



THE EFFECT OF VASTEN PUKI YOGA ON REDUCTION OF INCONTINENCE IN THE ELDERLY

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ABSTRACT

Urinary incontinence is defined by the international continence society as a condition where uncontrollable urine output is a social or hygienic problem in the elderly and can be objectively proven. This study is looking for a model of gymnastic movements that are suitable for overcoming incontinence in the elderly, in the first year looking for gymnastic movements and getting a Vasten Puki Yoga gymnastics model that can be used as one of the effective interventions to control incontinence, which has been tested on elderly people in 5 elderly homes and get significant results without finding difficulties, which means that the Vasten Puki Yoga gymnastics movement can be used in the elderly. and in the second year the Vasten Puki Yoga gymnastics movement was used for research at Dr. Moewardi Surakarta Hospital. This study used a pre-experimental research design, namely one group pretest-posttest. The population of this study were elderly people who experienced incontinence in nursing homes and poly Geriatric Hospital Dr. Moewardi Surakarta A total of 80 respondents with total sampling technique. The results of the Paired Sample T-test showed an average difference between pre-test and post-test of 8.30 with a significance value (2-tailed) of $0.000 < 0.05$. Yoga Vasten Puki exercise is an exercise designed with light movements for the elderly to reduce the frequency of micturition, because it can enable or activate the pelvic muscles. Yoga Vasten Puki exercise can be effective if done regularly at least twice a day and the movement is repeated 3 times for 4 weeks to reduce the frequency of micturition.

Keywords: elderly; incontinence; puki vasten yoga exercises

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INTRODUCTION

Urinary incontinence by the International Continence Society is defined as a condition of involuntary loss of urine through the urethral or urinary meatus which can result in social and hygiene problems that can be observed (Yang et al., 2023). There are three types of incontinence, namely stress incontinence which is an unconscious loss of urine that occurs suddenly due to several activities such as laughing, sneezing, coughing. The second is Urge incontinence which is the unconscious loss of urine that is preceded by a strong desire to urinate that cannot be prevented. And the third is Mixed incontinence is a combination of stress incontinence and urge incontinence (Yang et al., 2023). Changes in the urinary system of the elderly occur in the kidneys, where the kidneys shrink and the nephrons atrophy. Kidney flow decreases by 50%, tubular function decreases resulting in blood urea nitrogen increasing up to 21 mg%, urine specific gravity decreases, and the kidney threshold value for glucose increases. In the bladder, the muscles weaken, so that the capacity decreases to 200 ml which causes the frequency of micturition to increase. In men, enlargement of the prostate gland causes obstruction of urine flow from the bladder (Denic et al., 2016).

Yoga combines breathing exercises, meditation, as well as poses and movements designed to provide a relaxing and stress-reducing effect, while Yoga Vastin Puki (YVP) is a yoga gymnastics movement is one of the non-pharmacological techniques for dealing with

breathing which gives the effect of regulating breathing so that it can provide comfort. Yoga movements performed while doing yoga exercises at the time of gymnastics are positions that can relax the internal organs of the abdomen or vaginal organs including reproductive organs so that they can be relaxed and flexible. Yoga exercises also serve to increase the efficiency of lung work so that when there is pain / stiffness can be relaxed, oxygen can be channeled to the blood vessels in the reproductive organs when there is vasoconstriction so that the onset of stiffness due to oxygen that is not delivered to the most end blood vessels (Santaella et al., 2011). Yoga exercises can also help in reducing stiffness in the internal organs / vagina, because pain or stiffness of the internal organs themselves occurs due to spasms in the uterine muscles and occurs around the solar plexus (Brown & Gerbarg, 2009).

