



THE EFFECT OF STRECHING ON DYNAMIC BALANCE IN ELDERLY IN THOSE TRESNA WERDHA SABAI NAN ALUIH SICINCIN

Harmawati,^{1*} Helena Patricia²

^{1,2} Stikes Syedza Saintika Padang

* Corresponding author: harmawati1958 @ g.mail.com

ABSTRACT

Stretching physical exercise that stretches a collection of muscles to get elastic muscles, restore muscle to its length, maintain and restore flexibility. Elderly who are in the Social Institution Tresna Werdha Sabai Nan Aluih Sicincin 80% of elderly people experience a balance disorder, where 8 out of 10 people experience limited range of motion, decreased muscle strength and use motion aids (sticks). The aim of the study was to determine the effect of stretching exercises on dynamic balance in the elderly at the Social Institution Tresna Werdha Sabai Nan Aluih Sicincin in 2018. This type of research is Pre experiment with one-group approach pre-test-post-test. This research was conducted on 27 August to 4 September 2018 at the Tresna Werdha Sabai Nan Aluih Sicincin Home. The population in this study were 110 people. The sampling method was purposive sampling as many as 16 people. Data were analyzed using univariate and bivariate analysis using dependent t-test. The results showed that before giving stretching exercise was 15.50 with a standard deviation 4,227 was the lowest value 11 that is and the highest was 25 and after giving stretching exercise was 13.50 with the standard deviation was 4,604 the lowest value was 8 and the highest was 24. Test results t-test statistics obtained p value = 0,000 means at $\alpha = 0.05$. The results of this study can be concluded that there is an effect of active stretching exercises on dynamic balance in the elderly. It is expected that health workers in the Social Institution Tresna Werdha Sabai Nan Aluih Sicincin will be able to inform example poster, leaflet the benefits of stretching exercises and teach stretching exercises as one of the therapeutic efforts to improve balance, especially for the elderly who experience balance failure.

Keywords: *Stretching, Dynamic Balance, Adulth*

INTRODUCTION

In the everyone, movement get slower and slower, the more muscular body weakened, the power of muskular began to degenerate as complaints muscle pain, stiffness, missing movement, inflammatory and signs as of pain press. Movement get slower and slower, the more muscular body weakened, the power of muskular began to degenerate as complaints muscle pain, stiffness, missing movement, inflammatory and signs as of pain press, accompanied a swelling that is the daily activity effect

disruption (Nugroho and Wahyudi, 2012). The age of life expectancy is increasing especially in the developing world and the developed world. According to the laws of elderly number 13 year 1998 are those who has entered the age of 60 years and older.

According to World Health Organization (WHO) in 2014, stated that this time around the world the number of elderly 600 there are people with the average age 60 years and think in 2025 1,2. will reach billion people. It is estimated that the population of the elderly in Indonesia will



continue to an increase of around people per year. 450.000 in 2025 elderly population in Indonesia to around million people (34,22, BPS, 2015) based on the provincial health office West Sumatra (2014). West Sumatra is one of the provinces that seniors 13,06. percent higher at life expectancy increase from year.

Impairment in the functions of musculoskeletal caused. degenerative change by age or elderly always associated with decreased levels of physical activity, 3 caused by it namely: changes in structure and connective tissue (collagen and elastic), at the joints type and the ability for elderly activity on a significant impact on the structure and function of tissue in, joints pathology can affect connective tissue joints or limitations of limitation for causing functional disability function and the risk to the fall (Chintyawaty, 2009). Hipomobilitas (motion limited) caused by shortening of the soft tissue of adaptive it can result from various disorders or situation. Fall is a major cause and often causing morbidity , mortalitas , reduced function , and too fast entering the wreda institution on the person who is aged 65 years and older .(Kisner et all , 2017) .The experimental work on Nugraha (2015) percentage of elderly that experienced falls in 47.7 % around , while senior citizens that experienced fall outside the house as many as 52,3 % . Less than half seniors. fall report to health services. Only about percent of seniors 22,9 seek treatment to hospital, while 14,6 tudak % prefer to undergo treatment (Nugraha, et all 2015) falls in the elderly are not just caused by one of, but the involvement of internal and external.2004). Of most influential are impaired balance postural caused by muscle power has declined and function. fisual problems (Nugraha. dkk2015).

