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SIT TO STAND TEST OSTEOARTHRITIS PATIENTS

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ABSTRACT

Osteoarthritis (OA) is a degenerative disease found in the elderly. The prevalence of total osteoarthritis OA in Indonesia was 34.3 million in 2002 and reached 36.5 million in 2007. It is estimated that 40% of the population above 70 years old will suffer from OA. Moreover, about 80% of the A patients have limitations in mobility, which in degrees from mild to severe. It leads to a reduction in the quality of life. The development of a simple approach to quantitatively estimating the functional motor performance of various age is crucial to detect the locomotive syndrome (LS) earlier. One available method is the sitting to stand test (STST). Up to recently there a lack of studies that conduct the STST in Indonesia. This study aims to investigate the average and the cut off of the STST scores in OA patients at Ahmad Yani Hospital, Surabaya. We used secondary data, from medical records of the rehabilitation outpatient clinic in 2019 from August to September. We obtain the time of five repetion sit to stand. Then using SPSS 21.0 for analizing the data. The results indicate that the mean and standard deviation of STST scores in osteoathritis patients is 15.72 + 3.45. STST data based on age and its determinants is needed for further research

INTRODUCTION

The Central Statistics Agency predicts the number of population aged 65 years and over in 2010-2035 rose from 5.0 percent to 10.6 percent. This changed in structure resulted in a dependency ratio decreasing from 50.5 percent in 2010 to 47.3 percent in 2035. The decrease in the dependency ratio shows the reduced economic burden for the productive age population (working age) which bears the unproductive age population. These findings will automatically affect the health burden because age is a risk factor that is very closely related to degenerative diseases[1].

Osteoarthritis is a degenerative disease that found specifically in the elderly. According to the World Health Organization (WHO) in 2004, it is known that osteoarthritis affects 151 million people worldwide and reaches 24 million in Southeast Asia. The prevalence of total osteoarthritis in Indonesia was 34.3 million in 2002 and reached 36.5 million in 2007. It is estimated that 40% of the population above 70 years old suffer from osteoarthritis, and 80% of osteoarthritis patients have limited mobility in various degrees from mild to severe which results in reducing the quality of life due to a fairly high prevalence[2]. Primary / generalized osteoarthritis can attack the joints, knees, and hands especially the distal interphalangeal joint (DIP) and proximal interphalangeal (PIP)[3]. This disease causes pain and disability in patients therefore it interferes with daily activities.

One of the conservative treatments for knee osteoarthritis is exercise therapy to improve performance, improving function, increasing local muscle strength and

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endurance, increasing muscle relaxation ability properly, increasing general fitness, all of which play a role in functional capacity. Static or dynamic strengthening exercises can maintain or increase the strength of the periarticular muscles to improve or prevent biomechanical abnormalities and their contribution to joint dysfunction and degeneration. The development of a simple approach to quantitatively estimating the performance of functional motors in various ages is very important for early detection of the locomotive syndrome (LS), one of which is the sit to stand test (STST).

The STST is conducted by arms folded on the chest, participants rise from their chairs and return to a sitting position as quickly as possible. The time to complete five reps is recorded for two separate experiments, with an interval of 1 minute between each trial. STST results or time scores will be very useful for determining the functional status of individual motors as well as for assessing fall risk. In the Mong study (2010), a score of 8.9 + 0.7 was obtained in the young group and 10.8 + 1.7 in the control group (healthy elderly). Whereas in other literature states that the higher the STST score can increase the risk of falling. Based on Buatois, et al., 2008, the cut-off point from the STST score is 15 seconds. A score of 12-15 seconds needs to be reassessed to assess the risk of falling. Until recently, there is a lack of studies that discuss STST in Indonesia, therefore the cut-off point and the average time may need to be determined. There may be different results that can be influenced by differences in culture, demographics, activities, or treatment regimens. Based on the problem above, research is needed to find out what the average STS Test score is, especially in osteoarthritis sufferers in Indonesia.

