ORIGINAL ARTICLE

The Effect of Kegel exercises on urinary incontinence in menopausal women in the Banyuwangi Hindu elderly community

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ABSTRACT

Introduction: *Urinary incontinence refers to an individual's inability to restrain or control the discharge of urine due to weakness of the pelvic floor muscles and bladder muscles that are unable to control urine. This causes contamination of skin diseases in the genital area, quality of sleep, and decubitus. Prevention efforts can be provided with non-pharmacological therapy by doing Kegel exercises to stretch the pelvic floor muscles. The mechanism of action strengthens the capacity of the bladder sphincter.* ***Objectives:*** *This study aimed to determine the effect of Kegel exercises on urinary incontinence in postmenopausal women in the Banyuwangi Hindu elderly community in 2023.* ***Methods:*** *This research employed a pre-experimental research design with a one-group pre-test post-test research design of 18 respondents using a purposive sampling technique. Statistical analysis using the Wilcoxon test.* ***Results:*** *The study's results before the intervention were those who experienced urinary incontinence in the elderly with a minimum value of 13, a median value of 17.50, and a maximum value of 22. After the intervention, those experiencing urinary incontinence had a minimum value of 4, a median value of 7.44, and a maximum value of 12. The findings of this research, analyzed using the Wilcoxon Test with SPSS, yielded a significance value of p = 0.000, which is less than 0.05. This indicates that Kegel Exercise has an impact on Urinary Incontinence in Menopausal Women in the Banyuwangi Hindu Elderly Community in 2023.* ***Conclusions:*** *Kegel exercises contract, increase muscle tone, improve healing by up to 50%, and form a supporting structure for the pelvis, vagina, urethra, and rectum to affect the inability to urinate under control.*

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Introduction

The elderly are part of the physiological process of growth and development which cannot be avoided by everyone and will usually be marked by gradual physical, biological, mental, and psychosocial changes that have an influence, especially when socializing with the environment around them (Andry, 2019). The decline in physical function of the elderly is characterized by changes in cells in the body that influence the work of the sensory system, digestive system, reproductive system, nervous system, and urinary system. The role of the urinary system is to purify the blood, expel toxins, and eliminate metabolic wastes through the urine process (Nuari, 2017). One of the problems that occur in the urinary system is urinary incontinence.

Women more often experience (Scavello, 2019) problems with the urinary system, one of which is urinary incontinence. Basically, women are more susceptible to urinary incontinence compared to men; this condition occurs because it is influenced by the process of pregnancy, childbirth, pressure on the bladder, and menopause (Scavello, 2019). A woman who has entered old age must be prepared to face menopause. This condition occurs at the end of the menstrual cycle, which women experience every month (Indarwati, 2019). During menopause, controlling the bladder becomes more difficult. This happens when menstruation stops. The body stops working at all stages (Koerniawan, 2020). The urethral lining of the tube that empties the bladder

of urine begins to thin. The pelvic floor muscles that support the bladder become weakened, and this causes a decrease in the tone of the pubococcygeal muscle and the urinary tract muscle. Weakness of the pelvic floor muscles can also arise due to overweight (obesity), increased vascularization to the pelvic organs, incorrect pushing, and decreased estrogen hormones, which cause the bladder muscles to relax. This can affect kidney activity, such as more frequent urination or incontinence. urine (Firyal, 2017). The signs of urinary incontinence include urinating when coughing, laughing, sneezing, running, jumping, and urinating at night (Juliana, 2021).

The prevalence of urinary incontinence, according to WHO (World Health Organization) 2021, is reported to be 200 million individuals globally who suffer from urinary incontinence, 85% of whom are women. This number is still very small from the actual condition because there are still many cases that still need to be reported (Lestari, 2021). The prevalence of suffering from urinary incontinence in Indonesia in 2021 was found to be 38% of elderly women experiencing urinary incontinence and 19% of men. Urinary incontinence in Indonesia has reached 5.8% of the total population. Urinary incontinence in East Java Province in 2021 amounted to 21.6%, 14.8% experienced by women and 6.8% experienced by men. In Banyuwangi, the prevalence of urinary incontinence is 9.81%, of which men suffer 3.02% and 6.79% is suffered by women (Suhartiningsih, 2021). According to the findings of an initial study that was carried out on November 11, 2022, in the Banyuwangi Hindu elderly community at the Hindu Center on 30 WHDI people, it was found that 50% of older people experienced symptoms of urinary incontinence using the interview method.