Divided into two camps balance, a static balance and balance dynamic. A static balance is of the body ability to maintain

balance in fixed position then that when stood on one leg , stood up to the board balance). Dynamic balance is the ability to maintain a balance when in motion .Dynamic balance is the maintenance on the body perform a movement or when standing on an anvil on which it moves (dynamic a standing that will be putting into condition of being unstable .By to raise and maintain a balance needed stretch-and-flex exercise.(Apri Agus. 2012). Rom with elongate structure experienced approach adaptive and become hipomobilitas over time. (Kisner and on , 2017) Research conducted by Nugraha dkk (2015) about training 12 balance exercise improve balance dynamic than balance strategy exercise in seniors in Banjar, Shanti earth village Dauh, kelod puri west in Denpasar. Sample test paired t-test obtained significant differences in the control group of $p = 0,002$ and show an increase in the dynamic balance control of 1,143, this is also in the treatment group found very significant differences with the $p = 0,000$ dynamic balance and show an increase in the treatment of 3,000. Buildings were Tresna Wherda (PSTW) Sabai Nan Aluih Sicincin regional technical is a unit the implementation of social affairs agency of the province of West Sumatra main task of the provision of the service that provides social welfare to elderly institution have been displaced inside and care services , physical and spiritual good so that elderly can live in an appropriate manner .At the present time an orphanage were tresna werdha sabai nan aluih accommodate the rainfall and malayani 110 elderly aged 60 years and older .Based on the study of the beginning of that has been done on independence day on march 16 2018 in Sabai Nan Aluih Sicincin social house , from the observation and interview to 7 people elderly at wisma mountain 3 people a lazy to do the movement of elderly , 4 of 7 people elderly had experienced fall when



walking down to the bathroom and these events 7 people elderly rarely follow gymnastic (sports) .

MATERIALS AND METHODS

The kind of research pre eksperiment by approach one group design pre test and post test is conducting observations (measurement) before and after given treatment of one group .

The study carried out in the senior Tresna Werdha Sabai Nan Aluih Sicincin. The population in this study is the whole elderly people are at the shelter senior Tresna Werdha Sabai Nan Aluih Sicincin while this sample as many as people pre eksperiment 16 research with the approach of one group design pre test and post test is to commit observation (measurement) before and after treatment in one group.

Sampling technique is purposive sampling ethics consent to research, ,anonym, secrecy, justice and inklusivitas and consider benefits and costs caused. Technique primary data collection the data the data taken directly with use observation to see balance sheets increase dynamic elderly. And secondary data data obtained from research carried out in social institution Tresna Werdha Sabai Nan Aluih Sicincin. It is a whole population in research are seniors in social institutions Tresna Werdha Sabai Nan sa Aluih Sicincin and about the sample 16 pre research the eksperiment one group design pre testand post test is conduct observation (measurements) before and after given treatment since one group.

Research procedure determining respondents and give informed consent to respondents were and make a contract with respondents, time measuring the health of the respondents before conducted exercises stretching and measurement of the balance

to respondent to do measurement of balance given, stretching before exercise give a workout stretching to the elder 3 as many as times in one week, next take measurements of the balance back to respondents. Sampling is purposive sampling ethics research, informed consent ,anonym, secrecy, justice and inklusivitas and consider benefits and material losses. The data was the primary data collection techniques such as the data were collected directly using sheets of observation to see an increase in elderly. dynamic balance And secondary data data obtained from pstw research carried out in the senior tresna sabai nan aluih sicincin. The population in this study is the whole elderly people

Univariat data available for analysis done looking for the mean value of the (mean) and standard deviation to get results the measurement of the ability of balance for the elderly before and after the provision of active stretch-and-flex exercise , analytics data available for analysis bivariat to test the influence of , stand by test data distribution shapiro-wilk. Test hypothesis that is used is the test parametric test t test dependen. instrument and materials needed a chair with the parapet and buffer zones of the arm , a stopwatch , the wall research determine respondents and give informed consent to respondents were and makes a contract of time as the proportion of respondents , measuring is not a health respondents stretch-and-flex exercise and measurement of balance to the measurement of balance respondent. To do stretch-and-flex exercise before it was given , give a workout stretching to elderly three times in one week , next take measurements of balance return to respondents . The sampling method of sampling of conduct is purposive

**RESULTS**

The table 1: Average Dynamic Balance Respondents Before Exercise Stretching Active in Social Institutions Tresna Werdha Sabai Nan Aluih Sicincin

Variabel	Mean	SD	Min-Max	N
Pre Test	14.94	4.171	10-24	16

In table 1 got that the average balance among respondents before it was given dynamic stretch-and-flex exercise is 14.94

with standard deviations 4,171 is the lowest score 10 and 24 of the high buildings were Tresna Werdha Sabai Nan Aluih Sicincin.

Table 2 Average Dynamic Balance Respondents After done stretch-and-flex exercise active in social institutions Tresna Werdha Sabai NaA aluih Sicincin

Variabel	Mean	SD	Min-Max	N
Post test	13,75	4.313	9-23	6

In table 4.2 found that the average dynamic balance among respondents after given stretch-and-flex exercise is 13.75 with standard deviations 4,313 value is the

highest and lowest 9 23 in social institutions tresna werdha sabai aluih nan Sicincin.

