

# Jurnal Kesehatan SAMODRA ILMU

| ISSN (Print) 2086-2210 | ISSN (Online) 2827-8739 |

## Balance Examination Of The Dasawisma Group Of Ngajeg, Tirtomartani, Kalasan, Sleman Regency

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### ARTICLE INFORMATION

Received: April, 17, 2023

Revised: April, 28, 2023

Available online: Mei, 25, 2023

### KEYWORDS

balance, menopause, history of falls, pain, history of DM

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### A B S T R A C T

**Background,** Body balance is the ability of a person to control or maintain the position of the body so as not to fall. Balance is a very important component for a person in carrying out daily activities. An estimated 13% of adults reported that balance disorders from 65-69 years of age would increase to 46% in those aged 85 and over. Balance disorder is one of the most important reasons that are the cause of the risk of falling

**The purpose** is to find out the description of factors that affect body balance in the community of Ngajeg Village, Tirtomartani, Kalasan District, Sleman Regency

**Method,** Balance check is carried out on October 7, 2022. The data source is derived from the primary data. Data collection technique by accidental sampling, by measuring the length of standing on the balance board, the examination is carried out on the members of the homestead dasa who are present at the time of the examination by the participant standing with one of his legs and measured for a long time staying in the position of not falling / falling. The measuring instruments used are balance tools, stopwatches, stationery and master tables.

**The results** of 10 participants who took the body balance examination were obtained by all (100%) participants were women. The age of 8 participants (80%) was less than 60 years, as many as 7 respondents (70%) had menopause, while for balance disorders as many as 3 (30%) disorders in 1 foot, 5 (50%) had balance disorders on their 2 feet and 2 (20%) patients were normal. For the history of disease, both falling and pain in the limbs, 7 (70%) respondents experienced balance disorders and experienced pain or had fallen. And as many as 3 respondents (30%) had a balance disorder and a history of DM disease

**Conclusion,** age, menopause, history of falls and pain as well as a history of DM can affect balance disorders

### INTRODUCTION

Balance is one of the basic human needs in order to live independently. Balance is a general term that describes the dynamism of posture to prevent a person from falling. Having a good balance means that the individual can control and maintain body position well and comfortably, both in walking conditions, climbing stairs, standing until it is stationary in place<sup>1</sup>

Balance disorder itself is one of the main problems for an elderly person to come for treatment. This balance disorder also increases the risk of falling. If an elderly person falls, the impacts that can occur include injury, disability, inhumanity and dependence on others, which can lead to death<sup>1</sup>

Indonesia, has six provinces that have an old population structure in other words, the elderly population reaches 10 percent or more, namely: DI Yogyakarta (14.71 percent), Central Java (13.81 percent), East Java (13.38 percent), Bali (11.58 percent), North Sulawesi (11.51 percent), and West Sumatra (10.07 percent)<sup>2</sup>

According to Osoba (2019) that an estimated 13% of adults report that balance disorders from the age of 65-69 years and will increase to 46% in those aged 85 years and over<sup>3</sup>

According to Risangdiptya and Ambarawati (2016) stated that there are many tests to see a person's body balance, including the Standing Stork Test (SST). Standing Stork Test or commonly called one leg stand (standing on one leg) is a measuring instrument to test static balance ability when standing one foot with your eyes closed<sup>4</sup>

Based on interviews with administrators in Ngajeg Village, there has never been a balance check and does not know that there is a balance check.

### METHOD

The balance check was carried out on October 7, 2022. In Ngajeg Tirtomartani Village, Kalasan district of Sleman District., Population was conducted on members of the dasa wisma who were present at the time of the inspection.

#### Data Retrieval Techniques

Data retrieval technique by following the Standing Stork Test Measurement Procedure. Balance measurement with standing

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stork test where respondents were asked to lift 1 foot above the balance chord and measured the length of endurance that can be done. This method is done on the two legs alternately.

The variables to be studied are age, menopausal status, balance disorders, as well as a history of falls and pain in the legs. Data analysis was carried out by frequency distribution on the study sample. With fall categories of more than 15 seconds or less than 15 seconds

Research instruments are balance tools, stopwatches, stationery and master tables containing a table of names, ages, measurement results of the right and left legs, as well as a history of disease and fall as well as a history of pain and DM disease

**RESULTS**

**Table 1. Respondent Characteristic (n=10)**

Characteristics of Respondents	Frequency	Percentage (%)
<b>Age</b>		
< 60 year	8	80
more than 60 year	2	20
<b>Menopause</b>		
yes	7	70
no	3	30
<b>Balance disorder</b>		
normal	2	20
One of legs	3	30
Both of legs	5	50
<b>History of falls and pain</b>		
yes	7	70
no	3	30
<b>DM History</b>		
yes	3	30
no	7	70

Source: Primary Data 2022

Data in table 1. Regarding the respondent's characteristics. It was found that the majority of respondents were under 60 years old as many as 8 respondents (80%), respondents who experienced menopause as many as 7 people (70 %), had balance disorders in 7 respondents (70 %) both 1 foot (30 %) and 2 feet (50%). Meanwhile, as many as 7 respondents (70%) experienced a history of falling and as many as 3 respondents (30%) who had a history of DM.

