



Relationship Between Age and Comorbidities and Elderly Gymnastics in *Puskesmas* Ngaringan, Grobogan Regency

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Abstract. The purpose of this study was to determine the relationship between age and comorbidities and elderly gymnastics in *Puskesmas* Ngaringan, Grobogan Regency. This type of research is correlation analysis, in which, it is to analyze the dynamics of the correlation between phenomena, both between risk and effect factors. The approach used cross sectional. It is to know the dynamics of the correlation between risk and effects factors, by approaching, observing or collecting data together. Based on the *Chi Square test* it can be used with a p value $(0.003) < (0.05)$, H_a is accepted, H_0 is rejected. It can be concluded that there is a relationship between age and elderly gymnastics in *Puskesmas* Ngaringan, Grobogan Regency. Based on the *Chi Square test* it can be used with a p value $(0.003) < (0.05)$, then H_a is accepted, H_0 is rejected. It can be concluded that there is a relationship between comorbidities and elderly gymnastics in *Puskesmas* Ngaringan, Grobogan Regency. There is a relationship between age and comorbidities and elderly gymnastics in *Puskesmas* Ngaringan, Grobogan Regency.

Keywords: Age · comorbidities · gymnastic movements

1 Introduction

A degenerative aging process which occurs when people get older will have an impact on changes, not only physical changes, but also cognitive, emotional, social and sexual. Psychological changes and the presence of various diseases usually appear in the elderly. This is because in the elderly there has been a decline in the function of various body organs resulting in cell damage due to the aging process. (Khalifah 2016). Efforts can be made by improving the health of the elderly, one of which can be done with exercise (Ekasari, 2012).

One type of exercises the elderly can choose as physical activity is gymnastics. Doing exercise regularly can slow down or prevent loss of organ function. Gymnastics for the elderly is a form of community participation to achieve an optimal health condition and to make them independent. Elderly gymnastics is a variety of movements that are regular, directed and planned to improve the functional ability of the body to achieve an optimal health condition. The benefits are to help the body stay healthy, fit and fresh and to help eliminate free-radicals in the body (Agustina, 2012).

Table 1. The relationship between age and the elderly Gymnastics

Age	Gymnastic			sig
	Regularly		irregularly	
	f (%)	F (%)	f (%)	
50–59	10 (41.7%)	14 (58.3%)	24 (100)	0.003
60–79	0 (0.%)	16 (100%)	16 (100%)	
Total	10 (25%)	30 (70%)	40 (100%)	

The results of Karmila's 2018 research shows that there is an influence of age on the participation of elderly gymnastics in *Puskesmas Titue* Work Area. Age is one of the determinants of the elderly in activities, the older the age, the more limited activities they are able to carried out. In the study, most elderly who participated in elderly gymnastics were the elderly aged 49–55 years compared to the elderly aged 56 years and over.

2 Method

This type of research is correlation analysis, it is analyzing the dynamics of the correlation between phenomena, both risk factors and effect factors. The approach of *Cross Sectional* is research to study the dynamics of the correlation between risk factors and effects, by approaching, observing or collecting data together (Notoadmodjo, 2018).

The population in this study were 45 elderly who visited *Puskesmas Ngaringan*, Grobogan Regency. The sampling technique used in this study is a total sampling technique, where the researcher uses the entire population as a sample (Sugiyono 2012).

The data collection tool in this study used checklists and filling-in form for the observation sheets of age and comorbidities and the results of observing movements in the elderly.

3 Results

ABivariate Analysis.

3.1 The Relationship Between Age and the Elderly Gymnastics

Based on Table 1; 40 respondents aged 50-59 years who are able to do gymnastics regularly are 10 (41.7%) respondents, while those who are not able to do gymnastics regularly are 14 (58.3%) respondents. There are no respondents aged 60-79 years who are able to do gymnastics regularly, while there are 16 (100%) respondents who are not able to do gymnastics regularly.