The prevalent occurrence of urinary incontinence is due to a reduction in muscle mass and strength in the elderly, which disrupts daily activities or physical activity (Wahyudi, 2018). With the physiological changes in the elderly, there is weakness in the cells, which occurs especially in the bladder muscles, irregular contractions of the sphincter muscle when it contracts when it experiences pressure on the bladder so that the bladder muscles are unable to control, this can influence the risk of weakening the strength of the pelvic floor muscles as a whole. Active to control urinary defecation, resulting in high rates of urinary incontinence (Lestari, 2021). This requires proper treatment because if not treated immediately, urinary incontinence can cause various discomforts.

Management that can be carried out with increasing urinary incontinence in menopausal women requires serious treatment and prevention. This is intended to avoid negative impacts that will arise. Non-pharmacological therapy can be done easily and cheaply and without side effects by doing pelvic floor muscle exercises (Novera, 2017). Kegel exercises for pulling the pelvic floor muscles, the contraction mechanism and increased muscle tone can occur due to stimulation as a result of the exercise, which in turn strengthens the capacity of the external sphincter in the bladder and the pelvic floor muscles, specifically the muscles that perform a role in regulating micturition and tightening movements, relaxes the pelvic muscle groups and genital area, especially the pubococcygeal muscles, enabling a woman to fortify the muscles of the urinary system (Potter, 2016). Arnold Kegel revealed that Kegel exercises to improve a system improve healing by 50%. Kegel exercises are an effort to prevent urinary incontinence. The contraction mechanism and increased muscle tone can occur due to stimulation as a result of the exercise. Pelvic floor exercises involve muscle contractions that form the supporting structure of the pelvis and surround the pelvic entrance in the vagina, urethra, and rectum. Ultimately, Kegel exercises can influence and improve the inability to urinate in a controlled manner (Insani, 2019).

Methods

This study employed a pre-experimental with one group pre-test post-test design. The population in this study was 30 menopausal women with urinary incontinence. The sampling method utilized purposive sampling and included a sample size of 18 participants obtained according to the inclusion criteria, namely willing to be respondents, still active, and able to communicate actively. In contrast, respondents whose attendance was incomplete and those on the Kegel exercise training schedule that had been determined were excluded as respondents.

The independent variable in this study is Kegel exercises, and urinary incontinence in menopausal women is the dependent variable. The instruments used are standard operational

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procedures for Kegel exercises, observation sheets, and the ICIQ-UISF (International Consultant Incontinence Questionnaire-Urine Incontinence Short Form) questionnaire for urinary incontinence, which consists of 6 questions with classification based on answers adjusted to the choice of each score (0 does not experience urinary incontinence) (mild urinary incontinence score 1 6), (mild moderate urinary incontinence score 7 12), (moderate urinary incontinence score 13 18), (severe urinary incontinence score 19 24) and (very severe urinary incontinence score 25 30). This research was carried out in the Hindu elderly community in the Penganjuran Banyuwangi sub-district from March to April 2023.

The data collection procedure starts with obtaining permission, then respondents are given the ICIQ-UISF questionnaire to measure urinary incontinence and an observation sheet before carrying out the Kegel exercise intervention. Kegel exercises are done once a week and carried out for 1 month with a Kegel exercise duration of 15-30 minutes. After 4 meetings, the researcher again measured urinary incontinence using a questionnaire and observation sheet. After the data is collected, editing, coding, scoring, and tabulating is carried out. Data normality test was carried out using Shapiro Wilk and data analysis using the Wilcoxon Test.

Results and Discussion

3.1 Result

Table 1 Respondent Characteristics

Variable	Amount	Percentage (%)
Age		
45 – 59	4	22
60 – 74	12	67
75 – 90	2	11
Number of Children		
1-3	17	94
>4	1	6
Delivery Method		
Normal	17	94
SC	1	6

Table 1 reveals that the majority of participants aged between 60-74 years were 12 people (67%), with almost all of them giving birth normally and having 1-3 children, 17 people (94%).

