

# Awarding Pelvic Floor Exercise in Elderly Patients with Urinary Incontinence

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Abstract: Changes and degradation in the physical, psychological, social and spiritual well-being of the elderly greatly affects the health status of the elderly. One of the physical changes in the elderly is urinary incontinence. The high incidence of urinary incontinence causes the need for physiotherapy with the *pelvic floor exercise* method. *Pelvic floor exercise* method aims to determine the effect of providing *pelvic floor exercise* to patients with urinary incontinence. This research is a quasi-experimental study using pre-test and post-test one group design. Total samples of 15 people were taken by accidental sampling. Stastical analysis using T-Test. The results obtained p value  $< \alpha = (0,000 < 0.05)$  Which means that there is a significant influence on pelvic floor exercise on patients with urinary incontinence in the elderly at Grandmed Hospital. Suggestion for future researchers are expected to use a larger number of samples from this study and a longer reasearch time from this study so that the results obtained are more optimal.

## 1 INTRODUCTION

According to WHO the age limit of the elderly (elderly) population group aged 60 years is or more. WHO data shows that life expectancy in 2000 was 66 years, increased in 2012 to 70 years, and 71 years in 2013. And the increasing number of elderly population in 2009 was 7.49% of the total elderly population. world population, in 2011 became 7.69% and in 2013 increased to 8.1% of the total population of the elderly population, according to the WHO Age criteria is 60-74 years. (WHO, 2015).

Data in the United States is estimated that around 10-12 million adults experience urinary incontinence. Its severity increases with age and parity. At the age of 15 years or more the incidence is 10%, while at the age of 35-65 years it reaches 12%. Prevalence will increase to 16% in women over 65 years. In multipara there is an incidence of 5%, in women with one child reaching 10% and increasing to 20% in women with 5 children (Collein, 2012).

Whereas in Indonesia the high life expectancy (UHH) is an indicator of the success of achieving national development in the health sector, since 2004-2015 life expectancy has increased from 68.6 years to 70.8 years and is projected in 2030-2035

life expectancy in Indonesia it will reach 72.2 years which Indonesia will enter the aging period (aging), which in 2020 will be estimated that 10% of the population will be aged 60 years and over, according to law No. 13 1998 criteria elderly is 60 years and over (KEMENKES RI, 2016).

Based on the results of records on the Health Profile of the Province of West Sumatra in 2014, the percentage of elderly in West Sumatra increased from 5.45% to 23.9% in 2013, while an increase in the number of elderly that continues to rise from year to year is seen from 2007 data as many as 28,557 people, in 2010 as many as 57,625 people and in 2011 as many as 82,784 people. In 2012-2013 the number of elderly people also increased, reaching 91,573, in 2014 the number increased to 101,173 people, while in 2015 the number of elderly increased to 114,305 people, or reached 9% compared to the previous year (Padang City Health Office, 2015).

Changes and decreases both physically, psychologically, socially and spiritually which are experienced by the elderly greatly affect the health status of the elderly. One of the physical changes experienced by the elderly that needs attention is the urinary system. As a result of changes in urinary function, the elderly experience a disruption in

controlling urine output which is commonly referred to as urinary incontinence (Meiner, 2015).

The results of research from several universities coordinated by the center of aging studies of Indonesian universities (CAS UI) showed the emergence of geriatric syndrome which sequentially in the form of disorders as follows, among others Nutrition 41.6%, Cognitive 38.4% and third urinary disorders / urinary incontinence by 27.8%, subsequent immobilization disorders 21.3% and depression 17.3%. It is estimated that there are more than 200 million people in the world experiencing problems in controlling urine (Elizabeth, 2014).

According to research (Onat, 2014) it is estimated that 25-35% of all late adults will experience urinary incontinence during their lifetime. A survey conducted in various Asian countries found that the prevalence in several Asian countries was on average 21.6% (14.8% in women and 6.8% in men). Compared to the age of production, in the elderly the prevalence of urinary incontinence is higher. The prevalence of urinary incontinence in elderly women is 38% and in men 19%. Urinary incontinence affects individuals of all ages, although it is most often found among the elderly, the condition is not a normal consequence of aging and is often not treatable.