Table 3: Stretching exercises to dynamic balance among respondents in social institutions Tresna Werdha Sabai Nan Sicincin

t-test	Mean	Std. Deviation	95% Convident interval of the difERENCE	T	df	P value	
			Upper				
Pretest dan postest	1.188	0.544	0.898	1.477	8.733	15	0,000

Based on table 4.3 obtained the difference of average balance dynamic before and after stretch-and-flex exercise given active are 1.188 with standard deviations 0,544 t-test statistical testing or the value of p value = 0,000. It means that there are stretch-and-flex exercise influence is active in dynamic balance among

respondents in Tresna Werdha Sabai Nan Aluih Sicincin .

DISCUSSION

Results the average balance research is not a dynamic respondents stretch-and-flex exercise active in Tresna Werdha institution Sabai Nan Aluih 14,94 sicincin research is in line with the test which has been done by



Cahyoko et al (2016) about the effects of the dynamic stretch-and-flex exercise to balance in elderly. Known on average balance in elderly club orchid coral pilang before and after done treatment stretch-and-flex exercise in pre-test 13,57 in get an average of . Table 4.3 obtained the difference of average balance dynamic before and after stretch-and-flex exercise given active are 1.188 with standard deviations 0,544 t-test statistical testing or the value of p value = 0,000 , it means that there are stretch-and-flex exercise influence is active in dynamic balance among respondents in Tresna Werdha institution Sabai Nan Aluih Sicincin .

Balance divided into two groups namely: a static balance and balance dynamic. A static balance the ability of the body to keep balance in fixed position (when stand on one foot, standing on board balance). Dynamic balance is the ability to maintain a balance when in motion. Dynamic balance is the maintenance on the body perform a movement or standing on the moving dynamic (standing) which will put into condition of being unstable. By to raise and maintain a balance research prior to the average balance dynamic respondents stretch-and-flex exercise active in social institutions Tresna Werdha Sabai Nan Aluih Sicincin 14,94, this study in line by research that has been carried by 2016 Cahyoko et al () on the impact of stretch-and-flex exercise in balance dynamic to elderly. Flattened known flattened balance in elderly club orchid coral pilang before and stretch-and-flex exercise needed .(Agus Apri .2012) . The power of the muscle is the power of a muscle or grup to is produced to able to resist the prisoners through great efforts maximum .The power of musculer a the important thing to everyone , because the power capacity of the muscle is a movement in resolving the duties .After not until is turned 30 , human being would lose

approximately between three and five % muscle tissue total per decade , muscular strength will be reduced gradually as you get age . Divided into two camps: a static balance and balance dynamic .A static balance is of the body ability to maintain balance in fixed position then that when stood on one leg , stood up to the board balance). Dynamic balance is the ability to maintain a balance when in motion. Dynamic balance is the maintenance on the body perform a movement or when standing on an anvil on which it moves (dynamic a standing that will be putting into a knockout

Decline in strength of the muscle does not only disturb the balance but the body and activities related to risks muscle muscle fall dow, power hold the ability to do a job that recurs money or contraction same. Power hold the reduced in stages in accordance with increasing age. Stretch-and-flex exercise.(Agus Apri.2012) . ; muscular strength is the strength of the muscles or grupoto is produced to able to resist prisoners maximum business. Power muskuler is a thing important for everyone, because the muscle is a movement in complete capacity duties. After age 30 years, human being would lose think think 3-5 % per the total muscle tissue, muscular strength will be reduced gradually increasing age as. Divided into two groups namely: a static balance and balance dynamic.A static balance the ability of the body to keep balance in fixed position.According to researchers, before in give stretch-and-flex exercise the average time need dynamic elderly to walk at 3 meters afterward returning to her seat back is 14,94 second the stretch-and-flex exercise after given the time it takes is second, elderly 13,75 if skore & it; 14 second: 87 % no high risk to tumble and if skore gt & ; 14 second: 87 % high risk to fall. Means balance elderly before it was given stretch-and-flex exercise high-risk to fall affected by some factors among them,



the age has declined for the aging power the leg muscles, muscular strength not only disturb the balance but the body and activities related to risks muscle muscle jatuh. daya hold the ability to do a job that recurs money or contraction sama. daya hold the reduced in stages in accordance with increasing age. Exercise. The elasticity of muscle and flexibility, and LGS (scope motion joint).

