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The Correlation between Waist Circumference and Cognitive Function in Type II Diabetic Mellitus Patients in the Work Area of the Public Health Center Sedayu 2 Bantul, Indonesia

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Abstract

Background: The prevalence of diabetes mellitus continues to increase every year, the increasing in cases of diabetes mellitus that increases occurs in many people with changes in consumption patterns of high fat and low physical activity habits, so that problems of motion tend to be overweight and obese. Obesity has strong relationship with diabetes mellitus, particularly in type 2 diabetes. Obesity occurs when excessive fat accumulation increases health risks. Increased body fat mass, especially in excessive central fat can lead to an increased risk of vascular and metabolic disorders which are risk factors for cognitive decline.

Aims: To identify the relationship between waist circumference and cognitive function in type II DM patients in the Work Area of the Sedayu 2 Public Health Center, Bantul

Methods: Type of research is quantitative research by a cross-sectional approach design. The population in this study were respondents with type 2 diabetes mellitus aged 45 years with a sampling technique using simple random sampling with a total of 110 samples. The instruments of this research used the midline and MMSE (Mini-Mental State Exam) questionnaire.

Results: This study using Kendall's tau correlation analysis with 110 respondents showed that there was a significant relationship between waist circumference and cognitive function in type II DM patients in the working area of the Sedayu 2 Bantul Public Health Center. The results of analysis showed a p-value of 0.000 (<0.05).

Conclusion: There is a significant relationship between waist circumference and cognitive function in type II DM patients in the working area of the Sedayu 2 Public Health Center, Bantul.

Keywords: Cognitive Function, Type 2 DM, Waist Circumference

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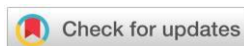
1. Introduction

According to the World Health Organization, diabetes is a chronic disease that occurs when the insulin produced by the pancreas is inadequate, or when the body cannot use insulin effectively (World Health Organisation (WHO), 2008). Moreover, according to the International Diabetes Federation (IDF), 463 million people worldwide had diabetes in 2019. This number is expected to reach 578 million in 2030 and 700 million in 2045 (Kementrian kesehatan republik indonesia, 2020). The 2018 Basic Health Research Report (Riskesdas) states that the DM prevalence increases every year where DKI Jakarta Province occupies the province with the highest prevalence of 3.4% and in the Special Region of Yogyakarta by 3.1% (Pusat Data Dan Informasi Kementrian Kesehatan RI, 2019). Data from the Bantul District Health Office in 2021 showed that the highest number of visits for people with type 2 DM was at the Sedayu 2 Public Health Center in Bantul with 1,552 patients. The latest data were taken at the Sedayu 2 Public Health Center with a total of 2,378 patients (Dinas Kesehatan Kabupaten Bantul, 2020).

The prevalence of diabetes mellitus continues to increase every year. It shows that diabetes is a health problem that needs special attention to be controlled because it is one of the global health threats in Indonesia (Bataha, Fehni Vietryani Dolongseda Gresty, 2017). The increasing cases of diabetes mellitus are caused by changes in high-fat consumption patterns and low physical activity habits so they tend to be overweight and obese. (Sari, Agata, 2017). Several factors that can affect DM are a person's characteristics (age, gender, heredity), nutritional knowledge, stress, lifestyle, physical activity, and nutritional status both obesity and central obesity (Sapang, Puili, 2018).

Obesity has a strong relationship with diabetes mellitus, especially in patients with Type 2 DM. Obesity is an independent risk factor for dyslipidemia, hypertension and cardiovascular disease Obesity occurs when excessive fat accumulation increases health risks (Sari, 2018). A person is called obese if the waist circumference in men > 90 cm and women > 80 cm in women has a 73% possibility of having type 2 diabetes (Adwinda & Srimiati, 2019). Waist circumference is one of the anthropometric indicators that can be used to measure nutritional status, especially in central obesity. Central obesity is the type of obesity most associated with the risk of Met-S (Metabolic Syndrome) (Iniche Tinta, 2019).

Accumulation of fat in the waist will affect the release of several products, namely non-esterified fatty acids (NEFA), cytokines, PAI-1 and adiponectin. Increased lipid can interfere with memory formation in the brain (Iniche Tinta, 2019). Increased body fat mass, particularly in excessive central fat, can lead to an increased risk of vascular and metabolic disorders. It can cause risk factors for cognitive function (Cahyaningrum, 2015). The decline in cognitive function is affected by several factors such as depression, neurology and diabetes mellitus. Diabetes mellitus causes an increased risk of cognitive decline, where the incidence of cognitive function in DM patients is eight times that of the non-DM group. Signs of declining of cognitive function in people with type 2 diabetes mellitus, namely increased memory impairment, decreased exercise speed, impaired attention and decreased executive function

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(Nugroho et al., 2021). Therefore, one of the declines in cognitive function can be affected by central obesity.

METHODS

Study Design

This research is quantitative research with a cross-sectional approach design.

Sample/Participants

This study used simple random sampling, which is a technique of taking samples from the population that is carried out randomly without regard to the strata that exist in the population. Respondents involved in this study were patients diagnosed with type 2 DM without complication, aged ≥45 years, and respondents who lived in the Work Area of the Sedayu 2 Public Health Center Bantul. Meanwhile, the exclusion criteria in this study were patients who were not willing to become research respondents. This study involved 110 respondents with type 2 diabetes.

Instrument

This study uses two instruments, namely the midline to measure the patient's waist circumference and the MMSE (Mini-Mental State Exam) questionnaire to measure cognitive function. The MMSE used was modified from Folstein by the University of North Sumatra (Komalasari, 2014). The MMSE questionnaire is a standard questionnaire that has been tested for validity using the Person Product Moment, the results of which are r 0.357, and the r value in the table is 0.355. This instrument has also been tested for reliability using the Cronbach's Alpha formula with a value of 0.765 and an r-value of 38 in the reliability test of 0.6 in previous studies (Widyantoro et al., 2021). The MMSE examination questionnaire takes 5-10 minutes. The examination consists of 30 questions from the domains of orientation, registration, attention and calculation, memory, and language. The total score of this instrument is 30. The categorization of cognitive function is a score of 25-30 normal cognitive, a score of 20-24 mild impairment, a score of 13-19 moderate impairment, and a score of 0-12 severe cognitive impairment (Kartolo, 2020).

Data Collection

After receiving permission from the Ethics Review Board Committee for Research Involving Human Research Subjects, Alma Ata University researchers asked for data from the

Sedayu 2 Public health Centre to obtain data on type 2 Diabetes Mellitus sufferers. After getting the names of participants selected randomly using the Microsoft Excel application, the researcher met with the participants door to door. The researcher asked the potential participants for their willingness to participate in the research, explaining clearly about the study. The sample then signed the informed consent form. Data were collected through interviews following all items in the questionnaire from 10-18 June 2022. Each interview took 45 minutes.

Data Analysis

Researchers analysed univariate and bivariate data by using the SPSS version 22 application. The researcher used a bivariate analysis test by Kendall's Tau to test the hypothesis.

Ethical consideration

Approval to conduct this research was given by Ethics Review Board Committee for Research Involving Human Research Subjects, with the code ERB KE/AA/VI/10840/EC/2022 Alma Ata University

RESULTS

Characteristics of respondents based on waist circumference and cognitive function in type 2 DM patients.

Tabel 1. Characteristics Distribution of Waist Circumference in patients with Type 2 DM

Gender	Normal		Central Obesity	
	f	%	f	%
Male	13	11,8	16	14,5
Female	44	40,0	37	33,6
Total	**57**	**51,8**	**53**	**48,1**

Tabel 2. Characteristic of Cognitive Function in patients with Type 2 DM (N=110)

Categories	f	%
Normal	38	34,5
Mild Impairment	28	25,5
Moderate Impairment	32	29,1
Severe Impairment	12	10,9

Tabel 3. Association Between Waist Circumference and Cognitive Function in patients with Type 2 DM

Waist Circumference	Cognitive Function											r	p-value
	Normal		Mild		Moderate		Severe		Total				
	f	%	f	%	f	%	f	%	f	%			
Normal (Male)	8	7,3	4	3,6	0	0,0	1	0,9	13	11,8			
Normal (Female)	18	16,4	12	10,9	12	10,9	2	1,8	44	44,0			
Obese (Male)	6	5,5	5	4,5	4	3,6	1	0,9	16	14,5		**0.329**	**.000**
Obese (Female)	6	5,5	7	6,4	16	14,5	8	7,3	37	33,6			
Total	**38**	**34,5**	**28**	**25,5**	**32**	**29,1**	**12**	**10,9**	**110**	**100**			

DISCUSSION

Regarding on table 1 showed that most respondents have central obesity in female respondents as many as 37 people (33.6%), but female respondents have normal waist circumference as many as 44 people (40.0%). On the other hand, 13 (11.8%) male respondents have normal waist circumference and 16 males (14.5%) had central obesity. Table 1 revealed that the majority of female respondents have waist circumferences that have above normal waist circumferences which are influenced by lack of exercise activity and unhealthy eating patterns, and the majority of respondents in this study were women and the majority did not work.

The size of the waist circumference can be affected by lifestyles such as diet, sleep patterns, and physical activity. An unhealthy lifestyle can trigger the onset of type 2 diabetes mellitus. This study is also in line with previous studies. It explained that central obesity based on the excessive abdominal circumference is at risk of developing type 2 diabetes mellitus (Natawirarindry, Stevi, 2022). Central obesity is the trigger for metabolic disorders in the body, one of which can lead to the inability of insulin to enter cells that affecting hyperglycemia. (Natawirarindry, Stevi, 2022) (Silmi, Kinanti, 2018). According to Riskesdas based on Septyaningrum and Martini, impaired glucose tolerance and diabetes are higher in people who are centrally obese. Obesity can cause insulin resistance when the body cannot work properly, causing type 2 diabetes mellitus. Central obesity is a risk factor for type 2 diabetes (Septyaningrum & Martini, 2018).

Table 2 revealed that most respondents have normal cognitive function as many as 34 people (34.5%), and 32 (29.1%) respondents have moderate cognitive impairment. Based on the MMSE questionnaire, most respondents had difficulty answering questions on the place orientation item and had difficulty explaining completely their residential address as well as difficulty in mentioning the designated object. The most of respondents had normal cognitive because the respondents in this study were >45 years old and they haven't experienced a significant decrease in function. This study is in line with the research of Pratiwi et al, that the

majority of people with type 2 diabetes mellitus have impaired cognitive function as much as 64.6%(Siman, Pratiwi, An An, 2016).