Elderly is the process of aging is a biological process that cannot be avoided and will be experienced by every human being. Elderly is not a disease but an advanced stage of a life process characterized by a decrease in body abilities. According to the World Health Organization (WHO), a person is said to be elderly when entering the age of 60-74 years. In the elderly, significant anatomical and physiological changes occur due to the reduction in the number and ability of body cells. This causes many health problems experienced by the elderly, including presbyopia, diabetes mellitus, hypertension, asthma, osteoarthritis, osteoporosis, cancer, balance disorders, walking speed, psychological and cognitive disorders (dementia and depression) and urinary incontinence (Rijal et al., 2019).

The aging process will usually be characterized by physical-biological, mental or psychosocial changes. Physiological changes include, among others, a decrease in the nervous system, hearing system, vision system, cardiovascular system, body temperature regulation system, respiration system, endocrine system, skin system, urinary system, musculoskeletal system, mental changes in the elderly, namely personality changes, memory and intelligence changes, psychosocial changes are changes in the way of life (Relida & Ilona, 2020). Based on the above background, the aim of this study was to investigate the effect of vastin puki yoga on reducing urinary incontinence in the elderly.

METHOD

This study used a pre-experimental design with a one group pretest-posttest design. In this design, an initial measurement (pretest) was carried out to determine the initial condition of the level of incontinence in respondents. After that, the intervention was given in the form of YVP exercise, which is a combination of yoga movements with deep breathing techniques accompanied by pelvic muscle tightening, which is done repeatedly for a certain duration. Next, a posttest was conducted to evaluate changes in the level of incontinence after the intervention. This method allows researchers to observe any changes or effects of the intervention on respondents. This study will be conducted from 2023 to 2024, located at Panti Wreda Dharma Bhakti Kasih (PWDK) Surakarta. Respondents in this study are elderly people who experience incontinence and meet the inclusion criteria, namely aged 50-70 years, have no history of heart disease, and are willing to participate in the study. Respondents who are uncooperative or refuse to participate will be excluded from the study. The sampling technique used was total sampling, with a total population of 80 people, consisting of elderly people in PWDK Surakarta and Geriatric Poli Dr. Moewardi Hospital.

The independent variable in this study is the YVP exercise intervention, while the dependent variable is the level of incontinence in the elderly. YVP exercise is defined as a yoga movement that combines deep breathing techniques with repetitive pelvic muscle tightening. The level of incontinence was measured using an observation sheet that recorded the quality

of incontinence before and after the intervention, using a nominal scale. The research instrument includes an observation format to measure the implementation of YVP exercises as well as the questionnaire to observe activities of daily living, depression scale, and incontinence. Since the questionnaire used in this study is a standardized instrument that has undergone rigorous psychometric testing in previous research, additional reliability and validity assessments are not conducted. The instrument has been widely recognized for its consistency and accuracy in measuring the intended constructs, ensuring its appropriateness for this study without the need for further validation. In the first year, the research will focus on the preparation stage, including proposal preparation, licensing, consultation with experts, and development of the YVP movement model. The second year will be the implementation stage, where the YVP exercise intervention is conducted to respondents according to a predetermined schedule.

The data collection process was carried out by asking permission from the Dharma Bhakti Kasih Nursing Home in Surakarta, explaining the purpose of the study to the respondents, and obtaining their written consent. Next, the incontinence level questionnaire was filled in as a pretest, followed by the implementation of YVP exercises for one month three times per week, under the supervision of the researcher. After the intervention was completed, the questionnaire was filled out again as a posttest. The collected data were then analyzed using dependent t-test with the help of SPSS program to see the significant difference between the incontinence level before and after the intervention. This study was conducted by taking into account the ethical aspects of research, such as obtaining approval from the Health Research Ethics Committee of the Poltekkes Kemenkes Surakarta and Dr. Moewardi Hospital. Confidentiality of respondents' identities was guaranteed by not including names in the processed data, but using certain codes. All respondents were given an explanation regarding the research, and their right to refuse or stop participation was fully respected. The results of this study are expected to contribute in developing an effective intervention model to overcome the problem of incontinence in the elderly.