Urinary incontinence was carried out by the Urology Department of the FK-Airlangga University Dr. Soetomo on 793 patients, the results of the incidence of urinary incontinence in men were 3.02% while in women it was 6.79% (Angelita, 2012). In Gorontalo Province, based on data from the Provincial Health Office in 2013, 2,371 elderly had been treated at a hospital with urinary incontinence problems.

Data from epidemiological studies from five countries shows the incidence of urinary incontinence in men aged <39 years by 2.4%, and 10.4% in men aged > 60 years, whereas in women aged <39 years by 7.3% and 19.3 % In women. > 60 years old. The impact of urinary incontinence is estimated to be 15-35% in the population aged 60 years and over who live in the community with a female prevalence twice as large as that of men (Jahromi, 2015).

Continentia conducted a study of the profile of urinary incontinence in Indonesia in 2008 involving six teaching hospitals, namely: Jakarta, Surabaya, Bandung, Semarang, Makassar and Medan. Obtained the results of the prevalence of urinary incontinence as much as 13% of 2,765 respondents with a total population of geriatric (age over 60

years) of 22.2% more than the total adult population (aged 18-59 years) of 12.0% with the conclusion of prevalence Urinary incontinence is found to increase with age (PERKINA, 2012).

Urinary incontinence is a condition in which a person unconsciously experiences urine leakage both in small amounts and in large amounts. This can be experienced by everyone no exception. But generally the prevalence increases with age, especially in women.

Another problem related to urinary incontinence is that sufferers rarely report their condition to health workers. With reasons of shame and it is taboo to discuss with others. As a result, this problem is rarely overcome properly (Potter, 2013). In general, urinary incontinence is caused by changes in the anatomy and function of the elderly urinary organs, obesity (obesity), menopause, old age, lack of activity and vaginal surgery, decreased levels of the hormone estrogen in women at menopause (50 years and over).

Increasing weight and pressure during pregnancy can cause pelvic floor muscle weakness due to pressure for nine months. The delivery process can also make pelvic floor muscles damaged by muscle stretches and supporting tissues and tear of the birth canal, thereby increasing the risk of urinary incontinence (Sankarganesh, Kumar, 2018). Gender factors play a role in urinary incontinence, especially in women due to decreased levels of the hormone estrogen at menopause, there will be a decrease in vaginal muscle tone and urinary tract (urethral) muscle, causing urinary incontinence. The risk of urinary incontinence increases in women with greater body mass index values, a history of hysterectomy, urinary infection, and perineal trauma. Symptoms of incontinence that usually occurs is urinating when coughing, straining, laughing, sneezing, running and feeling a sudden urge to urinate, repeatedly urinating and urinating at night (Setiati, 2014).

The results of Galih Adhi Isak Setiawan's research, About the effect of adding faradik stimulation on pelvic floor exercise to decrease urinary incontinence frequency on urinary incontinence stress in Muhammadiyah Yogyakarta hospital, obtained 0.05 ( $p < 0.05$ ) there was an influence in decreasing urinary incontinence frequency from before and after treatment.

Based on a survey conducted at Grandmed Lubuk Pakam Hospital, the elderly population in the inpatient room at Grandmed Lubuk Pakam Hospital in 4 inpatient rooms were 40 elderly and there are 18 elderly who experience urinary incontinence for 1

month so the results obtained are the prevalence of urinary incontinence as much as 45% of 40 elderly people.

Pelvic floor musculature is composed of several layers with bony attachments to the pubic bone and coccyx. The anterior-posterior fibers are oriented almost horizontally and form the inferior support for the trunk. Laterally, the tissues blend into a fascial layer overlying the obturator internus. Both right and left sides of the muscles contribute fibers to the perineal body located between the vagina and rectum. The Structure and action of the muscles of each layer. That fibers run from anterior-posterior create a superior force toward the heart while the more superficial fibers surround the sphincters and procedure a puckering motion (Kisner, 2016).

Urinary incontinence results from a decrease in pelvic floor muscle strength that can be caused by aging. Another cause by extreme stretching of the pelvic floor tissues is inherent in the process of labour and vaginal delivery. The pelvic floor musculature may also be torn or incised during the birth process. An episiotomy is an incision made in the perineal body. It is automatically considered a second-degree laceration according to the following classification of perineal lacerations (Kisner, 2016).

Episiotomy is common occurred in 33% to 51% of vaginal delivers there is no strong medical evidence supporting its use. In fact outcomes with episiotomy are worse in some cases including pain with intercourse and extension of the episiotomy in particular, the physiotherapy is able to provide education and support for the patient as she explores her options.