As a person's age increases, there can be changes and decreases in anatomical functions such as shrinking of the brain and biochemical changes that can cause a decline in cognitive function. Various homeostatic reserves experience a decrease in vulnerable age, so there can be a decrease in glucose and oxygen in the brain, where oxygen and glucose are the main sources of nutrients in brain metabolism. This interferes with the brain's metabolic pathways which result in impaired cognitive function (Zara, 2021). In patients with type 2 diabetes mellitus, hyperglycemia occurs which can cause organ damage, including microvascular disease, which is characterized by diffuse brain degeneration, demyelination in the nervous system, and the occurrence of nerve fibrosis. It is characterized by apoptosis and hippocampal atrophy. So that there is a decrease in cognitive function in patients with type 2 diabetes mellitus (Faiza & Syafrita, 2020).

Based on the results of the statistical correlation test results from Kendall's tau analysis test, a p-value of 0.000 was obtained, which was smaller than 0.05 (0.000 <0.05) It means that there is a relationship between waist circumference and cognitive function. The closeness of the relationship or the Correlation Coefficient (r) is 0.329. It means that the relationship between the two variables is weak.

Waist circumference above normal is associated with increasing age. Increasing age causes changes in body composition in the form of an increase in fat mass, a decrease in fat mass, and a slackening in bone mass. Epidemiologically, changes in body composition will cause an increase in central fat accumulation in the waist which results in central obesity (Wahid, Billy Dema Justia, 2020). Waldstein's research states that central obesity is associated with various neuroendocrine disorders, one of which is hypercortisolemia. Increased cortisol levels can be correlated with hippocampal atrophy, causing a decrease in memory function (Pradini, 2016).

Decreased memory function in central obesity is more common in peripherally obese patients. This can be caused by central obesity, and greater inflammation, resulting in changes in adipokines, cytokine release, hyperinsulinemia, and advanced glycosylation end products (AGEs), which can interfere with cerebrovascular function. The decrease in adiponectin in central obesity can lead to an increase in cholesterol which causes a worsening of memory function. Central obesity is associated with cerebral atrophy and alba substance, where inflammatory factors are suspect to correlated with changes in cognitive function (Iniche Tinta, 2019).

Total fat mass and central obesity are suspected to be one of the risk factors for decreased cognitive function in the elderly who have diabetes mellitus. Angela's research suggests that measurement of fat tissue through total fat mass and fatty acid distribution is correlated with cognitive decline in elderly obese people with diabetes mellitus. This study proves that total fat mass and central obesity are independent risk factors for cognitive decline in the elderly with DM. (Pradini, 2016).

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Accumulation of fat in the abdomen will cause the release of several products, namely non esterified fatty acids (NEFA), cytokines, PAI-1 and adiponectin. Increased lipid profile can interfere with memory formation (Iniche Tinta, 2019). Escalation body fat mass, especially in excessive central fat, can lead to an increased risk of vascular and metabolic disorders which are risk factors for age-related decline in cognitive function   (Cahyaningrum, 2015).

When the amount of visceral fat is excessive, it will stimulate inflammation in the body that will affect the brain. Visceral fat can also cause unstable hormone production and cause the brain's ability to decline. The more visceral fat, the smaller the brain size. Smaller brain volume can cause a person's cognitive function to deteriorate and can increase the risk of dementia (Pradini, 2016).

According to research by Billy and Verawati, waist circumference has a significant relationship with cognitive function (p=0.016). Central obesity has been studied as a potential risk factor for cognitive decline. Waist circumference that exceeds normal is associated with psychomotor speed, executive function, and attention (Wahid, Billy Dema Justia, 2020). According to research by Billy and Verawati, waist circumference has a significant relationship with cognitive function (p=0.016). Central obesity has been studied as a potential risk factor for cognitive decline. Waist circumference that exceeds normal is associated with psychomotor speed, executive function, and attention (Pradini, 2016). According to study by Billy and Verawati, waist circumference has a significant relationship with cognitive function (p=0.016). Central obesity has been studied as a potential risk factor for cognitive decline. Waist circumference that exceeds normal is associated with psychomotor speed, executive function, and attention

CONCLUSION

In this study, there was a relationship between waist circumference and cognitive function in type 2 DM patients. In this study, it was also found that the waist circumference of central obese patients was quite a lot, so it is suggested that the Sedayu 2 Public Health Centre can pay attention to type 2 DM patients to maintain a healthy lifestyle and can maintain a normal waist circumference to prevent cognitive function decline.

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The Relationship between Resiliency and Quality of Life in Senior Undergraduate Students in Private University

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Abstract

Background: The COVID-19 pandemic significant impact on people worldwide, both on the health system and social life, particularly on education. This study aimed to identify the relationship between resilience and quality of life in senior undergraduate student at the Universitas Muhammadiyah Tangerang during the COVID-19 pandemic.

Methods: The study used descriptive with a cross-sectional approach. Data collection using WHOQOL-BREF and CD-RISC questionnaires which have been tested for validity and reliability. The sample were 100 respondents who were taken by stratified nonrandom sampling. Data were analyzed using Pearson correlation.

Results: The results revealed there are positive and strong correlation between resiliency and quality of life.

Conclusion: Senior undergraduate students who perceived better resiliency more likely to report higher quality of life. It suggests that senior undergraduate students need to maintain their resilience to perceive more satisfaction in QoL during pandemic COVID-19.

Keywords: COVID-19 Pandemic; Resiliency; Quality of Life; Undergraduate Students
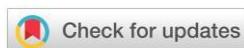
1. Introduction

The 2019 Coronavirus Disease (COVID-19) pandemic is a virus that has had a significant impact on people around the world, both on health systems and social life. The global number of cases infected with COVID-19 as of April 2021 was recorded in 223 countries, with 150,110,310 positive people and 3,158,792 deaths, while Indonesia, 1,668,368 positive people recovered, 1,522,634 and 45,521 people died (KPC, 2021). COVID-19 has been declared a global pandemic status since March 14, 2020 (Ministry of Health, 2020), which has shocked all people in Indonesia and has had a considerable impact, one of which is in the field of education.

Therefore, Indonesia implemented the cessation of face-to-face learning on March 16, 2020, by conducting Teaching and Learning Activities (KBM) at home, online, or online (on a network) through the recommended application, namely zoom, google meet, classroom, and Edmodo (Kemendikbud, 2020) to break the chain of the spread of COVID-19. Moreover, in June 2020, the government enacted the 'New Normal' where changes are made to continue daily activities by cultivating clean and healthy living behaviors. Health protocols are implemented to take efficient steps to eradicate and slow the spread of disease by considering the potential for COVID-19. Face-to-face learning activities can be carried out based on government decisions Number 01/KB/2020, Number 516 of 2020, Number HK.03.01/Menkes/363/2020, Number 440-882 of 2020 concerning guidelines for the implementation of learning in the 2020/2021 Academic Year and Academic 2020/2021 in the Pandemic Coronavirus Disease 2019 (COVID-19).

Furthermore, people must pay attention to requirements such as meeting the learning readiness checklist and guaranteed health protocol facilities, safe transportation access to educational facilities to distance arrangements, and a limited number of students according to the environment that is not exposed to COVID-19 (Kemendikbud, 2020). The Indonesian government is still preparing a virus vaccination program to prevent COVID-19; until January 2021, the vaccine has been carried out, and the government is providing free vaccinations in stages (Ministry of Health, 2021). Until now, the COVID-19 pandemic is still ongoing, so all education is still running in face-to-face learning, and most of the learning is conducted online. Distance learning from home has many limitations, such as internet quotas and unstable network connections, making it difficult for students to understand online learning. For instance, senior undergraduate students must finish their studies by completing an undergraduate thesis. Working on a thesis is different from doing usual college assignments. Students writing a thesis must adapt positively to the pressures and difficulties they face to be more optimistic, persistent, active, and able to overcome the obstacles faced during the thesis preparation process (Mahdi, 2019).

The COVID-19 pandemic has not yet ended, making students, especially, senior undergraduate students might experience changes in their daily lives which have resulted in decreased physical health, reduced social interaction, and limited environment so that their quality of life becomes low. Quality of life is a person's perception of life-related to the individual's goals, expectations, standards, and concerns and includes physical and psychological health, social relationships, and environmental resources (Keener, 2020). Therefore, the COVID-19 pandemic affecting the quality of life in final year students raises

concerns not only on physical health and safety but also on psychological and mental health related to the quality of life so that resilience can recover from these difficulties and problems.

Resilience is crucial for students in this pandemic era to deal with all educational processes both physically and mentally and restore physical health as well as social support for the environment to survive during this COVID-19 pandemic. Having positive disposition to cope to stressful events is one of important psychological trait for individual (Ehrich et al., 2017). To our knowledge, there are still many senior undergraduate students with poor resilience and low quality of life and limited study on resilience and quality of life in senior undergraduate students. Thus, this study aimed to identify the relationship between resilience and quality of life in senior undergraduate students in Private University in Tangerang, Indonesia.

2. Methods

This study used quantitative research with a cross-sectional design. This study uses a descriptive correlational research method to determine the relationship between the independent variable and the dependent variable identified in one unit of time (Dharma, 2011). 115 sample were collected voluntary, and the researcher adhere to anonymity, confidentiality, beneficence research ethic.

Two questionnaires were used, including WHOQOL-BREF (World Health Organization, 2019) to assess quality of life and CD-RISC (Almasyhur, 2021; Ehrich et al., 2017) to assess resilience had been tested for validity and reliability. The reliability for WHOQOL-BREF and CD-RISC in this study were 0.765 and 0.764, respectively.

Preliminary analysis showed that the data distributed normally. Moreover, Pearson Product Moment Correlation Coefficient were used to examine the relationship between resiliency and quality of life.

RESULTS

Table1. Characteristics, Resiliency, and Quality of Life Senior Undergraduate Students in Tangerang (N=100)

Characteristics	n	%
Gender		
• Men	31	31
• Woman	69	69
Resiliency		
• Good	44	44
• Poor	56	56
Quality of Life		
• Good	43	43
• Poor	57	57

Table 2. The Relationship between Resiliency and Quality of Life

Variable	Resiliency
	r
Kualitas Hidup	.725**

**p-value $< .001$

DISCUSSION

The results showed that from 100 respondents who had a high quality of life, some of the respondents reported poor quality of life (43.0%) and poor quality of life were perceived by most respondents (57%). Moreover, there is a relationship between resilience and quality of life for senior undergraduate students at Universitas Muhammadiyah Tangerang during the COVID-19 pandemic. The results of this study are consistent with study of Keener (2020) conducted, showing a significant relationship between resilience and quality of life of students in the Philippines to the impact of COVID-19. Moreover, it supported with the study of Rahmawati (2019), revealed that resilience can improve the quality of life.

Resilience is the capacity to face and overcome difficulties with personal transformation and growth; education must understand the determinants of positive developmental reactions in dealing with stressful and emotionally demanding situations (Tempski, 2015). Resilience has a protective effect on the quality-of-life impacts related to critical areas of mental, physical, social, and environmental health in the context of the COVID-19 pandemic; Thus, understanding the factors and developing interventions that build resilience is a focal point for student actions in dealing with life (Guillasper, 2020).