**Table 2. Balance Disorder and Fall and Pain**

Characteristics of Respondents	Frequency	Percentage (%)
yes	8	100

Source: Primary Data 2022

The data listed in table 2 are respondents with a history of falls and pains. Which gives an idea that as many as 8 respondents (80%) have a history of having fallen and experiencing pain.

**Table 3. balance Disorder and DM History**

Characteristics of Respondents	Frequency	Percentage (%)
yes	3	100

Source: Primary Data 2022

The data listed in table 3 is about balance disturbances and DM reiwat. the table shows as many as 3 respondents who have a history of DM and have a balance disorder

**DISCUSSION**

From the results above, it shows that there are 8 (80%) people who experience balance disorders by standing on 1 leg, which is less than 15 seconds and have a history of falling. This is in line with Mardilah<sup>5</sup>'s research in his research entitled "Identification of body balance disorders in the elderly at the Tresna Whreda

Manula Kendari Social Institution" in 2017 which stated that the incidence of falls will reduce muscle strength and likewise that a decrease in muscle strength and an increase in body mass will result in problems in body balance when standing upright or walking and cardiovascular problems<sup>5</sup>.

This study shows that 7 resonden have experienced menopause (70 %) this is in line with the research of Lupa et al (2017) which states that during menopause there is a decrease in the hormone estrogen in women which will affect changes in the musculoskeletal system. Estrogen plays a major role in bone integrity in women<sup>6</sup>.

In this study, 8 respondents (80%) had a history of falls and pains. This research is in line with the research of Nurmalasari et al (2018) which states Peripheral polyneuropathy is often found in the elderly as a result of the aging process and the presence of comorbidities. This circumstance leads to disruption of daily activities and increases the risk of falls, trauma, as well as a low quality of life. Peripheral polyneuropathy causes damage to the terminal branches of many nerve husks. Peripheral polyneuropathy of the bilateral lower extremities is a frequent variation and generally causes proprioceptive and equilibrium disorders that can be identified by the sufferer's inability to maintain standing balance on one foot for 10 seconds<sup>7</sup>.

The history of DM disease in this study will also affect the balance of the body. This research is in line with Ilmi et al (2020) which states that people with type 2 diabetes mellitus experience insulin deficiency which inhibits the transfer of glucose to cells in body tissues which causes hunger so that there is an increase in glucose in the blood which creates obstacles in perfusion to muscle tissue which will result in muscle tissue not getting enough oxygen and nutrients supply which causes cells to lack material for metabolism, So that the energy produced is reduced which has an impact on the onset of weakness and can further result in muscle atrophy. Muscle weakness causes disturbances in the balance of the body statically and dynamically, causing the body to falter and labile and increasing the risk of falling<sup>8</sup>

The history of pain in this study is in line with research that states In the elderly who experience a decline in cognitive function can occur physiologically (according to age) or pathologically due to diseases in the brain. In the decline of cognitive function there can be a decrease in the ability to maintain balance due to changes in the sensory, motor and central nervous systems. In the sensory system, there will be a process of degeneration of the vestibuler system, in the form of otolith degeneration (demineralization of the macula) so that there is a decrease in the balance response to gravity and linear movement, the process of sensory epithelium degeneration, reduced hair cells and damage to the vestibularis nervus. The degeneration process in the vestibuler system will result in balance disturbances in the elderly<sup>9</sup>

**CONCLUSIONS**

From the results of the discussion above, it can be concluded that there is a picture of factors that affect the occurrence of body balance disorders, namely age as much as 80%, menopause as much as 70%, balance disorders as much as 70%, history of falls and pain as much as 70% and DM history as much as 30%

## ACKNOWLEDGMENTS

1. Wahyu Rocdiat M., S.Kep., Ns., Sp.KJ Dean of the Faculty of Health, Universitas Respati Yogyakarta, which has facilitated the authors to conduct research
2. Nazwar Hamdani Rahil, S.Kep., Ners. M.Kep. Head of PPPM, Faculty of Health, Respati University Yogyakarta, who has facilitated the author so that he can take part in an international seminar at Ahmad Yani University Yogyakarta

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