The physiotherapy intervention used to handle cases of urinary incontinence is pelvic floor exercise that aims to increase the strength of the pelvic floor muscles. This exercise is done in series with the type of contraction exercises to increase the strength of the pelvic floor muscles so that it can strengthen the function of the external sphincter in the bladder, and make the urethra tightly closed by contracting relaxes that are carried out continuously or repeatedly. This exercise is also very effective for controlling urinary without drugs or surgery (Ma, Liu, 2019).

Visual aids are critical in teaching patients about pelvic floor function. Emphasis should be on both slin/ hammock fibers and orientation of the musculature. To visualize the fibers that run anterior-posterior as well as the circumferential fibers (Kisner, 2016).

From the above background the researcher is interested in conducting research on the Effect of Giving pelvic floor exercise to patients with urinary incontinence in the elderly at Grandmed Lubuk Pakam Hospital in 2019.

## 2 RESEARCH METHODS

This research was conducted at the Grandmed Poly Physiotherapy Hospital, located at Jl Raya Medan, No.66, Lubuk Pakam. The research was conducted in February - July 2018. This type of research is quasi-experimental.

In this study observations and measurements were made before and after treatment to see the effect of pelvic floor exercise on urinary incontinence that can be seen on Figure 1.

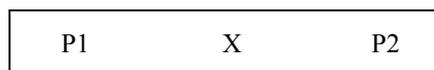


Figure 1: Implementation of research activities.

Where P1 is first observation (*Pretest*) to see urinary incontinence before pelvic floor exercise in the elderly, X is the treatment given pelvic floor exercise and P2 is the second observation (*posttest*) to determine urinary incontinence after pelvic floor exercise according to Figure 2 the number of samples in the study were 15 people who took based on the inclusion criteria and exclusion criteria. Inclusion criteria in the study are elderly who experience urinary incontinence, respondents are aware and can be actively invited to communicate, patients use catheters and pampers. While the Exclusion Criteria are, respondents with impaired consciousness, respondents resign before pelvic floor exercise and elderly with heart disease.

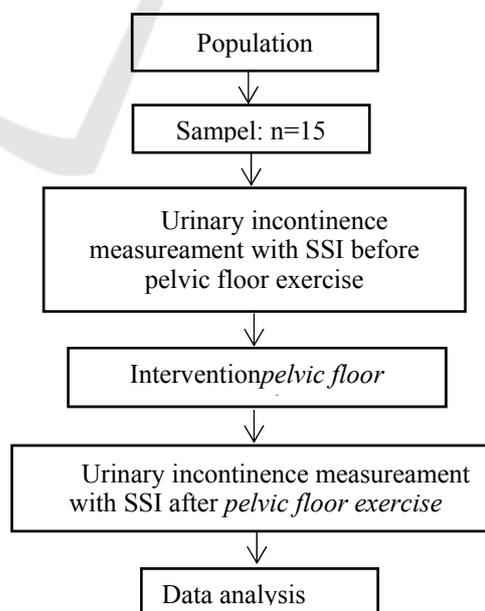


Figure 2: Reaserch Implemtation Flow.

#### Procedure for implementing the Pelvic Floor Exercise method

Pelvic floor exercise is a method of exercise on the pelvic floor muscles that is useful for strengthening pelvic floor muscles, increasing tone of pelvic floor muscles, and making the urethra tightly closed by contracting relaxes that are carried out continuously or repeatedly. This exercise is also very effective for controlling urinary incontinence without drugs or surgery (Rocha, Carvalho, Natal, 2018). Objectives 1) strengthen the muscles that support the bladder and urethra, 2) help maintain muscle control for urination. The therapy starts from:

- Patient preparation, explain to the patient the procedures and goals of Pelvic Floor Exercise intervention, position the patient as comfortable as possible.
- Equipment preparation place or bad must not be too low or high, and must not be too soft, there is a place for training (clean and safe walls).
- Therapy management perform a bridge. bridge (bridge). Start by lying down
- supine and bend both knees, and give a fist-sized gap between the legs. After that, tighten the lower abdominal muscles and raise the pelvis from the floor. Stop when the shoulders and knees form a straight line. Hold for 8 seconds and slowly return your pelvis to the floor. Try not to turn your head when the pelvis is lifted because it can strain your neck. 2) Practice wall squats. Lean against the wall, and open your feet hip-width apart. Take a deep breath and tighten your pelvic floor muscles. Then, lower your back to rub against the wall into a squat position (like sitting in a chair). Hold for 10 seconds, then stand back up, 3) Do a "dead bug crunch" Lie on your back on the floor, bend your knees and soles of your feet at knee height. Extend both arms firmly to the ceiling. Breathe deeply, tighten muscles pelvic floor, and straighten your left hand and left leg in the opposite direction, return to the starting position, and repeat with the right side of your body.
- Pelvic Duration applied: 1) Intensity: Perform 3 repetitions, Duration 15 minutes, Frequency 2 times a week for 1 month of research.

Measurement Method, using structured measurements that defines what will be observed through a careful planning (Nursalam, 2011). Observations were made before (pre-test)

and after (post-test) pelvic floor exercise for patients suffering from urinary incontinence. Measurement using the Sandvix Saverity Index (SSI) Scale. SSI consists of two questions where the results of the study regarding urinary incontinence are obtained by multiplying the score of the first question answer by the score of the second question,

- Skor 1-2 : mild incontinence
- Skor 3-5 : moderate incontinence
- Skor 6-8 : severe incontinence
- Skor 12 : very heavy

### 3 RESULT

Respondents in this study amounted to 15 people who suffer from urinary incontinence who have fulfilled the requirements to become respondents with the provisions that have been made. Characteristics of respondents in this study based on age and gender.

The number of respondents based on age, aged 60-65 as many as 10 people (66.7%), aged 66-70 amounted to 3 people (20.0%) while in 71-74 aged 2 people (13.3%). While based on gender, there are 7 men (46.7%), while there are 8 women (53.3%). Based on the measurement results of urinary incontinence with SSI Before being given Pelvic Floor Exercise Interventions an average value of 5.8 (severe incontinence) was obtained, while the results of measuring urinary incontinence with SSI after being given Pelvic Floor Exercise obtained an average value of 2.5 (incontinence) is Statistical test results obtained p value  $\alpha < (0,000 < 0.005)$ , it can be concluded that there is a significant influence between urinary incontinence before and after being treated with pelvic floor exercise for patients with urinary incontinence in the elderly at Grandmed Lubuk Pakam Hospital.

### 4 DISCUSSION

Based on the results of research conducted on 15 patients aged at most aged 60-65 years, as many as 10 people (66.7%), while at the age of 66-70 years as many as 3 people (20.0%), and at least at the age of 71-65 74 years as many as 2 people (13.3%). This is consistent with the existing theory that the problem of urinary incontinence from changes that occur at that age, changes in the urinary system or the urinary system potentially have a significant

level of importance. Urinary incontinence problems are not caused directly by the aging process, triggers urinary incontinence in the elderly is a condition that often occurs in old age combined with age-related changes in the urinary system (Stanley, 2010).

Patients often consume certain drugs because of their illness. These medications can be one of the causes of loss of bladder control in older people. If this condition occurs, the discontinuation or replacement of the drug if possible, a decrease in the dose or modification of the drug administration schedule (Setiati, 2007)

Based on the results of research conducted on 15 patients the majority of female sex characteristics are 8 people (53.3%) and 7 people (46.7%) men. Urinary incontinence can be caused by complications from urinary tract infections, loss of sphincter control or sudden changes in abdominal pressure. Incontinence can be permanent for example in spinal cord trauma or temporary in pregnant women with a pelvic floor structure weakness can result in urinary incontinence. Although urine incontinence can occur in patients of various ages, loss of urinary control is a problem for the elderly (Engla, 2017).

Weight gain and pressure during pregnancy can cause pelvic floor muscle weakness due to pressure for nine months. The growing fetus places added stress on postural muscles as the center of gravity shifts forward and upward and the spine shifts to compensate and maintain stability. In addition, after delivery, activities involving holding and caring for the baby stress postural muscles. Muscles that require emphasis for strengthening and stretching are listed. General exercise descriptions are listed in respective. Subsequent sections describe adaptations of exercises specific for the pregnant woman. The delivery process can also make pelvic floor muscles damaged due to muscle strain and supporting tissues and tear of the birth canal so that it can increase the risk of urinary incontinence. With a decrease in estrogen levels in women at the age of menopause (50 years and over), there will be a decrease in the tone of vaginal muscles and urinary tract muscles (urethra) (Setiati, 2007)

Urinary incontinence problems are not caused directly by the aging process, triggers urinary incontinence in the elderly is a condition that often occurs in old age combined with age-related changes in the urinary system. Flexibility and stretching exercises are implemented with caution. Remember that connective tissues and supporting joint structures are at increased risk of injury from forceful stresses during pregnancy and the immediate postpartum period because of hormonal changes (Stanley, 2010).