In general, quality of life is a person's perception of their individual goals, expectations, standards, and concerns regarding physical and psychological health, social relationships, and the environment. The COVID-19 pandemic has changed student life into many problems in online learning factors, so it is necessary to protect resilience to overcome online learning to increase the success of stressful academic and professional lives (Keener, 2020).

Senior undergraduate student might experience stressful events due to completing their degree; hence Kamilia et al. (2018) emphasized the important of motivation for undergraduate students. Also, Peplau belief that people's perception about their quality of life is depend on life situation (Peplau, 1994) and well-being could be achieved through adequate interpersonal relationship (Elon et al., 2021). COVID-19 Pandemic could add the stressful event for senior undergraduate student who working on their final project, such as undergraduate thesis. For instance, indirect consultation with advisor as one of main strategy to writing their thesis would be a challenge for interpersonal relationship between advisee and respective advisor. Therefore,

maintaining the psychological resilience of undergraduate students is important to improve their quality of life amidst stressful events such as pandemic.

CONCLUSION

This study found that better resiliency perceived are more likely to report higher quality of life in senior undergraduate students. However, some limitation needs to be addressed, such small sample size for generalization of the results to senior undergraduate students in private university. Future study could use the finding as baseline data for developing intervention considering resiliency to maintain domains of quality of life.

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Social Support Improves the Quality of Life Among Institutionalized Older People in

The Social Protection Center, Banten Province, Indonesia

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Abstract

Background: Optimal quality of life is the hope of all older people. In the life span of older people, they experience a period where they are faced with a difficult situation that results in stress or even a traumatic bad experience. Several supporting factors are needed for older people to achieve optimal quality of life.

Aims: This study was aimed to determine the predictor factors of the quality of life of institutionalized older people.

Methods: This study used a correlation analysis design and a cross-sectional approach. Samples in this study were 50 older people at the Banten Social Protection Center. Data was collected by using questionnaires consisting of WHO Quality of Life, Barthel Index, HAM-A, and social support.

Results: This study found that there was a strong relationship between quality of life with stress levels ($p < 0.01$), level of dependence ($p < 0.05$), and social support ($p < 0.01$). The result of further analysis using multiple regression found that social support (Beta = 0.345, $p < 0.05$) was found to be a predictor of quality of life for institutionalized older people.

Conclusion: Quality of life of older people can be achieved to be optimal by increasing the social support surrounding. Thus, this study suggests the Banten Social Protection Center can facilitate to seek social support from both external and internal.

Keywords:
Quality of life, institutionalized older people, social protection center, Banten.

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INTRODUCTION

High quality of life is the hope of everyone regardless of age. During life span, there always a period of difficult conditions, so it can lead to stress or even traumatic experiences. Older people are known as a vulnerable group to have problems related to health both physically and psychosocial (Beales & Tulloch, 2013). High quality of life enables older people to overcome stressors so that it can maintain the health status of older people (Lavretsky, 2012).

The dependency level of self-care among older people determined their physical and psychological health. The inability of self-care enables older people to have depressed, especially older people who live in a nursing home (Jumita et al., 2012). One study found that the quality of life of older people is determined by the ability of self-care. This self-care can be either independent, with help, or aided by a caregiver (Choowattanapakorn et al., 2016). Another study stated that older people who live with families have a better quality of life than the elderly who live in nursing homes. This is related to self-care where the older people who live with the family get more attention in self-care (Coon, 2012).

One of the important factors that influence the quality of life of older people is social support. Social support obtained by older people is from families, relatives, peers, and the community (Coon, 2012; Perrig-Chiello & Hutchison, 2010). Besides, women older people show a better quality of life when they get good social support compared to men older people. Furthermore, when social support takes the form of religious activities, the quality of life arises due to the spiritual resilience that is built on a spiritual approach (Choowattanapakorn et al., 2016; Gulbrandsen & Walsh, 2015; Syukrowardi et al., 2017).

Regarding the population of older people, developing countries will achieve a 250% increase, while developed countries 71% respectively (Kementerian Kesehatan RI, 2017). One of the developing countries that will contribute to increasing the number of older people in the world is Indonesia (Kementerian Kesehatan RI, 2017). Based on projected data on older people population in Indonesia, it is estimated that in 2017 around 23.66 million people or 9.03% of the total population of Indonesia, which amounts to 262 million people. The increasing of older people predicted by 2020 (27.08 million), in 2025 (33.69 million), in 2030 (40.95 million), and 2035 (48.19 million) respectively. From the results of these statistics, Indonesia belongs to an old structured group of countries. This is because the number of elderly people in Indonesia is more than 7% of the total population (Kementerian Kesehatan RI, 2017).

Morbidity rates are used as an indicator of population health status. According to World Health Organization (WHO), the delay in diagnosis and unhealthy behavior of older people results in physical illness, which affects mental problems (WHO, 2017.). Also, health problems and poverty factors contribute to psychosocial problems in older people. According to National Team for the Acceleration of Poverty Reduction of Indonesia (TNP2K) states that 45% of older people live with families and 40% of them being at a low economic level (TNP2K, 2017).

Furthermore, 67% of older people living with low economic families have neglected categories (TNP2K, 2017). Besides, data from the Ministry of Social Affairs, the number of older people

who are prone to neglect is 4,658,280 people and displaced 2,851,606 people. This number also occurs in Banten Province, which is around 14,647 elderly who are included in the abandoned category (Banten, 2016).

According to data taken from the profile of Social Protection Center, Banten Province., the number of neglected older people registered to stay in the nursing home of Social Protection Center, Banten Province from year to year continues to increase. However, this is not following the acceptance quota of neglected older people who can live in there which can only accommodate a maximum of 60 persons. Physical and psychosocial problems in neglected older people living in the nursing home of Social Protection Center, Banten Province are things that must be addressed (Banten, 2016). In this phase, the older people are very vulnerable to having psychosocial problems, so increasing the ability of self-defense in facing difficult situations will help older people achieve a high quality of life.

METHODS

Study Design

This study design was descriptive correlational with cross-sectional.

Sample/Participants

Samples were 50 older people who live in the nursing home of Social Protection Center, Banten Province. All samples were recruited by using the purposive sampling technique with inclusion criteria including the ability to communicate verbally and willing to be a respondent.

Instrument

Data were collected by using standardized questionnaires including WHO Quality of Life with the reliability test showed Cronbach alpha 0.84, and validity test showed correlate at around 0.9. (WHOQOL Group, 1998). Barthel Index with the reliability test showed Cronbach alpha 0.8, and validity test showed adequate at around 0.857 (Sponton et al., 2010). Hamilton Anxiety Rating Scale with the reliability test showed Cronbach alpha 0.756, and validity test showed range at 0.529 to 0.727 (Ramdan, 2018), and the ENRICHD Social Support Instrument with the reliability test showed Cronbach alpha 0.94, and validity test showed all items and item-total score ($p < 0.001$) (Vaglio et al., 2004).

Data Collection

Since the respondent was older people and data collection was taken by using a questionnaire, so to minimize the bias information, the researcher also read aloud each item of the question of the questionnaires. Thus, all pieces of information were directly validated by the respondent.

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Data Analysis

In this study, data analysis used was Pearson correlation to investigate the relationships between quality of life with the level of dependency, stress level, and social support. Further analysis was multiple regressions to investigate predictor factor that can predict the quality of life of older people.

Ethical consideration

Ethical consideration in this study was based on considering the number of questions and statements in the questionnaires, and the limited cognitive abilities of the respondents, the time of collecting data taken 30 minutes per day for three days in each respondent. In addition, the respondents who were willing to become respondents were given the freedom to choose the time of data collection. Respondents were also given the freedom to refuse to answer questions if they were perceived as disturbing the respondent's comfort, and in the end, the respondent's data would not be used in the study.

RESULTS

This study showed that the mean quality of life among respondents was 62.2, the level of stress was 29.1, the level of dependency was 125.3, and social support was 36.9.

Tabel 1. Level of quality of life, stress, dependency level, and social support of respondents (N = 50).

Variable	Min	Max	Mean	SD
Quality of life	46	84	62.2	9.4
Level of stress	13	59	29.1	11.7
Level of dependency	115	130	125.3	5.7
Social support	19	64	36.9	13.1

As shown in table 2, there found that stress level (r = -0.444, p <0.01), dependency level (r = 0.354, p <0.05), and social support (r = 0.490, p <0.01) were associated to the quality of life of older people at nursing home of Social Protection Center, Banten Province. To investigate more about factors that predict the quality of life of older people, further analysis was carried out by using multiple regressions which were presented in table 3.

Tabel 2. The relationships between quality of life with stress, dependency level, and social support of respondents (n = 50).

No	Variables	1	2	3	4
1.	Level of stress	-	-0.417**	-0.427**	-0.444**
2.	Level of dependency		-	0.552**	0.354*
3.	Social support			-	0.490**
4.	Quality of life				-

* p < 0.05; ** p < 0.01

Tabel 3. Predictor of quality of life (N = 50).

Variables	B	Beta	t	SE
Level of stress	-0.211	0.107	-1.983	0.107
Level of dependency	0.074	0.048	0.318	0.233
Social support	0.274	0.345	2.267[*]	0.121
R^2	0.309			
Adjusted R^2	0.264			
F	6.862[**]			

** $p < 0.01$, * $p < 0.05$

Based on the results of this study, all associated factors of the quality of life produced R^2 = 0.309, adjusted R^2 = 0.264, F = 6.862 with significant alpha at level <0.01. by judging from B value (Beta Standardized), it can be seen that social support (Beta = 0.345, p <0.05) was found to be a predictor factor of the quality of life. This means that if the social support score increases by 1 point, it will impact the quality of life score of 0.345 if other variables are controlled. In addition, all variables analyzed in this multiple regression analysis accounted for 26.4% of the variance of quality of life.

DISCUSSION

Older people who live in a nursing home are inseparable from psychological problems. Although their daily needs are fulfilled because they are borne under the responsibility of the country, the decreasing functions of organs, the tendency to experience psychological problems will easily approach them (Wafroh et al., 2016). Identification of factors that affect the quality of life in older people is very important so that the improvement of the quality of life can be improved properly. These factors are stress level, level of dependence, and social support (Choowattanapakorn et al., 2016; Tribess et al., 2012; Wafroh et al., 2016).

Older people who have low-stress levels tend to have a good quality of life. This is consistent with previous research that stated that older people who can manage stress well, can better manage life, fulfill their basic needs, and impact on improving to the high quality of life (Mauceri & Marco, 2014). In addition, the lower the level of dependence, the better the fulfillment of basic needs can be met. Following the statement of the previous study that older people with physical activity and the ability to take good care of themselves have a high quality of life (Choowattanapakorn et al., 2016). Determination of the quality of life of older people in nursing home of Social Protection Center, Banten Province is possible to be donated from factors of self-care and fulfillment of basic needs such as eating, drinking and toileting carried out independently, following routine gymnastics and religious activities.