Table 2. Pre-Test and Post-Test Results

Variable	Std. Deviation	Median	Minimum	Maximum	Difference	P-Value
Pre Test	3.18544	17,50	13	22	10,06	0,000
Post Test	2.89523	7,44	4	12		

In Table 2, it can be concluded that the results before the Kegel exercise intervention were carried out, the score or score for those who experienced urinary incontinence was obtained with a minimum value of 13 and a maximum value of 22. Then, after the Kegel exercise intervention, the value or scoring for the elderly who experienced urinary incontinence was obtained with a minimum value of 4 and a maximum score of 12. The pre-test median score was 17.50 with a standard deviation of 3.18544, whereas the post-test median score was 7.44 with a standard deviation of 2.89523. The median decrease, calculated from the pre-test and post-test results, was 10.06.

Table 3. Uji Wilcoxon

	Pre-test – Post-test
Z	-3. 734
Asymp. Sig (2-tailed)	.000

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Based on Table 3 above, the sig value results are obtained. (2-tailed) = 0.000. As the value of 0.000 is less than (< 0.05), it leads to the conclusion that the hypothesis is accepted and there is a difference in the pre-post median decrease of 10.06, meaning there is a significant difference before and after the Kegel exercise intervention in the Banyuwangi Hindu elderly community in 2023.

Discussion

The statistical test results using the Wilcoxon Rank Test showed that the significant value was obtained (2-tailed) =0.000. Where the value of 0.000 is less than (<0.05), then Kegel exercises have an effect on urinary incontinence in women during menopause in the Banyuwangi Hindu elderly community in 2023.

Kegel exercises are a series of movements that aim to tighten the pelvic floor muscles, which can have an impact on the bladder muscles of people with urinary incontinence. Kegel exercises significantly enhance the strength of the pelvic floor muscles. So, they are recommended to be done to prevent incontinence in menopausal women. The mechanism of action of Kegel exercise is that contraction and increased muscle tone can occur due to stimulation as a result of the exercise, which in turn strengthens the capacity of the bladder sphincter and pelvic floor muscles, namely the muscles that play a role in regulating micturition and movement which tightens, relaxes the pelvic muscle group and genital area, particularly, they fortify the pubococcygeal muscles, enabling a woman to enhance her urinary tract muscles. Strengthening the skeletal muscles in the pelvic floor will also strengthen the muscles that make up the role of the external sphincter in the bladder.

Arnold Kegel's theory reveals that Kegel exercises to improve a system improve healing by 50%, preventing the emergence of urinary incontinence, the contraction mechanism, and increasing and stimulating the pelvic floor muscles. Though it requires time and patience for optimal outcomes, urine control in seniors will still lead to effective management of the bladder (Potter, 2016).

Several factors can cause urinary incontinence, such as age, number of children, and method of delivery. Urinary incontinence can be explained by a person's inability to hold back urine, a condition experienced by the body where urine is released uncontrollably or without realizing it. In a person who is 50-60 years old, the body structure, including muscles, experiences a decline in function of up to 80%. The factor of age holds significant importance in the development of urinary incontinence. The relationship is in the same direction as There is a rise in the occurrence of urinary incontinence between the ages of 45 and 76 years. This indicates that some of the changes in pelvic floor muscles and general health associated with the aging process are consistent with the increase in urinary incontinence associated with female age. Most women who have entered old age must prepare for the menopause period. During menopause, there is a decrease in the production of the hormone estrogen, which can affect the thinning of the lining of the vagina and urethra. As age increases, it causes changes in the anatomy and function of the urinary organs of the elderly. There is damage or weakness of the pelvic floor muscles, so urination dysfunction decreases the tone of the pubococcygeal muscle and the urinary tract muscle (Firyal, 2017).

The number of children the respondent has also influenced the occurrence of urinary incontinence. In this study, the majority of children had 1-3 children, with a total of 17 respondents (94.4%). One of the factors that can cause urinary incontinence is pregnancy and the number of children you have. The relationship between the pregnancy process and the number of children and urinary incontinence often occurs after giving birth. It is known that urinary incontinence often occurs during pregnancy and the number of children one has. The more often a person gives birth and has more than 1 child, the more they will experience urinary incontinence in the long term, where the pelvic organs relax, and the pelvic floor muscles will experience stretching and damage to the pelvic fascia and nerves around the pelvis. If the pelvic floor muscles relax, it can cause the opening of the urethra to stretch. So, the pressure during pregnancy for nine months and the large increase in intra-abdominal pressure can force urine into the urethra very

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easily so that the ability to control the bladder becomes impaired and can cause urinary incontinence in the long term (Suhartiningsih, 2021).