Based on the results of research conducted on 15 people on the measurement of the value of the SSI before giving pelvic floor exercise which has a value of = 5.53 and SD = 2.031.

Changes that occur in the urinary system are a decrease in vaginal muscle tone and urinary tract (urethral) muscle caused by a decrease in the hormone estrogen, causing urinary incontinence, the muscles become weak, the capacity decreases to 200 ml or causes the frequency of BAK to increase. Impaired sphincter function causes the bladder to leak when coughing or sneezing, it can also be caused by abnormalities in the area around the urinary tract, disturbed cerebral function and resulting in bladder contractions, urinary discharge occurs with dilation of the bladder, a lot of urine in the bladder to excessive capacity (Brunner, 2010.).

As we get older, there are some changes in the anatomy and function of the urinary organs, namely: weakening of the pelvic floor muscles due to multiple pregnancies, vaginal delivery (especially long process), heavy lifting, obesity, lack of hormone replacement at menopause, habits incorrect straining, stroke, enlarged prostate gland, etc. (Ellen, 2017).

From research conducted by Arnold, et al (2009) based on the type of urinary incontinence, the incidence of Urinary Stress Incontinence was 58.82%, Urge Incontinence Urine was 11.77% and Mixed Urinary Incontinence was 29.41%. There are three most types of urinary incontinence in women, namely stress urinary incontinence, urge urinary incontinence and urinary mixed incontinence. These three types can be evaluated through history taking and simple clinical judgment.

Urinary incontinence can be caused by complications from urinary tract infections, loss of sphincter control or occurrence abdominal pressure changes suddenly. Incontinence can be permanent, for example in spinal cord trauma or temporary in pregnant women with weak pelvic floor structures can result in urinary incontinence. (Engla, 2017).

Successful strengthening is unlikely without this educational component in fact instructing women in pelvic floor exercises by verbal or written instruction alone caused increased pressure to the appropriate superiorly directed force. Women who have never been pregnant may also present with pelvic floor dysfunction. Excessive straining because of chronic constipation, smoking, chronic cough, obesity, and hysterectomy can contribute to these impairments in any woman. The role of estrogen in the development of incontinence is still unclear, with some studies citing estrogen depletion as a risk factor and others that found a connection between incontinence and

estrogen replacement therapy. High caffeine intake (more than 400 mg/day) is a specific risk factor for urge incontinence (Kisner, 2016).

The use of exercise and biofeedback, including surface musculoskeletal for treatment of pelvic floor dysfunction in a female population is well supported. Musculo can show by electromyography allows for immediate visual and/or auditory feedback to the patient, enhancing motor learning and proprioceptive improvements. It is particularly invaluable for pelvic floor re-education owing to lack of knowledge of the muscles'existence, let alone their function and importance. Specific exercises to address pelvic floor impairments are listed in the exercise (Kisner, 2016).

This is in line with a study conducted by Galih in 2015 in his research on the Effect of Pelvic Floor Exercise with a decrease in Urinary Continuation conducted 5 repetitions, 3 times a week in the result of statistical test  $p\text{-value} = 0.005$  ( $p < 0.05$ ) which it means that there is an effect of giving Pelvic Floor Exercise on Patients with Urinary Incontinence.

Based on the results of research conducted on 15 people on the measurement of the value of SSI after giving pelvic floor exercise which has a value of Mean = 3.60 and SD = 1.882.