Social support of older people in the nursing home of Social Protection Center, Banten Province was obtained from fellow friends, nurses, and social workers. Fewer older people still have relatives who visit them irregularly. The results of the findings in this recognized that the quality of life can also be obtained from social support from the closest person. As stated in the previous study that supports coming from anywhere will help improve the lives of the elderly, so that at the end of their lives they have a good quality of life (Perrig-Chiello & Hutchison,

2010).

In this study, there are three factors related to the quality of life of older people including stress level, independency level, and social support. This study found that the most influential factor in improving the quality of life of older people was social support. No matter how small social support comes from, that will increase the social support of older people. This social support will be perceived by older people such as how caring people around themselves are, understanding their needs, and responding to their complaints (Niskanovic & Siljak, 2015).

CONCLUSION

This study showed that there are three significant factors related to the quality of life of older people. Stress level, level of dependence, and social support. However, from these three factors, social support is a predictive factor in improving the quality of life of the elderly at Social Protection Center, Banten Province. If the score of social support increases by 1 point, it will impact the elderly quality of life score of 0.345 with other variable requirements, namely stress level and dependency level controlled. It is highly recommended that Social Protection Center, Banten Province provide social support to the elderly because it will determine their quality of life. Although this study has reached the goals of research question, however the total respondents were concerned as a small sample size. Therefore, future research should be a large sample size.

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Depression In Adolecents

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Abstract

Background: A mental disorder that can be suffered by all is depression. The health burden brought on by depression makes depression an important public health issue.

Objective; this study was a descriptive survey on depression in adolescents on Berakit village, Riau Islands.

Method: a descriptive design was employed 65 participants by simple random sampling at Berakit Village, Bintan, Riau Island. Depression Anxiety Stress Scale (DASS) were use as the instruments. Data was analyzed by using descriptive statistics.

Results of this study found that most mean the range score in screening for depression was normal (83%). Most most mean the range score in screening for anxiety adolescent was early anxiety (22%). Moreover, the most of participant rate middle stress (24%).

Conclusion these finding indicated that there are depression cases in further intervention to promote management stress to adolescent in seacoast.

Key words: Depression, anxiety, adolescent
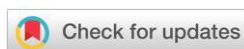
INTRODUCTION

A mental disorder can be suffered by all is depression. There are many factors that influence depression in adolescents (WHO, 2021). However, according to (Keliat, 2016), depression occurs due to various factors of low self-efficacy. Depression is a medical disorder that affects feelings and thoughts in the form of continuous feelings of sadness and a sense of loss of interest before doing an activity (agung, I, Ayu, Wahyuni, & Alit, 2019). Depression doesn't just happen to adults. Children and adolescents can experience depression which is actually a treatable disease.

About 5% of children and adolescents in Indonesia suffer from depression at some point in time. Children under stress, while attending school, are at a higher risk for depression. Depression also tends to exist in the family itself (Wahyuningsih & Nandiroh, 2015). The incidence of depression in adolescents in Tanjungpinang is 60 (17.9%) out of 359 adolescents (Yuliyana, Wichaikull, & khanwong, 2015). Depression appears due to environmental factors, psychosocial factors, and cognitive factors. From the three factors, a clinical picture emerged in the form of physical changes, changes in feelings, changes in thoughts, and changes in daily habits. These changes occur when an individual experiences depression (asmika, harijanto, & handayani, 2008). Research conducted by (Yuliyana, Wichaikull, & khanwong, 2015) said that family history of depression, parents' marital status, appearance at school and self-esteem had a relationship with depression in adolescents. Meanwhile, according to (Muhith & Nasir, 2011) One of them is a stressor. Stressors are factors in human life that result in a stress response. Stressors can come from various sources, both from physical, psychological, and social conditions and also appear in work situations, at home, in social life, and other external environments.

The health burden brought on by depression makes depression an important public health issue for Indonesia as a developing country because it can hinder the country's growth (WHO, 2021). Over 700 000 people die due to suicide every year. Suicide is the fourth leading cause of death in 15-29-year-olds. Depression has several effects on adolescents. Adolescents with behavior disorders that are not in accordance with the demands, habits or norms of society that caused difficulties in care and education (Maramis & Maramis, 2009). Depression is a core picture in the form of pervasive low mood, loss of interest and pleasure, decreased energy, limited activity (Utami, Liza, & T, 2018). When experiencing depression, there will be some disturbances in communication.

Teenagers who live on the coast have different stressors from adolescents who live in cities. Where the lives of teenagers are spent on the beach by helping their parents as fishermen. The importance of knowing the symptoms of depression in adolescents to prevent an increase in the health burden and a decrease in adolescent appearance at school. So it is necessary to know the description of depression in adolescents on the coast.

METHODS

The descriptive correlation design was ued for describing the status of phenomena and relathionship among the phenomena at one point in time. Data for the study was collected by using the random sampling technique. The location of this study was Berakit village, Bintan city, Riau Islands. The population of this study were 134 adolescents and samples were 65 adolescent. While the questionnaire to measure the level of anxiety using the

Depression Anxienty Stress Scales (DASS) From. The DASS consists of 14 items for the assessment of anxiety, including feelings of anxiety; tension; sleep disturbances; intellectual impairment; depressed feelings; somatic symptoms; sensory symptoms; cardiovascular symptoms; respiratory symptoms; gastrointestinal symptoms; urogenital symptoms; autonomic symptoms; and behavior (Wahyudi et al., 2019). Each item is rated on a 4-point scale ranging from 0 to 3. The internal consistency reliability of 30 adolescents was .80. For the data descriptive statistics were used to calculate frequency, mean, standard deviation, and percentage for describing the distribution.

RESULTS

Table 1 showed that stage of adolecents; early adolescents (38%), The most of Sex was female (72%), and the majority of education senior high schools (66%).

Table 1 Distributions characteristic of respondents (N=65)

No	Variables	Frequency (n)	Percentage (%)
1	Stage of adolecents		
	Early adolescent (11-14th)	25	38
	Midles adolescent (15-17th)	20	31
	Late adolescents (18-22th)	20	31
2	Sex		
	Male	18	28
	Female	47	72
3	Education		
	Junior High schools	15	23
	Senior High schools	43	66
	Diploma	8	12

Table 2 Distribution of variables (N=65)

No.	Variables	Frequency (n)	Percentage (%)
1	Depression		
	Normal	54	83%
	Early depression	3	4%
	Middle depression	8	13%
	Major depression	0	0
	Mean: 7	Min-Ma: 5-18	
2	Anxiety		
	Normal	46	70%
	Early anxiety	14	22%
	Middle anxiety	5	8%

	Major anxiety	0	0
	Mean: 9	Min-Max : 9-14	
3	Stress		
	Normal	38	58%
	Early stress	10	15%
	Middle stress	15	24%
	Major stress	2	3%
	Mean:10	Min-Max:9-27	

Table 2 showed that most of depression was normal (83%). Most of anxiety adolescent was early anxiety (22%). Moreover, the most of participants rate middle anxiety (24%).

DISCUSSION

According to the findings, most of depression was normal (83%). Depression is a medical disorder that affects feelings and thoughts in the form of continuous feelings of sadness and a sense of loss of interest before doing an activity (agung, I, Ayu, Wahyuni, & Alit, 2019). The person experiences depressed mood (feeling sad, irritable,empty) or a loss pleasure or interest in activities for most the day , nearly every day for at least two weeks. Several other symptoms are also present, which may incule poor concentration, feelings of excessive guilt or low selt-worth, hopelessness about the future, thoughts about dying or suicide, sirupted sleep, changes in appetite or weight, and feeling especially tore or low in energy. In this study found that 13% adolescents were middle depression. Depression can also be missed if the primary presenting problems are unexplained physical symptoms, eating disorders, anxiety, refusal to attend school, decline in academic performance, sub stance misuse, or behavioural problems (Thapar, Collishaw, Pine, & AK, 2012). In some respects depression in adolescents can be viewed as an early-onset subform of the equivalent adult disorder because of its strong links with recurrence later in life.

In this study also found that Most of anxiety adolescent was early anxiety (22%). Anxiety disorders vary from teenager to teenager. Anxiety is Symptoms generally include excessive fears and worries, feelings of inner restlessness, and a tendency to be excessively wary and vigilant (Keliat, 2016). Even in the absence of an actual threat, some teenagers describe feelings of continual nervousness, restlessness, or extreme stress. Anxiety during adolescence typically centers on changes in the way the adolescent's body looks and feels, social acceptance, and conflicts about independence. When flooded with anxiety, adolescents may appear extremely shy. They may avoid their usual activities or refuse to engage in new experiences. They may protest whenever they are apart from friends. Or in an attempt to diminish or deny their fears and worries, they may engage in risky behaviors, drug experimentation, or impulsive sexual behavior.

Moreover, the most of participants rate middle stress (24%). Stress is Stress is the nonspecific response of the body to any demand. Stress has a different meaning for different people under different conditions (Krapic, Knezevic, & kardum, 2015). Although, most fears during childhood, and adolescence are considered appropriate for the development periods and the

situations in which they occur and although anxiety usually is thought of as adaptive because it helps in anticipating threat or harm. The most factors that contribute to the development and maintenance of anxiety symptom and disorder are biological predisposition example family-genetic, neurobiological and hormonal, but environmental factors should be underestimated

CONCLUSION

This study found that depression was normal (83%). Most of anxiety adolescent was early anxiety (22%). Moreover, the most of participants rate middle anxiety (24%) in adolescent on Berakit village, Bintan City, Riau Island.

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Analysis of Nursing Care on Congestive Heart Failure Disease Using Semifowler's Position to Increase Oxigen Saturation

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Abstract

Background: Cardiovascular disease is a health problem in both developed and developing countries. One of the most common cardiovascular diseases in Indonesia is congestive heart failure. Congestive heart failure is a condition in which the heart is unable to maintain adequate cardiac output to meet metabolic and tissue oxygen demands despite good venous flow.
Objective: This case study aims to obtain an overview of applying semi-fowler position to increase oxygen saturation in patients with congestive heart failure.
Methods: The study used was a descriptive case study by conducting nursing care and literature review. Participants in this study were patients with congestive heart failure with impaired breathing patterns.
Result: This case showed that applying semi-fowler position to Cardiac Heart Failure Patient was increased the oxygen saturation, which is characterized by a significant increase in oxygen saturation value with an average value of 3% each day.
Conclusion: nurse can help patient increasing the oxygen saturation on CHF patient using semi fowlers position.