Another problem that affects urinary incontinence is childbirth. In this study, the majority of respondents gave birth normally, 17 elderly people (94.4%). Normal childbirth certainly involves effort in the pushing process. During normal delivery, the stomach will feel tight, and the uterine muscles feel tight. The uterine muscles contract increasingly to dilate the cervix. The lower pelvic muscles are the muscles most at risk of pelvic injury, causing chronic pain and causing the bladder, uterus, and rectum to exit the vagina, which can cause urinary incontinence. The relationship between the normal birth method has a higher risk of experiencing urinary incontinence compared to giving birth using the CS method. Women who give birth vaginally show that the results of vaginal birth increase the risk of urinary incontinence (Krisnawati, 2021).

This research involved conducting both pre-test and post-test, which indicated a decrease in the value or score of urinary incontinence. This is because menopausal women can carry out Kegel exercise interventions well and also actively ask about things or movements that are not well understood as to the benefits associated with doing them. Kegel exercise intervention can make women quickly understand the movements according to the SOP so they can practice them independently when the Kegel exercise intervention is carried out. The benefit of this Kegel exercise intervention is that it strengthens the pelvic floor muscles and the bladder sphincter, namely the muscles that play a role in regulating micturition and tightening movements, relaxes the pelvic muscle group and genital area, particularly the pubococcygeal muscles are targeted so that an individual can fortify the muscles of the urinary system. Urinary tract, sexual muscles, and pelvic muscles facilitate childbirth in pregnant women (Ruswati, 2022).

After carrying out Kegel exercise training for 1 month by doing 4 exercise exercises, there were changes from the first week to the fourth week. Some of the impacts that respondents could feel when the Kegel exercise training was carried out when respondents experienced muscle cramps or muscle tension around the pelvic muscles and lower abdominal muscles of women menopause in the Banyuwangi Hindu community is very active and enthusiastic about doing Kegel exercises by doing them according to existing SOPs where this Kegel exercise intervention indicates seriousness and understanding when exercise training is carried out. So, Kegel exercise intervention can play a role in reducing the symptoms of urinary incontinence as a result of stimulation with its working mechanism of contraction, which will strengthen the pelvic floor muscles which previously experienced relaxation due to factors such as age, number of children, and method of delivery to overcome urine leakage or regain control when urinating.

Conclusion

This research shows that there is a significant influence on the value of urinary incontinence before and after being given Kegel exercises. Where the significance of urinary incontinence lies, the median value is 17.50, which decreases to 7.44, the minimum value of 13 decreases to 4, and the maximum value of 22 decreases to 12. So, Kegel exercise intervention can play a role in reducing the symptoms of urinary incontinence as a result of stimulation with a contracting working mechanism, which will strengthen restore the pelvic floor muscles.

Ethics approval and consent to participate

This study has been granted ethical clearance by the Research Ethics Committee of STIKES Banyuwangi with certificate number 075/01/KEPK-STIKESBWI/III/2023

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References

Adelina, M. R. (2020). Pengaruh Senam Kegel Terhadap Frekuensi Inkontinensia Urine Pada Landia Di Wilayah Kerjas Puskesmas Pijorkoling Kota Padangsidimpuan. *Jurnal Education and Development, 8*(4), 523-526.

Andry, J. (2019). Mukjizat Gerakan Shalat & Rahasia 13 Unsur Manusia. *Journal of Telenursing (JOTING), 1*(2), 304-313.

Asifah, M. (2021). Pengetahuan Wanita Dalam Menghadapi Menopause di Pendukuhan Gowok. *JKM : Jurnal Kesehatan Masyarakat STIKES Cendikia Utama Kudus, 8*, 180-191.