Sacroiliac pain is localized to the posterior pelvis and is described as stabbing deep into the buttocks distal and lateral to L5/S1. Pain may radiate into the posterior thigh or knee but not into the foot. Symptoms include pain with prolonged sitting, standing or walking, climbing stairs, turning in bed, unilateral standing, or torsion activities. Symptoms may not be relieved by rest and frequently worsen with activity. Pubic symphysis dysfunction may occur alone or in combination with sacroiliac symptoms, and includes significant tenderness to palpation at the symphysis, radiating pain into the groin and medial thigh, and pain with weight bearing. In addition, excessive separation and translation of the bone may occur. One study reported a four times greater incidence of posterior pelvic pain than low back pain in pregnant women. Pelvic floor exercise is one of a variety of therapies used in the management of urinary incontinence. Pelvic floor exercise is a pelvic floor exercises or exercises that are useful to strengthen the pelvic floor muscles, increase the tone of the pelvic floor muscles, and make the urethra closed tightly by contracting relaxes that are carried out continuously or repeatedly (Klausner, 2003).

This exercise is also very effective for controlling urinary incontinence without drugs or surgery. Pelvic floor exercise is an easy exercise to help increase muscle strength and bladder. If done properly and regularly, this exercise can build and

strengthen pelvic floor muscles to help hold urine and feces (Jahromi, Talebizadeh, Mirzaei, 2015).

Indications Men and women who have incontinence problems (unable to resist urination), Women who have experienced menopause to maintain pelvic muscle strength from decreased estrogen levels, Women who experience uterine prolapse (uterine descent) due to weakening of the pelvic floor muscles, also to women who experience sexual problems.

There are various exercises that you can try, and one of them is a bridge. Start by lying on your back and bend your knees, and give a fist-sized gap between your legs. After that, tighten the lower abdominal muscles and rise the pelvis from the floor. Stop when the shoulders and knees form a straight line. Hold for 8 seconds and slowly return your pelvis to the floor. Try not to turn your head when the pelvis is lifted because it can strain your neck. Exercise must be modified so as not to aggravate the condition. Avoid exercises that require single-leg weight bearing and excessive hip abduction or hyperextension. Teach the patient to activate the pelvic floor and transverse abdominals when transitioning from one position to another in order to stabilize the pelvis.

Based on the analysis of the Paired T-Test Test, the results obtained are Pretest and Posttes Mean = 1.933, with a standard deviation = 0.594. The analysis results obtained  $p\text{ value} = 0,000$  ( $p < 0.05$ ) which means there is

Significant influence between the value of SSI before and after pelvic floor exercise is given to patients with urinary incontinence and this intervention is good to be applied by physiotherapists in patients with urinary incontinence for the development of physiotherapy interventions.

Assumptions according to the authors of this study that pelvic floor exercise is very effective in patients with urinary incontinence because this technique can strengthen pelvic floor muscles by exercising pelvic floor muscles by contracting and relaxing that is done repeatedly so that it can reduce urinary incontinence caused by pelvic floor muscle weakness. Daily activities should be adapted to minimize asymmetrical forces acting on the trunk and pelvis. For example, getting into a car is done by sitting down first, then pivoting both legs and the trunk into the car, keeping the knees together; side-lying is made more symmetrical by placing a pillow between the knees and under the abdomen, and sexual positions are altered to avoid full range of hip abduction. Single-leg weight bearing, excessive abduction and sitting on very soft surfaces should be avoided. In addition, caution patients to avoid

climbing more than one step at a time, swinging one leg out of bed at a time when getting up, or crossing the legs when sitting.

When doing Pelvic floor exercise neurological adaptation, structural adaptation and metabolic adaptation will occur. Neurological adaptations occur by activating motor units that innervate nerves. Structural Adaptation is associated with muscle hypertension or an increase in muscle size. As you know, muscle strength is directly proportional to an increase in muscle size. Muscle hypertrophy results in an increase in the number and size of myofibrils, each of which is formed by contractile units, the sarcomer. Sarcomere hypertrophy results in density in myofibrils. The parallel growth of myofibril causes a tension level (increased tension). This is what causes muscle strength. Whereas in metabolic adaptation there are three complex enzymes, namely: phosphocreatine ATP complex, glycolysis / glycogenolysis complex and lypolysis complex. This enzyme is very influential during training. At the time of exercise these three enzymes have increased so as to increase muscle strength. All of these have an impact on the strength of increasing pelvic floor muscle strength (Radzimińska, Strączyńska, Weber-Rajek, 2018)

Pelvic floor exercise interventions are very effective to help patients with urinary incontinence. From an economic point of view this exercise can also help because pelvic floor exercise training can not only be done in hospitals but exercises can be done at home as a home program. Developing the ability to relax requires awareness of stress and muscle tension. Techniques of conscious relaxation allow the individual to control and cope with a variety of imposed stresses by being mentally alert to the task at hand while relaxing tense muscles that are superfluous to the activity. This is particularly important during labor and delivery when there are times that the woman should relax and allow the physiologic processes to occur without excessive tension in unrelated muscles. Additional relaxation techniques for managing stress. The following guidelines are most effective for the pregnant woman if consistently practiced in preparation for labor and delivery.