Keywords: Nursing Care, Heart Failure, semi-fowlers

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INTRODUCTION

Cardiovascular disease is one of the health problems in both developed and developing countries. Cardiovascular disease is still a high threat in the world. One of the most common cardiovascular diseases in Indonesia is congestive heart failure (Litbang Kemenkes, 2018).

Congestive heart failure is a condition in which the heart is unable to maintain adequate cardiac output to meet metabolic and tissue oxygen demands despite good venous flow (Smeltzer, 2015). Regarding World Health Organization, cardiovascular disease is the number one disease worldwide. More than 17 million people worldwide die from heart and blood vessel disease (Ministry of Health, 2019). According to American Heart Association, 5.3 million people suffer from heart failure in the United States, 660,000 new cases are diagnosed each year with an incidence ratio of 10/1000 of the population over the age of 65 years (PERKI, 2015).

The main symptoms of heart failure are chest pain and shortness of breath. Chest pain occurs suddenly. The cause of chest pain is a decrease in oxygen supply to the heart muscle, which leads to the death of heart cells. Shortness of breath and decreased volume are caused by structural and functional abnormalities of the heart, resulting in impaired ventricular function and the inability to meet the body's tissue needs for nutrients and oxygen (Trayhurn, 2019). Dypsneu, which occurs due to increased blood volume and increased venous return due to decreased cardiac output, results in increased cardiac work and increased oxygen demand by the heart muscle. Heart failure patients with dyspnea experience oxygen desaturation, which can lead to hypoxia. Approximately 75-89% of heart failure patients experience a decrease in oxygen saturation (Wijayati et. al., 2019).

Oxygen saturation is the ability of hemoglobin to bind oxygen, which is indicated by the degree of saturation or saturation (SPO2). Continuous measurement of capillary oxygen saturation can be performed using cutaneous oximetry. Patients with perfusion/ventilation disorders, such as pneumonia, emphysema, chronic bronchitis, asthma, pulmonary embolism, congestive heart failure, are ideal candidates for pulse oximetry. Management of care that can be done to overcome oxygen saturation in heart failure patients includes checking vital signs, educating the patient about what is happening to avoid anxiety, resting the patient to reduce oxygen consumption, and adjusting the position (Hass, 2015).

Oxygen saturation is the percentage of hemoglobin bound to oxygen in the arteries (Wijaya, 2015). The normal value of oxygen saturation measured using pulse oximetry ranges from 95-100% (Septia, 2016). A saturation value of less than 85% indicates that the tissue does not get enough oxygen so that the patient requires further evaluation and a low oxygen saturation value (<70%) is a dangerous condition for the patient (Andriani & Hartono, 2017). Masip et. al., (2012) explained that oxygen saturation less than 93% may indicate heart failure. Further, Vold et. al., (2015) explained that the oxygen saturation less than or equal to 95% was predict an abnormality on patients with chronic obstructive pulmonary disease (COPD) when sleeping, exercising and on the airplane travelling.

Position is an action that is done intentionally to provide body position in improving physical and psychological well-being or comfort. Nursing interventions performed for heart failure patients include placing a therapeutic bed, therapeutic position, positioning the patient in an alienated body condition, positioning it to reduce dyspnea such as semi-fowler's position, elevating 45 degrees or more above the heart to improve backflow. The sleeping position increases cardiac output, which reduces chest tightness and pain. An elevated head position increases tidal volume because the pressure on the diaphragm is reduced, the lungs

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are flowing better, and the amount of venous return to the heart is reduced, which reduces the work of the heart and increases oxygen saturation (Isrofah et. al., 2020).

The semi fowler position is the act of positioning the patient in a semi-sitting position by supporting the head and shoulders using a pillow, the knee is bent and supported by a pillow, and the foot pads must maintain the foot in position (Ruth, 2015). The semi-fowler position is a sleeping position with the head elevated 30°–45°. It can reduce oxygen consumption and can increase lung expansion to be more maximal (Isrofah et. al., 2020). So that, Nurses should give this position to patients with cardiorespiratory disorders as independent of nursing care implementation in the management of hypoxia (Najafi et. al., 2018; PPNI, 2018; Doyle and McCutcheon, 2012)

METHODS

Study Design

The method used is a descriptive case study by conducting nursing care and literature review. The patient in this study was a Congestive Heart Failure Patient with impaired breathing patterns.

Participants

The participant was chosen random patient as criteria an inpatient who had impaired breathing pattern, can talk and conscious. Signs and symptoms felt by the patient at the time of the assessment were complained of shortness of breath, blood pressure 98/62 mmHg, pulse 98 x/m, respiration 25x/m, and CRT >3 seconds. Besides that, the SPO2 was 92% assisted by nasal oxygen cannula 5 lpm. Furthermore, the patient showed the using of the breathing accessory muscles, nostril breathing and orthopnea

Instruments

The author was an instrument itself assisted with fingertip Pulse Oximetry that available in ward. The data were recorded on Nursing Care Form.

Intervention

Semi fowler position as intervention was implemented in accordance with the steps in the planning guidelines of the Indonesian National Nurses Association (PPNI) with the books used namely SDKI, SLKI, and SIKI to determine nursing diagnoses, goals and objectives of nursing, nursing plans and to evaluate the actions given to the patient (PPNI, 2017; PPNI 2018; PPNI 2021). The interventions that had been carried out were monitoring respiration by monitoring breathing patterns, oxygen saturation, frequency, depth, respiratory effort, and oxygen therapy. The authors provide interventions by positioning the patient in a semi-*Fowler 's* way as airway management to overcome the problems experienced by the patient and increase oxygen saturation in the patient. The intervention was carried out in accordance with the Indonesian Nursing Intervention Standard (SIKI) which was already evidence-

based/Evidence Based Practice (EBP). The intervention was applied under the supervision of the nurse in charge of the patient.

Data Collection

The intervention was conducted on April 15, 2022 at 09.00 in the Olive Room 3 of Al-Ihsan Hospital, West Java Province. A 54-year-old patient being treated in Olive Room III RSUD Al-Ihsan Bandung who has been suffered from *Congestive Heart Failure*. *Congestive Heart Failure* suffered by patient disappear from his history of hypertension which he suffered for seven years.

Data Analysis

The authors used descriptive analysis on Microsoft Excel.

Ethical consideration

Participant agreed that his health data published without any identification (anonymous).

RESULTS

The semi-fowler position carried out in accordance with *evidence-based practice* to patient got positive results. In this case, there was an increase in oxygen saturation after being given a semi- *fowler position,* from the results of 92% oxygen saturation to 99% with the intervention given during 3 days with an average increase in oxygen saturation of 2-3% per day.

Table 1. Oxygen saturation being given a semi- *fowler 's position*

Date	Oxygen Saturation	
	Before intervention	After intervention
April 15, 2022	92%	94%
April 16, 2022	94%	96%
April 17, 2022	96%	99%

DISCUSSION

The nursing process that has been implemented in providing nursing care to the patient in this case had been implemented for 3 days. During the author's field there were no difficulties in performing nursing care for patients. After the authors carry out the stages of the nursing process and interventions based on evidence-based practice (EBP) related to

cases Congestive Heart Failure get positive results on nursing problems experienced by patients.

This case was in accordance with previous studies that the semi-fowler position was increase oxygen saturation in patients. Based on the results of research conducted by Kanine and Bakari (2022) after conducting *evidence-based nursing* based on journals/articles that have been analyzed, the results show that there is an effectiveness of changing the Semi fowler position with an increase in saturation of 2%. This study is also in line with research conducted by Ani (2020), the application of the semi - fowler position (sitting position 45°) for 3 days was reduce shortness of breath in patients and increased in oxygen saturation by 2%. Another research by Wijayati et. al., (2019) at RSUD Dr. Loekmono Hadi Kudus, there was 2% increasing of oxygen saturation after giving the semi -fowler sleeping position of 45° the O2 saturation. It was 96% before and was change to 98% after. Furthure, a study conducted by Pambudi & Dimas (2020) with the title fowler's Position to Increase Oxygen Saturation in Congestive Heart Failure (CHF) Patients Who Experience Shortness of Breath. There were change in O2 saturation of the two respondents by 4-5%. Last, research conducted by Najafi et. al., (2018) in the ICU and CCU of 22 Bahman Hospital in Gonabad Iran, showed that arterial blood oxygen in the earlobe and in the semi-fowler position was higher than other points and positions.

Regarding the nursing problem of ineffective breathing patterns that arose, the main implementation given to patient was by providing a semi-fowler position. It was developed of lung expansion more maximal so that the expected result that the patient breathing pattern improved oxygen saturation increased. Intervention in the semi - fowler position needs to be given because the provision of the semi - fowler position is a simple and effective measure to reduce the risk of decreased chest wall expansion. The semi - fowler position is usually given to patients with shortness of breath who are at risk for decreased oxygen saturation, such as cardiopulmonary conditions with an 11-degree slope of 30–45° (Wijayati, et. al., 2019; Muzaki and Ani, 2020; Wahyuni, 2015).

CONCLUSION

A semi-fowler position overcome the main nursing problems of ineffective breathing pattern by increasing patient chest expansion thereby oxygen saturation.

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The Relationships between Smoking and Coffee Drinking Habits with Hypertension in Internal Medicine Polyclinic Patients at Malingping Hospital Banten

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Abstract

Background: Hypertension is a disease that is often found in the community and its prevalence continues to increase. One of the modifiable factor related to hypertension is smoking and dietary consumption. This study aimed to identify the relationships between smoking and drinking coffee with the incidence of hypertension in Internal Medicine Polyclinic patients at Malingping Hospital.

Methods: The study used is cross sectional. Data was collected by measuring blood pressure and questionnaires. A sample of 52 respondents was taken by accidental sampling and analyzed using chi-square.

Results: The study showed that there was significant relationship between smoking and hypertension P-value = 0.021 and coffee drinking habits with hypertension P value = 0.001.

Conclusion: Hospitals or health workers are expected to provide counseling in the form of health education about managing smoking habits and coffee consumption as an effort to prevent hypertension in the community.

Keywords: hypertension, smoking, drinking coffee

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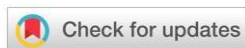
INTRODUCTION

In general, a normal or desired blood pressure is systolic blood pressure <130 mmHg and diastolic blood pressure <85 mmHg. Hypertension is abnormally high blood pressure and if it has been measured at least on three different occasions. A person is considered to have hypertension if the blood pressure is higher than 140/90 mmHg.

The World Health Organization (WHO, 2021) revealed that around 1.28 billion people in the world have hypertension. The report showed that one in five people in the world with hypertension have it under control (WHO, 2021). The number of people with hypertension in the world continues to increase every year, it is estimated that in 2025 there will be 1.5 billion people who have hypertension. It is also estimated that every year 9.4 million people die from hypertension and complications (Kemenkes RI, 2019a)

In 2019, 1,857,866 people experienced hypertension with a higher percentage in women and only 50 percent of the total estimated hypertension survivors in Banten Province received health services. In Tangerang City, 100 percent of hypertension sufferers receive health services, while Serang City has the lowest percentage of hypertension survivors receiving health services with 17.8 percent (Kemenkes RI, 2019b).