Firyal, F. R. (2017). Hubungan Antara Konsumsi lemak, Obesitas Dan Aktivitas Fisik Dengan Hipertensi Usia Menopause. *Jurnal Ilmiah Kesehatan Media Husada, 6*(1), 47-58. doi:https://doi.org/10.33475/jikmh.v6i1.53

Indarwati, I. &. (2019). Karakteristik Wanita Menopouse Dan Perubahan Pola Seksuaitas Di Desa Kedungan. *Gaster, 17*(1), 20. doi:https://doi.org/10.30787/gaster.v17i1.293

Insani, U. S. (2019). Efektivitas Latihan Kegel dalam Penurunan Kejadian Inkontinensia Urin pada Lansia di Unit Pelayanan Sosial Lansia Purbo Yuwono Klampok Brebes. *Jurnal Ilmu Keperawatan Medikal Bedah, 1*(2), 21. doi:https://doi.org/10.32584/jikmb.v1i2.188

Juliana, D. A. (2021). Hubungan Antara Karakteristik Wanita Dengan Keluhan Pada Masa Menopause Di Wilayah Kerja Upk Puskesmas Perumnas II Pontianak. *Borneo Nursing Journal, 3*(1), 33-38.

Koerniawan, D. S. (2020). Pendampingan Upaya Menurunkan Inkontinensia Urin Bagi Masyarakat Di Talang Betutu Palembang. *JMM (Jurnal Masyarakat Mandiri), 4*(1), 77. doi:https://doi.org/10.31764/jmm.v4i1.1753

Krisnawati, K. (2021). Pengaruh Senam Kegel Terhadap Inkontinensia Urine Pada Lanjut Usia di UPT Pelayanan Sosial Tresna Werdha Magetan. *Universitas Muhammadiyah Ponorogo, 4*(1), 1-23.

Lestari, R. P. (2021). Studi Literatur : Senam Kegel Efektif Menurunkan Frekuensi Berkemih pada Lansia. *Berkah Ilmiah Mahasiswa Ilmu Keperawatan Indonesia, 9*(1), 29-38. doi:https://doi.org/10.53345/bimiki.v9i1.175

Ningsih, M. S. (2021). Pengaruh Kegel Exercise Terhadap Inkontinensia Urine Pada Ibu Postpartum Multipara. *Holistic Nursing and Health Science, 4*(1), 26-33. doi:https://doi.org/10.14710/hnhs.4.1.2021.26-33

Novera, M. (2017). Pengaruh Senam Kegel Terhadap Frekuensi Bak Pada Lansia Dengan Inkontinensia Urine. *Jurnal Ipteks Terapan, 3*, 241. doi:https://doi.org/10.22216/jit.2017.v11i3

Nuari, N. A. (2017). *Gangguan pada Sistem dan Penatalaksanaan Keperawatan.* Yogyakarta: Deepublish.

Potter, P. A. (2016). *Fundamentals of nursing (9th ed.).* Mosby.

Relida, N. I. (2019). Pengaruh Pemberian Senam Kegel Untuk Menurunkan Derajat Inkontinensia Urin Pada Lansia. *Jurnal Ilmiah Fisioterapi, 2*(1), 18-24. doi:https://doi.org/10.36341/jif.v3i1.1228

Ruswati. (2022). Pengaruh Senam Kegel Terhadap Frekuensi Inkontinensia Urine Pada Lanjut Usia. *Jurnal Ilmiah Kedokteran dan Kesehatan, 1*(3), 38-46. doi:https://doi.org/10.55606/klinik.v1i3.586

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Scavello, I. M. (2019). Sexual health in menopause. *Medicina (Lithuania), 55*(9), 559. doi:https://doi.org/10.3390/medicina55090559

Subandiyo, W. E. (2022). Latihan Senam Kegel Dengan Penurunan Inkontinensia Urin Pada Lansia Di Posyandu Lansia Wirasana Purbalingga. *Jurnal Pengabdian Kepada Masyarakat, 5*(3).

Suhartiningsih, S. C. (2021). Pengaruh Senam Kegel Terhadap Inkontinensia Urin Pada Lansia Di Balai Sosial Lanjut Usia Mandalika Mataram. *JISIP (Jurnal Ilmu Sosial Dan Pendidikan), 5*(3), 268-273. doi: https://doi.org/10.36312/jisip.v5i3.2170

Suminar, E. I. (2020). Hubungan Paritas dengan Kejadian Inkontinensia Urin Stres Pada Wanita Usia 40-45 Tahun. *Indonesian Journal Of Professional Nursing, 1*(1), 25-32.

Wahyudi, A. S. (2018). Pengaruh Latihan Senam Kegel Terhadap Frekuensi Berkemih Pada Lansia. *Journal of Chemical Information and Modeling, 53*(9), 1689-1699.