moderate urinary incontinence before exercise kegel was 7 respondents (70%).
2. Almost all had mild urinary incontinence after exercise kegel was as many as 8 respondents (80%).
3. Wilcoxon statistical test results obtained  $p = 0.008$ ,  $\alpha \leq 0.05$ , it can be concluded that there is an effect of kegel exercise on elderly patients with urinary incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang.

## SUGGESTION

1. It is expected that the results of this study can be expanded by further research by increasing the control group, adding the timing of Kegel exercises more and longer, and more samples.
2. Educational institutions can develop research on exercise kegel as a guideline for intervention for gerontic nursing with urinary incontinence.
3. For the elderly can provide input to the elderly about the importance of the benefits of doing Kegel exercises to overcome urinary incontinence, so that the elderly can achieve health and quality of life to achieve a healthy, independent and productive old age.
4. For Technical Implementation Unit of Social Service can be used as

information for elderly health programs, especially applying Kegel exercises as a management to overcome the incidence of urinary incontinence.

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Cite This Article As: Wilda, L. O. & Andriani, N. D. The Influence of Kegel Exercise on Elderly Patients with Urinary Incontinence in Technical Implementation Unit of Social Service Tresna Werdha Jombang. *Nurse and Health: Jurnal Keperawatan* 2018; 7(2): 106-112.