In 2005, 22% of adults had consumed tobacco. The ratio is 36% of men smoke to 8% of women. The World Health Organization (WHO) states that Indonesia ranks third in the number of smokers, reaching 146,860,000 people (SEATCA, 2018). Caffeine can stimulate the heart to work faster so that it flows more fluid every second. The habit of drinking coffee is obtained from one cup of coffee containing 75-400 mg of caffeine, so drinking more than four cups of coffee a day can increase systolic blood pressure by about 10 mmHg and diastolic blood pressure by about 8 mmHg (Rahmawati & Daniyati, 2016).

Various things are associated with risk factors for hypertension. In general, there are two factors that cause hypertension, namely modifiable risk factors and non-modifiable risk factors. The modifiable risk factors include less consumption of fruits and vegetables, consuming too much salt or salty foods, consuming too much caffeine and alcohol, smoking, lack of exercise, being overweight, and sleeping pattern disorders. Moreover, food selection for daily consumption is very important for patients with chronic disease (Lestari et al., 2018).

A preliminary survey conducted by researchers on five patients with hypertension who went to the Internal Medicine Polyclinic at Malingping Hospital where the results showed that four out five patients had a smoking habit and all of them had a habit of drinking coffee. Coffee consumption may reduce the risk of type 2 diabetes mellitus and hypertension, as well as other conditions associated with cardiovascular risk such as obesity and depression, but can adversely affect lipid profiles depending on how the drink is prepared (O'Keefe et al., 2013). Therefore, this study aimed to identify the relationship between smoking habits and coffee consumption with the incidence of hypertension in Malingping Hospital.

METHODS

The type of study used a descriptive cross-sectional design. The sample in this study were all patients who went to the Internal Medicine Clinic at the Malingping Hospital at the time of the study as many as 52 respondents. Inclusion criteria included hypertensive patients at the Internal Medicine Clinic at Malingping Hospital, at least 21 years old, consuming coffee, being able to read and write. Exclusion criteria included patients with secondary hypertension, benign or malignant hypertension, and uncooperative patients.

Sampling collection technique with accidental sampling. Blood pressure data collection by measuring blood pressure directly and using a questionnaire sheet. The study was conducted by considering and using several research ethics, including anonymity, autonomy, and nonmaleficence.

RESULTS

Based on the results of blood pressure measurements and questionnaire collection, the results of the frequency distribution of respondents' characteristics are as follows:

Table 1. Demographic Characteristics (N=52)

Variable	n (%)
Age:	
Mean, ± SD	44,88, ± 10,753,
Min-Max	28-75

Variable	n (%)
Sex:	
Men	29 (55,8%)
Women	23 (44,2%)
Education:	3 (5,8%)
No School	8 (15,4%)
Primary School	22 (42,3%)
Junior High School	11 (21,1%)
Senior High School	8 (15,4%)
College	

The minimum age of the respondent is 28 years and the maximum age of the respondent is 75 years. The majority of respondents are male and have an education at the end of junior high school. While the univariate results in this study included the degree of hypertension, smoking habits, and coffee drinking habits.

Table 2. Hypertension Frequency Distribution (N=52)

Hypertension	Frequency (n)	Persentation (%)
First degree hypertension	5	9,6
Second degree hypertension	25	48,1
Third degree hypertension	22	42,3

Based on table 2, it is known that from 52 respondents, most of the respondents (48.1%) had grade 2 hypertension.

Table 3. Frequency Distribution of Smoking Habits (N=52)

Hypertension	Frequency (n)	Persentation (%)
Smoking	28	53,8
Do not smoking	24	46,2

Based on table 3, it is known that from 52 respondents, most of the respondents (53.8%) have a smoking habit.

Table 4. Frequency Distribution of Coffee Drinking Habits (N=52)

Drinking coffee	Frequency (n)	Persentation (%)
High	27	51,9
Low	25	48,1

Based on table 4, it is known that from 52 respondents, most of the respondents (51.9%) have a high coffee drinking habit.

Table 5. The Relationship between Smoking Habits and Hypertension Incidence

Smoking	Hypertension						Total		p value
	3rd		2nd		1st		n	%	
	n	%	n	%	n	%			
Merokok	3	5,8	18	34,6	7	13,5	28	53,8	0,021
Tidak Merokok	2	3,8	7	13,5	15	28,8	24	46,2	

Based on table 5 it can be concluded that 18 respondents who smoked had grade 2 hypertension. Meanwhile, 15 respondents who did not smoke had grade 1 hypertension.

Table 6. The Relationship between Coffee Drinking Habits and Hypertension Incidence

Drinking coffee	Hypertension						Total		p value
	3rd		2nd		1st		n	%	
	n	%	n	%	n	%			
High	5	9,6	17	32,7	5	9,6	27	51,9	0,001
Low	0	0,0	8	15,4	17	32,7	25	48,1	

Based on table 6 it can be concluded that 17 respondents who have a high habit of drinking coffee have grade 2 hypertension and 17 respondents who have a low coffee drinking habit have grade 1 hypertension.

DISCUSSION

Characteristics of respondents

The average age of the respondents in this study was 45 years with the highest age being 75 years. With increasing age, various systems in the body experience a decline in function. Blood vessels stiffen with age, triggering an increase in blood pressure. With increasing age, it can increase the risk of increasing blood pressure (Whitney & Rolfes, 2008). The majority of the sexes in this study were male. The habit of smoking and drinking coffee is identical to the habits carried out by men. According to infodatin most women smoke less than 1 cigarette per day while men smoke 1 cigarette per day (Kementerian Kesehatan RI, 2015). Meanwhile, according to Sirait et al., (2002) half of male smokers consume 11-20 cigarettes/day.

The results of data analysis show that the majority of respondents' education is junior high school. This is in line with the survey conducted by Sirait et al., (2002) which shows that respondents who smoke more than 20 cigarettes per day with a high school and college education are more than respondents with higher education. This can be because respondents with higher education have better knowledge and awareness about the dangers of smoking to health.

The relationship between smoking habits and the incidence of hypertension

Based on the Chi-Square statistical test on the relationship between smoking and hypertension, p value = 0.021 < (0.05) indicates that there is a significant relationship between smoking habits and the incidence of hypertension in Malingping Hospital. Based on table 5 shows that smoking habits can also increase a person's hypertension degree. Meanwhile, respondents who do not smoke but have grade 1 hypertension can be caused by other risk factors such as age, gender, and obesity.

Substances contained in cigarettes can damage the lining of the artery walls causing the blood vessels to become stiff. This causes narrowing of the arteries which can increase blood pressure. In addition, the nicotine content in cigarettes can increase the hormone epinephrine which can constrict arteries. Carbon monoxide gas produced by burning cigarettes can be inhaled and causes the heart to work harder to replace the supply of oxygen to body tissues. Heavier heart work can increase blood pressure.

The influence of chemicals contained in cigarettes such as nicotine, carbon monoxide and tar will stimulate the work of the central nervous system and the sympathetic nervous system, resulting in increased blood pressure and faster heart rate. The results of this study are in line with the research conducted by (Kartikasari, 2015) in Kabongan Kidul Village which found that smoking has been proven to be a risk factor for hypertension. The study showed that people with smoking habits had a 9.537 times greater risk of developing hypertension than people who did not smoke.

One of the chemicals contained in cigarettes is carbon monoxide (CO) gas which is toxic which is contrary to oxygen in its transport and use. Cigarettes contain 2-6% CO when smoking, while the lowest CO inhaled by smokers is 400 ppm (parts per million) and can increase carboxy hemoglobin levels in the blood by 2-16% (Sitepoe, 2000). CO gas can also cause hemoglobin desaturation, reduce direct oxygen circulation to tissues throughout the body including the myocardium. CO replaces oxygen in hemoglobin, interferes with the release of

oxygen, and accelerates atherosclerosis (calcification or thickening of blood vessel walls. Carbon monoxide in cigarette smoke will replace oxygen binding in the blood vessels). This causes blood pressure to increase as the heart is forced to pump to get enough oxygen into other organs and tissues of the body.

The relationship between coffee drinking habits and the incidence of hypertension

Based on the Chi-Square statistical test to see the relationship between coffee consumption and hypertension, p value = 0.001 < (0.05) indicates that there is a significant relationship between coffee drinking habits and the incidence of hypertension in Malingping Hospital. Based on table 6, it can also be seen that there is an increase in the number of respondents who have grade 1 hypertension to grade 2 hypertension along with high coffee drinking habits. This is in line with previous study conducted by (Martiani & Lelyana, 2012) which showed that respondents who consumed 1-2 cups of coffee per day increased the risk of hypertension 4.11 times higher (p = 0.017; OR = 4.11; 95% CI: 1,22-13,93) compared to subjects who do not drink coffee. The results of Rahmawati & Daniyati, (2016) also show that there is a relationship and has a very strong degree of relationship between coffee drinking habits and hypertension levels. In contrast to the results of research conducted by (Bistara & Kartini, 2018) which showed there was no relationship between coffee drinking habits and hypertension. This can be due to the higher level of coffee consumption in respondents where in one day the majority of respondents usually consume coffee above 5 cups per day. Based on the results of this study, those who have a habit of consuming high coffee are those who spend a lot of time at home and have little activity outside the home, so they have more opportunities to consume coffee.

Coffee can affect blood pressure because it contains polyphenols, potassium, and caffeine (Bistara & Kartini, 2018). Caffeine has a competitive antagonistic effect on adenosine receptors. Adenosine is a neuromodulator that affects a number of functions in the central nervous system. This has an impact on vasoconstriction and increases total peripheral resistance, which will cause high blood pressure. This proves that the increase in blood occurs through biological mechanisms, including caffeine binding to adenosine, activating the sympathetic nervous system by increasing the concentration of cathecolamines in plasma, and stimulating the adrenal glands and increasing cortisol production so that it has an impact on vasoconstriction and increases total peripheral resistance so that blood pressure rises (Martiani & Lelyana, 2012).

However, epidemiological studies show that drinking coffee can reduce the risk of death from cardiovascular disease. Potential benefits also include protection against neurodegenerative diseases, improved asthma control, and a lower risk of gastrointestinal disease (O'Keefe et al., 2013). Based on study results, daily intake of 2 to 3 cups of coffee is safe and has a neutral to beneficial effect (O'Keefe et al., 2013)However, it is necessary to consider other effects of the caffeine contained in coffee. In addition, people also need to pay attention to the composition of the coffee they consume to get a good effect and avoid the bad effects of coffee consumption.

