



The Contribution of Various Diseases on Urinary Incontinence and It's Construction (Kegel Exercise) In Elderly at Sasana Tresna Werdha of Karya Bhakti Ria Pembangunan Jakarta

Merry Delyka¹, Tri Suratmi², Tri Budi W. Raharjo^{3}
^{1,2,3}Indonesia Respati University, Jakarta, Indonesia

* Corresponding author: merry777.md@gmail.com

Abstract. According to the World Health Organization, in 2013 the proportion of the elderly population was 11.7% of the world's total population. Indonesia in 2010 included a large country with the largest number of elderly population in the world, reaching 18.1 million (9.6%). Physiological changes occur in the elderly due to the aging process, in the urinary system there is a decline in function so that it can cause urinary incontinence (IU). As many as 200 million people in the world spend on urinary incontinence. In Indonesia in 2006 around 5.8% of the population used urinary incontinence and the prevalence was higher in the elderly population. Urinary incontinence also depends on the presence of certain diseases that can worsen the condition. Management of non-pharmacological urinary incontinence can be done with Kegel exercises, so that the pelvic muscles become stronger. This study aims to study the contribution of disease to urinary incontinence and its prevention with kegel exercises in the elderly at Sasana Tresna Werdha Karya Bhakti Ria Pembangunan Jakarta in 2018. The research method is quasy experiment with the design of one group pre-test post-test, the number is 62 with a sample of 34 people according to the inclusion criteria. Data collection uses registration books, medical records, databases, questionnaires and observation sheets. Data analysis using chi square. The results showed that the research related to IU after performing Kegel exercises was ARI/ Pneumonia (p value 0.033), Stroke (p value 0.020) and Constipation (p value 0.000). As the conclusion, exercises can reduce urinary incontinence in the elderly and is approved to be done regularly and can be applied in daily exercise activities.

Keywords: Kegel exercises, urinary incontinence, elderly

1. INTRODUCTION

The success of development is the dream of a nation that can be seen from the improvement of living standards and life expectancy (UHH) / life expectancy (AHH). But this increase in UHH can lead to an epidemiological transition in the health sector due to the increasing number of morbidity due to degenerative diseases. This change in demographic structure is caused by an increase in the elderly population with declining mortality and a decrease in the number of births [1]

According to WHO (2015), globally in 2013 the proportion of the population aged over 60 years is 11.7% of the total world population and it is estimated that this number will continue to increase along with the increase in life expectancy. In the Southeast Asia the elderly population is 8% or around 142 million people. In 2050, it is estimated that the elderly population will increase 3-fold [2].

Indonesia is among the top five countries with the highest population age in the world, reaching 18.1 million in 2010 (9.6%) of the population and is predicted to continue to increase to double by 2025 [3].

In absolute numbers, the elderly population in Indonesia which in 1960 only amounted to 4.5 million, increased to 8.0 million in 1980, and became 14.9 million in 2000. The number of elderly people in 2010 was almost the same as number of toddlers [4].

The increase in the number of elderly people causes the threat of Triple Burden, namely the number of babies born is still high, the dominance of young people and the number of elderly people continues to increase, so that comprehensive health care for elderly people is needed by the elderly. The aging process (aging process) will usually be characterized by physical-biological, mental or psychosocial changes [5].

Various kinds of changes occur in the elderly, one of them in the urinary system is a decrease in tone of the vaginal muscles and the urinary tract muscles (urethra) caused by a decrease in the hormone estrogen, causing urinary incontinence, muscles weakening, decreased capacity to 200 ml and cause urinary incontinence [5].

Complaints of urinary incontinence in the elderly become fifth as complaints that are often reported by the elderly [6]. The survey was conducted at the Old Age Polyclinic Dr. Cipto Mangunkusumo Jakarta obtained urinary incontinence rates of 10%, in 2005 it increased to 12%, and increased in 2006 by 21%, then decreased in 2007 by 9%, and increased again in 2008 by 18% [7]. Sumardi, et al. (2014) found that the prevalence of urinary incontinence was higher in the elderly population (22.2%), compared to adults (12.0%) and children (6.8%) [8].