METHODS

This research is a cross-sectional study by observing STST in the Medical Records of patients at the Medical Rehabilitation outpatient clinic, Ahmad Yani Hospital in Surabaya. This study was done in August-September 2019. Sampling using the accidental sampling method that met the inclusion criteria. The inclusion criteria in this study were that respondents were OA sufferers who were diagnosed clinically by the in charged physician and the results of supporting data, and was tested for STST (had STST data on medical records). The exclusion criteria were: respondents were suffering from physical disabilities or mental disorders during the examination. The measured variable is the STST Score, with the condition that the STST score is the time between sitting to stand for 5x as measured in seconds using a chair and stopwatch. The method of data collection is done by recording the patient's time in completing five sitting repetitions with arms folded on the chest-the participant rises from the chair and returns to the sitting position as quickly as possible. Data analysis was performed using descriptive statistic in SPSS 17.0 program, and kolmogorov- smirnov to test the normality.

RESULTS

There were 44 samples met the inclusion criteria. The characteristics of the samples are provided in Table 1. It can be seen that the distribution of samples in terms of age is evenly distributed between the ages of 50-79 years with the age group 60-69 years dominating (38.6%). The average age is 63.61 years (Table 1) Furthermore, the number of female samples (86.4%) is higher than the male (13.6%). More than half had low back pain (LBP) with OA (52.35), then followed by people with OA as much as 36.4% (Table 1). The patient duration of illness or length of illness samples ranged in the range of 1-5 years (79.5%). Table 1 shows that the average length of illness from 44 samples is 2.2 years with a standard deviation of 1.912.

Table 1 Sample Characteristics

		Frequency (n=44)	Persentage
Age	40-49	1	2.3
	50-59	15	34.1
	60-69	17	38.6
	70-79	10	22.7
	80-89	1	2.3
Gender	Men	6	13.6
	Women	38	86.4
Diagnosis	OA	16	36.4
	LBP	5	11.4
	LBP with OA	23	52.3
Duration of sick	< 1 year	8	18.2
	1-5 year	35	79.5
	>5 year	1	2.3
Shalah (Prayer) position	Normal	25	56.8
	Sitting	17	38.6
	Sitting prostration	2	4.5

From the SPSS statistical test results (Table 2), the minimum value of the STST score is 8.32 seconds, a maximum of 26.24 seconds. The average score is 15.61 seconds with a standard deviation of 3.61 seconds. Furthermore, the data was tested for normality with Kolmogorov-Smirnov, so that the p value was 0.200 (> 0.05) which means that the data was normally distributed

Tabel 2 Descriptive Statistics

	Frequency	Minimum Value	Maximum Value	Mean Value
STS Test	44	8.32	26.24	15.72

DISCUSSION

Osteoarthritis is a disease that is found specifically in the elderly or often called degenerative disease. It is estimated that 40% of the population above 70 years of age suffer from osteoarthritis, and 80% of osteoarthritis patients have limited mobility in various degrees from mild to severe resulting in reduced quality of life due to a fairly high prevalence[2]. This disease causes pain and disability in patients so that it interferes with daily activities.

This is in line with the results of our study which showed that the 60-69 year age group dominated the sample (38.6%). Whereas in the 70-79 age group ranks third with 22.7%. Then it was also seen that 43.1% of the samples had experienced disturbances when doing daily activities, namely prayer. As many as 4.5% of patients could not bow down and then changed into a sitting position, and 38.6%

of patients could only pray by sitting. The average of Visual Analog Scale (VAS) n this study was 6.4 ± 1.66. The highest proportion of VAS scores is 7 (31.8%.) The possibility of this value that causes movement limitations in patients so that interferes with daily activities.

In this study, the STST average value was slightly higher than the other studies, which was 15.7 seconds. In a study conducted by Buatois, et al., 2008, the cut-off point from the STST score was 15 seconds which was a difference of 0.7 seconds longer. In a study conducted by Mong[4], a score of 8.9 + 0.7 was found in the young group and 10.8 + 1.7 in the control group (healthy elderly) where there was a difference of 6.8 seconds longer in the young group and 4.9 seconds longer in the group control (healthy elderly). The literature also states that the STS Test score is influenced by age. The older the age, the higher the score. In the Bohannon[6] metaanalysis the STS Test scores are classified. If the study was dominated by the 60-69 year age, the normal STS Test score will be 11.4 seconds. This score is far below the result study. However, in this study, the STST scores were not categorized based on age. Therefore need further research to confirm.

CONCLUSION

The results of this study indicate that the average of STST scores in Osteoathritis patients at Ahmad Yani Hospital, Surabaya is 15.72±3,45. This score is higher than the other study. It means that there is possibility that OA patient here has worse quality of life

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