CONCLUSION

Based on the results of the study, it is known that from 52 respondents, most of the respondents had grade 2 of hypertension, most of the respondents had a smoking habit and most of the respondents had a high coffee drinking habit. There is a relationship between smoking and drinking coffee with the incidence of hypertension in Malingping Hospital. Moreover, the health workers are suggested to provide counseling about managing smoking and coffee drinking habits as an effort to prevent hypertension. In addition, it is necessary to have the closest cross-sectoral collaboration with the community and health cadres in counseling the risk factors and dangers of hypertension.

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Analysis of Nursing Care for the Elderly with Hypertension
Using the Practice of Progressive Muscle Relaxation Therapy: A Case Study

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Abstract

Background: Hypertension attacks more in middle age or the elderly. Non-pharmacological therapy is needed that it safe and easy to apply in providing nursing care as an effort to control Hypertension in the elderly. Progressive Muscle Relaxation (PMR) therapy can be used as an effective and safe nursing action.

Objective: This case study aims to analyze the application of progressive muscle relaxation therapy in providing nursing care for the elderly with hypertension.

Methods: This study used case study design. The participant was an elderly with Hypertension. Instrument used was a sphygmomanometer and PMR as a systematic technique to achieve a state of relaxation, a method that is applied through the application of a progressive method with gradual and continuous exercise on skeletal muscles by tensing and relaxing them which can restore muscle feeling so that the muscles relax, in this study, for 3 days with a length of 15 minutes on each day.

Results: This study uses a case study. The results showed that the change in blood pressure before and after being given PMR decreased, from 170/110 to 158/100 mm Hg. This also has an impact on all client complaints so that they can be resolved, although not completely. The application of PMR therapy in nursing practice can be used as an effort to control hypertension naturally.

Conclusion: There is that PMR therapy can be applied in providing nursing care to the elderly with Hypertension because it is effective in lowering blood pressure.

Keywords:
Elderly, Case Study, Hypertension, Progressive Muscle Relaxation
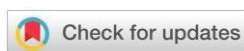
INTRODUCTION

Non-communicable diseases or NCDs are the main cause of death globally. The high prevalence of NCDs has an impact on decreasing productivity and disrupting the fulfillment of daily activities. Concern for the increasing prevalence of NCDs has promted the birth of various initiative at the global and regional levels for the control of NCDs.In reducing NCDs cases through controlling risk factors in the community, various efforts have been made to prevent and control NCDs. Efforts to prevent and control NCDs in Indonesia itself are in the form of integrated coaching posts or posbindu. Posbindu NCDs is the participation of the community in carrying out early detection and monitoring of NCDs risk factors which are carried out in an integrated routine and periodically as an effort to control various types of NCDs. NCDs risk self-detection efforts from this posbindu program can be applied to control various kinds of NCDs diseases (P2PTM, 2019).

NCDs includes many types of diseases including Hypertension, Stroke, Coronary Heart Disease, Cancer, Diabetes Mellitus, and ARI. Heart and blood vessel disease (cardiovascular system disease) is a major problem for NCDs in developed and developing countries where hypertension is the number 1 cause of death in the world every year (Kemenkes RI, 2019). Hypertension attacks more in middle age or the elderly (elderly). where based on the 2018 Riskesda data, hypertension suffered the most by age >55 years old, which was 55.2% (Riskesdas, 2018).

Hypertension that occurs in the elderly requires immediate treatment because Hypertension cannot be cured and can only be controlled. Moreover, uncontrolled hypertension might relate to further complication for elderly, including fraily and deterioration of cognitive function (Hastuti et al., 2021). Hence, the management of Hypertension in the elderly itself needs to consider various things including risk factors and complications. Pharmacological therapy (Hypertension drugs) is not recommended for the elderly because continued use of drugs can cause complications. Non-pharmacological techniques are more recommended in overcoming Hypertension because they do not cause technical and pharmacologic complications that can be done, including progressive muscle relaxation techniques, warm water foot soaks, Hypertension exercises and other non-pharmacological therapies (Aspiani, 2016).

Of several non-pharmacological therapies that are considered effective in lowering blood pressure in the elderly with Hypertension is progressive muscle relaxation therapy. According

to research of Sabar (2020), the results show that Progressive Muscle Relaxation (PMR) exercise can significantly reduce systolic blood pressure (p = 0.027) and also lower diastolic blood pressure (p = 0.041). This is supported by research by Rahmawati (2018) which shows that Progressive muscle relaxation therapy significantly reduces blood pressure in patients with hypertension so that this therapy can be used as an alternative therapy as non-pharmacological therapy in lowering blood pressure for patients with hypertension.

In addition to being more effective in lowering blood pressure, progressive muscle relaxation therapy includes the cheapest relaxation method, reduces expenditure, is practical, efficient and easy to do, has no side effects, and makes the mind feel calm and the body becomes more relaxed (Valentine, et., al., 2014). Progressive muscle relaxation can also help reduce stress, lower blood pressure, and increase immunity so that functional status and quality of life improve (Karang dkk, 2017). Based on some of the things above, it proves that progressive muscle relaxation is effective and safe in lowering the blood pressure of the elderly so that it can be applied in the management of the elderly with Hypertension. Ability to manage chronic disease by the patient themselves is one of good outcomes from nursing intervention (Elon et al., 2021). Thus, to manage Hypertension in the elderly, the role of nurses as caregivers is very important. In the implementation of maintenance interventions, applying protective muscle relaxation therapy exercises that are safe and minimal side effects are carried out as an effort to control Hypertension.

In an effort to apply progressive muscle relaxation therapy as an effort to control Hypertension in providing nursing care, the author takes a case study of one elderly person from the work area of the Tarogong Public Health Center, namely Mrs. O, because based on a preliminary study at the Tarogong Health Center itself, many elderly people with Hypertension are aged >65 years.

Based on preliminary studies, efforts to control Hypertension have been carried out by taking Hypertension drugs to lower blood pressure, even though the continuous use of these drugs can be dangerous because of the risk of causing complications. Based on the above background, researchers are interested in conducting an "Analysis of Nursing Care for the Elderly with Hypertension Using the Practice of Progressive Muscle Relaxation Therapy".

METHOD

Study Design

This research is a case study by educting anamnesis, observation, and physical examination, as well as analyzing the theory and practice related to the nursing care provided based on an Evidence Based Practice (EBP).

Sample/ Participants

The participant in this study was an elderly person with Hypertension, namely Mrs.O. Participants, Mrs. O lives at her house, at Kampung Babakan Jambe, Pasawahan Village, the working area of the Tarogong Public Health Center.

Instrument

This study used two instruments: a sphygmomanometer to check blood pressure and then, a standard operating procedure for the implementation of progressive muscle relaxation therapy.

Data Collection

To determine which participants will be treated as patients, the researchers asked for data from the Tarogong Health Center to obtain data on hypertension patients. Then one participant was selected to be given nursing care. The researcher conducts a meeting contract with the patient by first explaining the purpose of providing nursing care. The researcher asked the client's willingness to be invited to work together when the care was carried out. Participants in informed consent.

Data was collected through (1) interviews to obtain information or verbal information, especially those related to health history and daily activities; (2) Observation is a planned procedure that includes seeing, observing, and recording a number of certain activities or certain situations that exist with health problems involving physical, mental, social and spiritual aspects; (3) Physical examination is carried out using the Inspection, Palpation, Percussion, Auscultation (IPPA) approach, namely examination by looking at the body parts being examined through observations of size, shape, position, and body symmetry. Palpation is a technique that uses the sense of touch in the form of hands and fingers to collect data such as

temperature, turgor, shape, humidity, vibration and size. Percussion is an examination by tapping certain parts of the body surface to compare with other parts of the body (left-right) with the aim of produce sound, Auscultation is a physical examination performed by listening to the sound produced by the body using an instrument. a stethoscope; (4) Documentation is done by searching for data in the form of medical records, literature, diagnostic examinations, journals and other relevan data.

The stages of giving PMR therapy include 8 steps, namely: (1) Sitting or lying in a comfortable room and away from noise; (2) Tighten the leg muscles for 5 seconds and then relax the muscles for 5 seconds, extending the toes so as not to cramp; (3) Tighten and relax the calf muscles for the same duration of time; (4) Tighten and relax the muscles of the hips and buttocks; (5) Do the same method on the abdominal and chest muscles; (6) Tighten the shoulder muscles and then relax; (7) Tighten the facial muscles by frowning while closing your eyes for 5 seconds, then relax the facial muscles for 5 seconds; (8) Relax your hand muscles by clenching your fists for 5 seconds and releasing your fists slowly for 5 seconds.

Data Analysis

Data analysis was carried out in 3 stages, namely: (1) Data reduction, namely the process of selecting data, focusing on simplification of data, abstracting data, and transforming rough data that emerged from written notes in the field. This data reduction activity can be carried out through: strict data selection, making summaries, and classifying the data into a pattern that is broader and easier to understand; (2) Data presentation, namely presenting data in the form of short narrative descriptions to understand what happened, plan further work based on what is understood; (3) Conclusions, namely from the data presented, then the data is discussed and compared with the results of previous studies and theoretically with health behavior, conclusions are drawn using the induction method, the data collected is related to assessment, diagnosis, planning, action, and evaluation

Ethical consideration

The ethics that underlie the preparation of this case study consist of: (1) Informed Consent, where the subject must obtain complete information about the purpose of the research to be carried out, has the right to freely participate or refuse to become a participant. In the informed

consent it is also necessary to state that the data obtained will only be used for scientific development; (2) Anonymity, the subject has the right to request that the data provided must be kept confidential which is guaranteed by obscuring the identity of the participant or being anonymous. (3). Confidentiality, the confidentiality given to informants is guaranteed by researchers (Nursalam, 2011).

The ethical principle applied in providing nursing care to Mrs. O with progressive muscle relaxation therapy is benefit. Beneficience is doing good, just doing something good. This principle requires nurses to do good things so as not to make mistakes and crimes. Example: a nurse advises a client on an exercise program to improve general health. Likewise with the provision of nursing care to Mrs. O, the authors provide progressive muscle relaxation exercises to reduce blood pressure in clients.

RESULTS

1. Assessment

The client is an elderly 79 year old woman who lives in a village called Kampung Babakan Jambe, Pasawahan Village, Tarogong Kaler District, Garut Regency. The client is a Muslim, works as a trader. Based on the results of the assessment on Mrs. O, it was found that the main complaints were headache and neck pain, pain was felt on a pain scale of 5 (0-10), pain decreased when the client sat and increased if the client stood for a long time or was active. In addition, clients also complain of difficulty sleeping and often woke up at night, the client slept 4 hours per day; and sometimes feel dizzy when walking. Mrs. O walks with the help of a cane because his left leg sometimes hurts.

The results of the blood pressure examination were 170/110 mmHg, fallen 3 months ago and says his vision is blurry. The results of the study of family health history, it was found that the client's mother also suffered from hypertension. The client said he had no experience with hypertension, did not know about hypertension, and many clients asked about hypertension and how to lower blood pressure naturally without anti-hypertension drugs.