## 5 CONCLUSION

Urinary incontinence in the elderly at Gransmed Hospital before most muscle training in the moderate category, after pelvic floor exercise is in the light category, so there is

influence of pelvic floor exercise methods in decreasing urinary incontinence on. Incontinence is a condition in which there is accidental loss of urine through the urethral meatus which can result in social problems and observable hygiene. Pelvic floor exercises with pelvic floor exercise can improve urination with less risk. Health workers have an important role in helping clients with urinary incontinence to restore the function of the urinary system. In addition, health workers can control the activities and eating patterns of respondents.

## REFERENCES

- Dinas Kesehatan Kota Padang. Profil Kesehatan Kota Padang Tahun 2015. Padang: Dinas Kesehatan Kota Padang; 2016
- Elizabeth. (2014). *Analisis Praktek Klinik Keperawatan Gerontik Kesehatan Masyarakat Perkotaan pada Kakek D dengan Inkontinensia Urine di PTWS Budi Mulia 01 Cipayung*. FIK UI: Karya Ilmiah Akhir Ners
- Ellen. (2017). *Intisari Fisioterapi Buku Praktik Klinik*. Jakarta: EGC.
- Engla. (2017). *Efektivitas Inisiasi Bladder Training Terhadap Inkontinensia Urin pada Pasien Stroke non Hemoragik yang Terpasang Kateter di ruang Neurologi RSUD Raden Mattaher Jambi*, diakses tanggal 20 januari 2018.
- Foxman. (2014). *Urinary Tract Infection Syndromes: Occurrence, Recurrence, Bacteriology, Risk Factors, and Disease Burden*. *Epidemiology of UTI Syndromes*, 1, 1-13. doi:10.1016/j.idc.2013.09.003.
- Jahromi, Talebizadeh, Mirzaei, 2015. The Effect of Pelvic Muscle Exercises on Urinary Incontinency and Self-Esteem of Elderly Females With Stress Urinary Incontinency. *Global Journal of Health Science*. Vol. 7, No. 2; 2015.
- Jahromi. (2015). *The Effect of Pelvic Muscle Exercises on Urinary Incontinence and Self-Esteem of Elderly Females With Stress Urinary Incontinency, 2013*. *Global Journal of Health Science*, Vol 7. No.2.
- Kementerian Kesehatan Republik Indonesia. *Profil Kesehatan Indonesia (2015)*. Jakarta: Kementrian Kesehatan Indonesia; 2016.
- Ma, Liu, 2019. Effectiveness of electrical stimulation combined with pelvic floor muscle training on postpartum urinary incontinence. *Study Protocol Systematic Review*.
- Meiner. (2015). *Gerontologic Nursing 5th edition*. USA: Elsevier.
- Onat, dkk. (2014). *Relationship Between Urinary Incontinence and Quality of Life in Elderl*.
- Radzimińska, Strączyńska , Weber-Rajek, 2018. The impact of pelvic floor muscle training on the quality of life of women with urinary incontinence: a systematic literature review. *Clinical Interventions in Aging*

- Rocha, Carvalho, Natal, 2018. Evaluation of the pelvic floor muscles training in older women with urinary incontinence: a systematic review.
- Sankarganesh, Kumar, 2018. Interferential Therapy Versus Pelvic Floor Exercise for the Management of Stress Urinary Incontinence in Women. Journal of Physiotherapy Research.
- Setiati (2014). Buku ajar ilmu penyakit dalam jilid I. VI. Jakarta: InternaPublishing; 2014:1132-53.
- World Health Organization, 2015. Global life expectancy reaches new heights but 21 million face premature death this year, warns WHO. Available at [http://www.who.int/whr/1998/media\\_centre/press\\_release/en/index3.html](http://www.who.int/whr/1998/media_centre/press_release/en/index3.html) diakses pada tanggal 20 juli 2015 pukul 11.00 WIB
- Suhardjo, 2005. Perencanaan Pangan dan Gizi. Bumi Aksara, Jakarta.