RESULT

Table 1.
Respondent Characteristics Age and Gender

Characteristics	f	%
Age		
50-60 Years	2	3,77
61-70 Years	15	28,30
71-80 Years	24	45,28
81-83 Years	12	22,64
Gender		
Male	5	9,43
Female	48	90,56

Based on table 1, age is dominated by 71 to 80 years, namely 24 respondents (45.28%) and gender is dominated by female gender as many as 48 respondents (90.56%).

Table 2.
Cross-tabulation of incontinence level with respondent characteristics

Characteristics	Incontinence					
	Lightweight		Medium		Weight	
	f	%	f	%	f	%
Age						
50-60 Years	1	5	0	0	1	14,28
61-70 Years	5	25	8	30,76	2	28,57
71-80 Years	9	45	12	46,15	3	42,85
81-83 Years	5	25	6	23,07	1	14,28
Gender						
Male	2	11,76	2	7,14	1	12,5
Female	15	88,23	26	92,85	7	87,5

Based on table 2, mild incontinence at the age of 71 to 80 years was 9 respondents (42.85%), moderate incontinence was also dominated at 71 to 80 years as many as 12 respondents (46.15%) and severe incontinence was the majority at the age of 71 to 80 years. Whereas in gender, it is dominated by the female gender, namely light incontinence is most prevalent in the gender of 15 respondents (88.3%), moderate incontinence as many as 26 respondents (92.85%), and severe incontinence as many as 7 respondents (87.5%).

Table 3.
Cross tabulation of incontinence level with respondent characteristics

Characteristics	Incontinence					
	Lightweight		Medium		Weight	
	f	%	f	%	F	%
Age						
50-60 Years	1	3,85	1	4,55	0	0
61-70 Years	7	26,92	6	27,27	2	40
71-80 Years	13	50	11	50	2	40
81-83 Years	5	19,23	4	18,18	1	20
Gender						
Male	3	10	2	9,10	0	0
Female	27	90	20	90,90	6	100

Based on table 3, mild incontinence at the age of 71 to 80 years was 13 respondents (50%), moderate incontinence was also dominated at 71 to 80 years as many as 11 (50%) and severe incontinence was experienced at the age of 61 to 70 years (40%) and 71 to 80 years (40%), Meanwhile, in gender, mild incontinence was mostly in the female gender as many as 27 (90%) respondents, moderate incontinence was also mostly in the female gender as many as 20 respondents (90.90%).

DISCUSSION

According to the WHO, an elderly person is someone who has entered the age of 60 years and above. The elderly is an age group in humans who have entered the final stage of their life phase (WHO, 2024). This group categorized as elderly will occur a process called the aging process, due to certain factors unable to meet their basic needs both physically, spiritually and socially (Soares, 2013)The results of age distribution are dominated by 71 years to 80 years, namely 24 respondents (45.28%). The results of previous studies can be seen that the research subjects based on the largest average age are elderly people entering the age of 60-74 years, totaling 64 people (77.1%), while the age of 75-90 years is 15 people (18.1%), and the lowest is 45-59 years old, totaling 4 people (4.8%) (Siregar, 2022). Gender is dominated by female gender as many as 51 respondents, the aging process can result in physical, biological, mental and psychosocial changes. Of these physiological changes, the urinary system in the elderly

needs attention because the elderly experience nocturia and incontinence disorders that can affect their quality of life (Jauhar et al., 2021). Changes due to women's nature as women giving birth so that there are disorders of pelvic muscle weakness. In contrast to the male gender as many as 2 respondents.