Based on *the Chi Square* test, it can be used with a p value $(0.003) < (0.05)$, means H_a is accepted, H_0 is rejected. It can be concluded that there is a relationship between age and elderly gymnastics at *Puskesmas Ngaringan*, Grobogan Regency

Table 2. The relationship between comorbidities and the elderly Gymnastics

comorbidities	gymnastic		total	
	regularly	irregularly		
	f (%)	f (%)	f (%)	
With comorbidities	4 (13.3%)	26 (86.7%)	30 (100%)	0.003
Without comorbidities	6 (60%)	4 (40%)	10 (100%)	
Total	10 (25%)	30 (75%)	40 (100%)	

3.2 The relationship between comorbidities and the elderly Gymnastics

Based on Table 2; 40 respondents with comorbidities who are able to do gymnastics regularly are 4 (13.3%) respondents, and who are not able to do gymnastics regularly are 26 (86.7%) respondents. There are 6 (60%) respondents who do not have comorbidities who are able to do gymnastics regularly, while those who are unable to do regular gymnastics are 4 (40%) respondents.

Based on the *Chi Square test*, it can be used with a p value $(0.003) < (0.05)$, H_a is accepted, H_0 is rejected. It can be concluded that there is a relationship between comorbidities and the elderly gymnastics in *Puskesmas Ngaringan*, Grobogan Regency.

4 Discussion

A. Relationship between age and elderly gymnastics in *Puskesmas Ngaringan*, Grobogan Regency

Based on the *Chi Square test* it can be used with a p value $(0.003) < (0.05)$, then H_a is accepted, H_0 is rejected. It can be concluded that there is a relationship between age and elderly gymnastics in *Puskesmas Ngaringan*.

Old age is identical with declining intellectual and physical abilities, which begins with some changes in life. The time people reach adulthood, they have the ability to give birth to children. Living conditions change, a person will lose this ability and function, they are getting old and die. For normal people, whoever they are, of course they are ready to accept new conditions in every phase of their life and try to adapt to their environmental conditions (Supriani, 2011).

Old age will be followed by a declining of five senses' function and impaired function of the body's organs. People are getting old and there is a degenerative aging process that will have an impact on changes, not only physical changes, but also cognitive, feelings, social and sexual. Psychological changes and the presence of various diseases that appear in the elderly. Generally, the disease that often attacks the elderly is gout. This is because in the elderly there has been a decline in the function of various body organs resulting in cell damage due to the aging process. (Khalifah 2016).

The results of Karmila's research in 2018 showed that there was an influence of age on the participation of elderly gymnastics in *Puskesmas* Titue Work Area. Age is one of the determinants which affected the elderly in activities, the older the age of the elderly, the more limited the activities they carried out. In the study, the most elderly who followed the exercise aged 49–55 years compared to the elderly aged 56 and over whose experienced an increase in body weight.

B. The relationship between comorbidities and the elderly gymnastics in Puskesmas Ngaringan, Grobogan Regency

Based on the *Chi Square* test it can be used with a p value $(0.003) < (0.05)$, H_a is accepted, H_0 is rejected. It can be concluded that there is a relationship between comorbidities and elderly gymnastics in *Puskesmas* Ngaringan, Grobogan Regency.

The declining health condition of the elderly will further reduce their interest in physical activity. Elderly with good physical condition will have greater motivation to take part in elderly gymnastics compared to elderly who have poor physical condition. This is affected by muscle weakness in the elderly and various other unfavorable health conditions that limit the elderly to carry out activities, especially movements in the elderly gymnastics that are followed.

Hong (Perdaningsih, 2011) states that with increasing age, there will be physiological changes in all organs and tissues of the body. Various physiological functions will decrease after the age of 35. In the elderly there are changes and decreases in all organ functions that cannot be avoided, such as the cardiovascular system, respiratory system, nervous system, digestive system, reproductive and endocrine systems, and musculoskeletal system.

Several studies have shown that exercise in the elderly can reduce various kinds of risks (Moniaga, 2013). Sharkey (2013) states that regular physical exercise and exercise at the right portion are physiologically beneficial in increasing muscle mass, helping maintain elasticity of blood vessels and blood pressure and reducing heart work, increasing the diffusion of oxygen from the lungs into the blood and maintain hormonal and reproductive function. Meanwhile, according to Pujiastuti (2013) physical exercise activities can also reach mental aspects including being more confident, happy, feeling fresh, more creative, reducing stress and tension, being more friendly and increasing spontaneity. Thus, physical exercise activities have become a necessity for the purpose of improving one's health and physical fitness status.

5 Conclusions

The results of the *Chi Square* test stated that there was a relationship between age and elderly gymnastics in *Puskesmas* Ngaringan, Grobogan Regency, which was indicated by the p value $(0.003) < (0.05)$, so the results of this study stated that there was a relationship between age and elderly gymnastic in *Puskesmas* Ngaringan, Grobogan Regency, Grobogan Regency.

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