With the increasing incidence of disruption in meeting the needs of urinary elimination in the elderly, effective management is needed so that urinary incontinence experienced can be treated, prevented or can be reduced in severity. One therapy to reduce urinary incontinence is to do Kegel exercises for the elderly [6].

Kegel exercises are exercises to strengthen the pelvic floor muscles which aim to strengthen the pelvic floor muscles, especially the pubococcygeal muscles so that they can strengthen the muscles of the urinary tract, cure the inability to hold urine (urinary incontinence) and tighten and restore muscles in the genital area and anus [9]. After 4-

6 weeks of doing this exercise regularly, there will be less leakage of urine, all of the above exercises will provide good control of the bladder [6].

2. METHODS

This research is a quantitative study to determine whether there is an effect of Kegel exercises on the frequency of urination in the elderly. The research design used was quasy experiment with the design of one group pre-test post-test. The study was conducted at Sasana Tresna Werdha Karya Bhakti Ria Pembangunan Jakarta, held in July 2018 for 2 weeks. The total population of 62 elderly with 34 samples studied was taken based on total sampling according to the inclusion criteria. The study inclusion criteria were the elderly who lived in Sasana Tresna Werdha Karya Bhakti Ria Pembangunan Jakarta, experienced urinary incontinence, good cognitive and motoric functions, and were willing to become respondents and signed an informed consent.

The type of data used in this study are primary data taken through interviews and observations, secondary data taken through registration books, medical records and databases. To find out whether the respondent had urinary incontinence, the researcher used the Incontinence Severity Index (ISI) questionnaire which consisted of two questions with the results of the assessment relating to urinary incontinence that occurred, the results obtained by multiplying the answer score of the first question with the second question score. Analysis of the data used is univariate to determine the distribution of respondents' characteristics and bivariate using dependent t-test.

3. RESULTS AND DISCUSSION

3.1 Univariate Distribution

Table 1. Characteristics of Respondents

| Age | n | (%) |
|-------------------------|----------|------------|
| Middle age | 2 | 5,9 |
| Old | 16 | 47,1 |
| Very Old | 16 | 47,1 |
| Sex | n | (%) |
| Male | 9 | 26,5 |
| Female | 25 | 73,5 |
| Marital Status | n | (%) |
| Not married | 7 | 20,6 |
| Married | 27 | 73,5 |
| Diseases History | n | (%) |
| Pneumonia | | |
| – No | 10 | 29,4 |
| – Yes | 24 | 70,6 |
| CHF | | |
| – No | 30 | 88,2 |
| – Yes | 4 | 11,8 |
| Stroke | | |
| – No | 30 | 88,2 |
| – Yes | 4 | 11,8 |
| Parkinson | | |
| – No | 32 | 94,1 |
| – Yes | 3 | 5,9 |
| Constipation | | |
| – No | 32 | 94,2 |
| – Yes | 3 | 5,9 |
| Osteoporosis | | |
| – No | 18 | 52,9 |
| – Yes | 16 | 47,1 |
| Osteoarthritis | | |
| – No | 10 | 29,4 |
| – Yes | 24 | 70,6 |
| Exercise | n | (%) |

| | | |
|--------------|-----------|------------|
| Sufficient | 20 | 58,8 |
| Deficient | 14 | 41,2 |
| Total | 34 | 100 |

Based on Table 1 it is known that the characteristics of respondents based on age are evenly distributed among the middle old and very old groups, which are 16 people (47.1%) respectively, the sexes of the respondents are mostly women, 25 people (73.5%), status most of the respondents' marriages were married, namely 27 people (79.4%), most of the respondents had more than one history of the disease and the most were ARI / Pneumonia and osteoarthritis which were 24 people (70.6%), sports activities the majority of respondents were adequate, namely as many as 20 people (58.8%).