YVP is an exercise to reduce the frequency of urinary incontinence where urine or BAK is released without the elderly realizing it and in sufficient quantity and frequency. This can lead to health problems or disorders, social problems, psychological, physical, or sexual problems (Jauhar et al., 2021). Kegel exercises are exercises that aim to strengthen the bladder sphincter and pelvic floor muscles, namely the muscles that play a role in regulating micturition and movements that tighten, relax the pelvic muscle groups and genital area, especially the pubococcygeal muscles, so that a woman can strengthen the muscles of the urinary tract (Relida & Ilona, 2020) The results of the YVP gymnastics distribution mean difference between pre-test and post-test was 8.30 with a significance value (2-tailed) $0.000 < 0.05$. Urinary incontinence is an unresolved problem in the elderly, so special treatment is needed to overcome it. One method that can be used is YVP. Urinary incontinence is a common health problem in the elderly, especially women. Urinary incontinence in women can occur due to weakening of the pelvic floor muscles due to aging, menopause, pregnancy, postpartum, and so on (Leslie et al., 2024; National Institutes of Health, 2024).

The results of previous research on the decrease in micturition frequency in literature review research and the results of other studies are due to Kegel exercises or Kegel exercises can tighten the pelvic floor muscles (musculus levatorani) which can maintain the endopelvic layer and nerve integrity which can awaken the pelvic floor muscles to adjust the transmission of abdominal pressure, and increase the ability to resist the urethral sphincter so as to increase the continent period of urine (Relida & Ilona, 2020) This is in line with the research of Ramadilla et al. (2022), Huang et al. (2014) and Sobhgol et al. (2019) that there is an effect of Kegel exercises on the level of urinary incontinence in post-partum mothers with a p-value of $0.000 < \alpha 0.05$. This is also in accordance with the research of which stated that there is an effect of Kegel exercises on the level of urinary incontinence and quality of life among women with urine incontinence (Abu Raddaha & Nasr, 2022; Cho & Kim, 2021; Purba, 2021; Tenfelde et al., 2021; Wieland et al., 2017). The existence of uncontrolled contractions in the bladder causes stimulation to micturate prematurely and incomplete emptying of the bladder (Nurul et al., 2022). Yoga may improve some lower urinary tract symptoms by increasing pelvic floor muscle strength and regulating the autonomic nervous system and central nervous system (Sha et al., 2019). Yoga therapy can effectively manage urinary incontinence, leading to weight loss, reduced pad usage, and improved continence and well-being (Vinchurkar & Arankalle, 2015).

YVP gymnastics research was conducted 1 week 3 times, once the gymnastics was done the gymnastic movements were repeated up to 3 times the gymnastic period, and for 1 month the respondents did gymnastics alone at home at least 2 times a day and were observed every week using an incontinence questionnaire sheet. The results showed that in the Paired Sample Statistic test, it was found that the mean value obtained that the Pretest and Posttest scores had an average difference with the average value of the Pretest score greater than the average Posttest score. the average difference between pre-test and post-test was 8.30 with a significance value (2-tailed) of $0.000 < 0.05$. And it can be concluded that there is an average difference in the Pretest and Posttest score data samples. According to researchers conducted by Suhartiningsih et al. (2021), researchers perform gymnastics on the elderly 2 times a day in 3 meetings for a week and will observe changes up to 6 weeks of treatment. Researchers also

make observations every week and found that changes began to occur in weeks 4, 5 or 6. A weekly session of Holistic Gymnastics can effectively control urinary incontinence, improve quality of life, and reduce lumbar disability in women with Stress Urinary Incontinence (Lacombe et al., 2015).

CONCLUSION

This study shows that YVP exercise is effective in reducing the frequency of urinary incontinence in the elderly. Elderly women predominantly experience incontinence problems due to weakening of the pelvic floor muscles due to aging, pregnancy, and childbirth. YVP exercises help strengthen pelvic muscles, improve urethral sphincter control, and reduce urinary disorders. The analysis showed a mean difference between pre-test and post-test of 8.30 with a significance of 0.000 (<0.05), proving that this method is effective. YVP gymnastics can be routinely applied in elderly facilities as part of rehabilitation interventions to improve the quality of life of the elderly, especially women

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