The results of the study the average dynamic balance after done elderly active 13,75 stretch-and-flex exercise. In line with the test which has been done by Manangkot dkk (2016). The influence of gymnastic senior citizens against the balance of the body on senior citizens in the vicinity of the Dajan Bingin Sading, it was also found that the majority of respondents has a defect of balance light for you to 63% while the gymnastic elderly there after given the majority of respondents having the balance of the body the good 51.9%. The results of the analysis data indicate that there an effect exercise senior citizens against the balance of the body on senior citizens in djan bingin sading with a value of $p=0,001$ (pv cell & it is; 0.05). Give a workout stretching to increase ekstensibilitas soft tissue, rom is in improving flexibility and give structure in hipomobilitas approach adaptive and a factor as a resulting in interference balance (Kisner and 2017)

Stretching the movement active exercised by someone performed with own energy. Nurse give to motivation, and guide clients in carrying out the own is independen according to normal range motion joints (clients ktif). This to train spasticity and muscular strength with manner of using his muscles actively. Joints in move in stretching active are joints in the whole body of head to the tip of a toe by the clients itself is active (Purwoko.2010) Maintaining flexibility and muscular strength, maintain mobility joints, stimulate blood circulation,

prevent kontraktur rigidity and deformities, the injured and preventif. According to researchers, the occurrence of a change after given active stretching exercises, when seen from measurement tugt balance test after practice was held stretching faster in the test balance before it was given a stretch. It is influenced by several factors age, due to the aging decrease the leg muscles, the elasticity and flexibility, and the joint motion LGS, because the active for stretching exercise 3 times a week by the time 20-30 minutes to improve balance in elderly dynamic.

The results of the study there an effect stretch-and-flex exercise of dynamic balance among respondents in social institutions Tresna Werdha Sabai Nan Aluih Sicincin pv: 0,000. This is in line with the research that has been conducted by Nugraha. Et. all (2015).) about training 12 balance exercise improve balance dynamic than balance strategy exercise in seniors in Banjar, Shanti earth village Dauh, Kelod puri west. in Denpasar. Sample test paired t-test obtained significant differences in the control group of $0,002 = p$ And show an increase in the control of dynamic balance 1,143, this is also in the treatment group obtained significant contrast with the $p = 0,000$ and show an increase in the treatment of dynamic balance 3,000. The difference ahead with independent t-test shows differences in meaningful between the control and the treatment where $p = 2,58\%$ 0,000 with the percentage of in

The control group and 6,78% in the treatment group. A balance due to physical etiologi impaired mobility that is a physical limitations on the movements of a body that causes elderly have a high risk to undergo fall. To overcome physical impaired mobility is done by exercise and stretching exercises used to clarify all manufer therapeutic designed to improve ekstensibilitas raising soft tissue



ekstensibilitas and mobility with elongate structure that experienced shortening of adaptive. (Kisner and on , 2017) According to researchers stretching exercises proved to be active not only increased balance to the elderly but can also maintain a balance elderly. This is evident from the research shows that before giving an exercise in stretching time need elderly to walk to the distance 3 yards longer than after stretching. conducted exercises. Seen from a footstep, the power of the leg muscles, scope of the joint motion (lgs), the center of attention and balance better after conducted exercises stretching. Control and 6,78 % on the treatment group. Impaired balance due to etiologi impaired mobility of physical limitations in physical movement which is that the body causing elderly have a high risk to undergo fall. To cope with impaired mobility of physical among others as an exercise which is used for stretching exercises that. Stretch-and-flex exercise is exercise move seoptimal joints and of possible according a person capacity that they are causing pain to a joint moved. The joints movement to increase the flow of blood to dalamkapsul joints. When joints moved, the surface will have to cartilages between both the rubbing against. Cartilages proteoglikans contain many attached to hialuronat acid to hidropohilik, so cartilages contain many water by 70-75 %. The emphasis on cartilages urges water out of matrik cartilages into a liquid sinovia.

CONCLUSION

Based on the statistics of this research result obtained conclusion: . average time dynamic balance on the elderly before giving a stretching exercise is 14,94 in social institutions Tresna Wherda Sabai Nan Aluih Sicincin. Average time dynamic balance on elderly after given exercise stretching is 13,75 at the gym senior Tresna Sabai Nan Aluih Sicincin ..There is the influence of the

exercise of a stretch of dynamic balance on the elderly in social institutions senior Tresna Werdha Sabai Nan Aluih Sicincin (p value = 0,000)

Advice on social house Tresna Werdha Sabai Nan Aluih Sicincin is the result of this research can be material input for a management team for the institution Tresna Wedha Sabai Nan Aluih Sicincin can inform about the merits of stretch-and-flex exercise as posters and leaflets and teaches stretch-and-flex exercise as one of therapy to increase balance especially elderly with the disorder balance dynamic Research nursing next can as of reference material to examine for variable this is different with dynamic balance in elderly

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