Table 2. Frequency of Urination Pre - Kegel Exercise

| Frequency of Urination Pre-Kegel Exercise | n | % |
|--|----------|----------|
| Infrequently (< 5x/24hr) | 0 | 0 |
| Moderate (6 – 10x/24hr) | 19 | 55,9 |
| Frequently (>10x/24 hr) | 15 | 44,1 |

Based on Table 2 it is known that most urination pre-kegel exercise frequencies in the elderly are moderate, which are as many as 19 people (55.9%), while the frequency of urination pre-kegel exercise is often as many as 15 (44.1%).

Table 3. Frequency of Urination Pre - Kegel Exercise

| Treatment | Mean | SD | Min – Max |
|----------------------|-------------|-----------|------------------|
| Pre – Kegel Exercise | 10,06 | 2,42 | 6-16 |

Based on Table 3, the mean frequency of urination pre-kegel exercise in the elderly is 10.06 times per day with SD 2.42. The frequency of U urination is at least 6 times per day and at most 16 times per day.

Table 4. Frequency of Urination Post - Kegel Exercise

| Frequency of Urination Post-Kegel Exercise | n | % |
|---|----------|----------|
| Infrequently (< 5x/24hr) | 21 | 61,8 |
| Moderate (6 – 10x/24hr) | 12 | 35,3 |
| Frequently (>10x/24 hr) | 1 | 2,9 |

Based on Table 4, it is known that most of the urination frequencies of post-kegel exercises in the elderly are rare, as many as 21 people (61.8%). There are still elderly people with frequent urination, which is 1 person (2.9%) and rarely 21 (61.8%) after being given kegel exercise, can be caused by a lack of research time which is only carried out for 2 weeks, so that it cannot show optimal results , therefore the elderly are encouraged to continue to do Kegel exercises regularly.

Table 5. Frequency of Urination Post - Kegel Exercise

| Treatment | Mean | SD | Min – Max |
|-----------------------|-------------|-----------|------------------|
| Post – Kegel Exercise | 6,74 | 2,09 | 4-11 |

Based on Table 5, the mean urination frequency of post-kegel exercises in the elderly was 6.74 times per day with SD 2.09. The frequency of urination is at least 4 times per day and at most 11 times per day. This shows that there is a decrease in the frequency of urination in the respondents seen from the mean difference of 3.32 and from the frequency urination often and being the frequency of urination is rare.

3.2 Bivariate Distribution

Table 6. Frequency of Urination Post - Kegel Exercise

| Variable | Mean | SD | P Value |
|------------------------|-------|------|---------|
| Frequency of Urination | 10,06 | 2,42 | 0,000 |
| – Pre | 6,74 | 2,09 | |
| – Post | | | |
| Deviation | 3,32 | 0,33 | |

Based on Table 6, the urination frequency mean before (pre) given kegel exercises was 10.06 and after (post) given kegel exercises 6.74, there was a decrease in the frequency of urination in the elderly by 3.32. Based on the t-test dependent results p value 0,000 <0,05, which means that there is a significant difference between the frequency of urination before (pre) and after (post) given kegel exercises in the elderly, so H_0 is rejected and H_a is accepted, which means this research shows that kegel exercise affects the frequency of urination in the elderly at Sasana Tresna Werdha Karya Bhakti Ria Pembangunan Jakarta.

The results of this study are in accordance with the research of Julianti et al. (2017) who obtained a mean decrease in results after being given kegel exercise as much as 0.26 with p value 0,000 <0.05 which means that there was a significant difference between the frequency of urination in the elderly before and after kegel exercises [10].

Dahlan and Martiningsih's research (2014) obtained a mean measurement of IU pre test symptoms of 2.58, while the results of post-test IU symptom measurements obtained mean 2.92, z values of -3.742 (base on negative rank) with p value 0,000 <0, 05 which means there is an effect of kegel exercise on the decrease in urinary frequency in the elderly [11].

Kegel exercises, if done well and regularly, can build and strengthen pelvic floor muscles to help hold urine and feces [12].

4. CONCLUSIONS

Characteristics of respondents in this study based on balanced age in old people (70-79 years) and very old people (≥ 80 years) ie 16 people (47.1%), the proportion of sex is mostly women, namely 25 people (73.5%), the proportion of marital status is mostly married, which is 27 people (79.4%), the proportion of the history of the disease is mostly ARI / Pneumonia and osteoarthritis which is 24 people (70.6%) and proportion of activity most sports are sufficient (x 3x / week) which is 20 people (58.8%).The average frequency of urination pre-kegel exercises is 10.06. With the frequency of urination at least 6 times per day and at most 16 times per day.The mean frequency of urination post-kegel exercises is 6.74. With a frequency of urination at least 4 times per day and at most 11 times per day. There is a significant difference between the frequency of urination pre-kegel exercises and the frequency of urination N post-Kegel exercises in the elderly (p value 0,000 <0,05). Kegel exercises affect the frequency of urination in the elderly.

ACKNOWLEDGMENTS

Primarily we would thank God for being able to complete this research with success and I would to thank everyone whose involved in this research, like the staffs and the elderly of Sasana Tresna Werdha of Karya Bhakti Ria Pembangunan Jakarta. Also I would to thank my parents whose always support me morally and materially.

REFERENCES

- [1] Ministry of Health of the Republic of Indonesia, "Triple Burden Threatens the Elderly." [Online]. Available: <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20131010/128898/triple-burden-ancam-lansia/>
- [2] WHO, World Health Statistics 2015, vol. 3, no. 2. Geneva: WHO Press, 2015. [Online]. Available: <http://repositorio.unan.edu.ni/2986/1/5624.pdf>
- [3] Central Bureau of Statistics, "Statistics of the Elderly Population," no. 112, 2013.
- [4] United Nations, "World Population Ageing, 2014," Dep. Econ. Soc. Aff. Popul. Div., p. 73, 2014, [Online]. Available: <http://books.google.com/books?hl=en&lr=&id=9WoK26zWCyIC&pgis=1>
- [5] W. Nugroho, Gerontic & Geriatric Nursing, 3rd ed. Jakarta: EGC, 2008.
- [6] D. Boedhi, Textbook: Geriatrics (Health Science of the Elderly). Jakarta: Balai Penerbit, 2011. [Online]. Available: <https://lib.ui.ac.id/detail.jsp?id=128378>
- [7] A. G. Setiati, Siti; Harimurti, Kuntjoro; Roosheroe, Textbook: The Aging Process and Its Clinical Implications, IV. Jakarta: FKUI, 2009.
- [8] R. Sumardi et al., "Prevalence of urinary incontinence, risk factors and its impact: multivariate analysis from Indonesian nationwide survey," Acta Med. Indones., vol. 46, no. 3, pp. 175–182, 2014.
- [9] D. Yuliana, "Types of Urinary Incontinence in the Elderly in Sabai Nan Aluih Sicincin in 2011," 2019.
- [10] J. Karjoyo, D. Pangemanan, and F. Onibala, "The Effect of Kegel Exercises on the Frequency of Urinary Incontinence in the Elderly in the Work Area of the Tumpaan Minahasa Selatan Health Center," J. Nursing UNSRAT, vol. 5, no. 1, p. 107046, 2017.
- [11] D. D. A. Dahlan D.A, "The Effect Of Kegel Exercises On Urinary Incontinence In The Elderly In The Tresna Werda Meci Angi Bima Social Association," J. Health. Prime; Vol 8, No 2 J. Health. PrimaDO - 10.32807/jkp.v8i2.50 , Apr. 2018.