2. *Nursing Diagnoses*

After conducting the assessment, the author began to formulate nursing problems. The following formulation of nursing diagnoses that appear on the client:

a. Acute pain b.d increase in blood pressure d.d client complains of pain in the head and neck, the client looks grimacing and the client's blood pressure is 170/110 mmHg. The authors

raised this problem because at the time of the assessment, major data were found in the form of clients complaining of headaches and neck pain, throbbing pain with a pain scale of 5 (0-10). Pain decreases if the client sits back and increases if the client stands for a long time or is active.

b. Disorders of sleep patterns related to headaches d.d the client says it is difficult to sleep and is often awake at night, the client sleeps 4 hours per day, blood pressure is 170/110 mmHg. The authors raised this problem because at the time of the assessment it was found that the client complained of difficulty sleeping and was often awake at night because of pain.

c. Knowledge deficit b.d lack of exposure to information d.d client says he doesn't know about hypertension, clients ask a lot of questions about hypertension and how to lower blood pressure. The authors raised this issue because at the time of the study it was found that the client did not know about hypertension and the client asked about how to lower blood pressure.

d. Risk for falls related to retention of cerebral blood vessels d.d client complains of headache, aged >65 years (79 years), had fallen 3 months ago, blurred vision. The authors raised this problem because during the assessment it was found that the client's data complained of pain, blurred vision, FR > 6 inches, TUG results 22 seconds, the house looked a bit dark and scattered

3. Nursing Care Plan

At the intervention stage, the authors found difficulties and obstacles. This is because the nursing diagnoses that exist in the theory partially do not appear in this case, so that the planning already contained in the theory cannot be implemented in all cases in the field. Because if the plan is not in accordance with the problems experienced by the client, the plan will not improve the conditions experienced by the client optimally. Therefore, the plan that the author formulates is adjusted to the nursing diagnoses obtained in the case in the field. The steps in planning are adjusted to the guidelines from the Indonesian National Nurses Association (PPNI) with the books used, namely the IDHS, SLKI, and SIKI to determine nursing diagnoses, nursing goals and objectives, nursing plans and to implement nursing plans and evaluate nursing actions given to the client.

The main diagnosis is acute pain by monitoring the response, pain scale, factors that aggravate and relieve pain, assess nonverbal pain responses, and encourage clients to do progressive muscle relaxation so that blood pressure drops so that pain is reduced. The second

diagnosis is a sleep pattern disorder by identifying sleep activity patterns, sleep-disturbing factors, and recommending avoiding foods/drinks that interfere with sleep. The third diagnosis is knowledge deficit by identifying readiness and ability to receive information, providing health education materials and media, scheduling health education according to agreement, and providing opportunities to ask questions. The fourth diagnosis is the risk of falling by identifying risk factors for falling, environmental factors that increase the risk of falling, recommending adjusting the lighting of the room, recommending using non-slip footwear and recommending concentrating on maintaining body balance.

The intervention performed on Mrs. O to reduce blood pressure is by progressive muscle relaxation. The procedure carried out consists of 15 steps. Progressive muscle relaxation has been proven by many studies. effective in lowering blood pressure in the elderly. This is proven when researchers apply progressive muscle relaxation therapy in the elderly with hypertension, there is a decrease in blood pressure in Mrs. O, there is a decrease in blood pressure and is able to reduce the pain experienced by the client.

4. Nursing Implementation

At this stage the authors carry out implementation in accordance with the intervention plan that has been determined together with the client. The implementation carried out on the client has succeeded in reducing the disruption in meeting the client's needs although it is not completely resolved because of many factors that influence it. But the client shows a change in conditions for the better.

Progressive muscle relaxation therapy in this study was intended to reduce blood pressure in Mrs. O which was proven that after the client was given progressive muscle relaxation therapy exercises for 3 days with each meeting for 15 minutes, there was a significant decrease in blood pressure which was initially 170/110 mmHg. to 158/100 mm Hg. The impact of the decrease in blood pressure resulted in a decrease in the pain scale from 5 to 4, the client's sleep became more restful and rarely woken up. While the implementation for the problem of nursing knowledge deficit, is done by providing health education about hypertension and its control. Meanwhile, for the nursing problem of falling risk, it is recommended that the client use anti-slip sandals, increase room lighting and modify the environment so as not to cause a potential trip that can cause the risk of falling.

5. Evaluation

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The results of the evaluation of the four nursing problems that arise in Ny. After implementation for 3 days with 15 minutes for each administration, namely for acute pain problems, sleep disturbances, knowledge deficits, and risk of falling, the results showed positive results, although only some of the criteria could be completed. After doing progressive muscle relaxation therapy, the client's blood pressure dropped from the initial examination of 170/110 mmHg to 158/100 mmHg on day 3; the client's headache complaints decreased slightly from a pain scale of 5 to 4; complaints of decreased sleep patterns even though they can only sleep for about 6 hours but the client can sleep soundly without being awake; the knowledge deficit has been partially resolved, as evidenced when asked about hypertension disease was able to answer even though there were some who forgot and still did not know; only the problem of the risk of falling that can be completely overcome is proven by the client saying he already has rubber sandals, will always wear them when walking and be careful when walking so as not to fall.

DISCUSSION

Assessment of Mrs. O with hypertension using preliminary study techniques and direct anamnesis to the client and the client's family, the assessment starts from the client's identity, physical examination through health and family medical history.

1. Assessement

The study was found that Mrs. O's complaints were headaches, neck pain and complaints of difficulty sleeping and sometimes felt dizzy when walking and walking using a cane because her left leg sometimes hurt. when the blood pressure examination was carried out, the results were found to be another blood pressure or 70/10 mmHg, this is in accordance with the signs and symptoms according to Ardiansyah (2012) that signs and symptoms in patients with Hypertension are Headaches, blurred vision, swings, unsteady steps, nocturia and edema.

At the time of examination of the family medical history, it was found that the client's late mother also suffered from Hypertension. This is in accordance with Asfiani's (2016) theory that Hypertension can occur in people who have genetic offspring with hypertension sufferers. From the case, data also obtained, namely in Mrs. O there are risk factors for Hypertension, one of which can be caused by age because Mrs. o's age is currently 79 years and heredity factors. Classification of Hypertension based on graphs according to Nurarif (2016) based on systolic and diastolic blood pressure Mrs. O is in the medium grade 2 category 170/110.

2. Nursing Diagnoses

The formulation of nursing diagnoses includes 3 elements, namely Problem (P), Etiology or cause (E) and Sign-Symptom (S). The nursing problems that arise in Mrs. O based on the results of the assessment, namely: (1) Acute pain, this problem was raised because at the time of the assessment data were found in the form of the main complaint of headache, neck pain, throbbing pain on a scale of 5 (0-10). This is caused because hypertension causes systemic blood vessel vasoconstriction resulting in an increase in cerebral blood vessels that compress brain fibers and cause acute pain; (2) Disorder of sleep patterns was removed because the data found that the client complained of difficulty sleeping and often woke up at night. This is because the headache felt by the client presses the nerves so that it interferes with the client's sleep; (3) Knowledge deficit, this problem was raised because at the time of the study it was found that the client did not know about Hypertension and always asked about how to lower blood pressure, it might also be because changes in health status affected the lack of exposure to information; (4) The risk of falling is raised because at the time of the assessment, data obtained from the client complaining of pain, blurred vision, FR > 6 inches, TUG results 22 seconds, the house looks a bit dark and scattered, all of these factors can contribute to the possibility of the client to fall.

3. Nursing Care Plan

The plan that the author formulated is in accordance with the nursing diagnoses obtained in cases in the field. the steps in planning are adjusted to the guidelines of the Indonesian National Nurses Association or Persatuan Perawat Nasional Indonesia (PPNI) with the books used, namely sdki slki and siki to determine nursing diagnoses, nursing goals and objectives, nursing plans and to implement nursing plans and evaluate nursing actions given to the client.

The main diagnosis is an acute search by monitoring the response to the pain scale, factors that aggravate and relieve pain, assessing the response, verbally and destroying the fabric, doing illustrations or progressively so that blood pressure drops so that pain is reduced. The intervention carried out on Mrs.O for lowering blood pressure is by progressive muscle relaxation. The procedure carried out consists of 15 steps. Progressive muscle relaxation has been proven by many studies to be effective in lowering blood pressure in the elderly. This was proven when the researchers applied progressive muscle relaxation therapy in the elderly with Hypertension, there was a decrease in blood pressure in Mrs.O.

4. Nursing Implementation

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In this stage, the authors carry out the implementation in accordance with the interventions that have been planned with the client. Implementation is aimed at reducing blood pressure in Mrs.O with progressive muscle relaxation therapy for 3 days for 15 minutes each. Progressive muscle relaxation is a systematic technique to achieve a state of relaxation, a method that is applied through the application of a progressive method with gradual and continuous exercise on skeletal muscles by tensing and relaxing them which can restore muscle feeling so that the muscles relax and can be used as a treatment to lower blood pressure in patients with essential hypertension (Ramba, et al, 2015).

The stages of giving PMR therapy includes 8 steps, namely: (1) Sitting or lying in a comfortable room and away from noise; (2) Tighten the leg muscles for 5 seconds and then relax the muscles for 5 seconds, extending the toes so as not to cramp; (3) Tighten and relax the calf muscles for the same duration of time; (4) Tighten and relax the muscles of the hips and buttocks; (5) Do the same method on the abdominal and chest muscles; (6) Tighten the shoulder muscles and then relax; (7) Tighten the facial muscles by frowning while closing your eyes for 5 seconds, then relax the facial muscles for 5 seconds; (8) Relax your hand muscles by clenching your fists for 5 seconds and releasing your fists slowly for 5 seconds. This progressive muscle relaxation therapy technique is expected to lower Ny. O so that it has an impact on reducing acute pain, disturbed sleep patterns due to pain as the main cause, so that if the pain is resolved, it is possible that the problem of sleeping pattern disorders will be resolved as well. For the knowledge deficit, the implementation is carried out by providing health education related to hypertension. To diagnose the risk of falling, the implementation given is by recommending the client to use non-slip sandals, increasing the lighting of the room and modifying the environment so as not to cause a potential trip that can cause the risk of falling.

5. Evaluation

Based on the evaluation results, it was found that of the three nursing problems that emerged, namely acute pain, disorders of sleep patterns, knowledge deficit, all three showed positive results, indicating the client's condition was in a better direction even though the three nursing problems had only been partially resolved. Based on the evaluation results, it was found that there was a decrease in blood pressure after the client was given progressive muscle relaxation therapy for 3 days with a daily duration of about 15 minutes/meeting.

The results of the intervention showed that after giving progressive muscle relaxation therapy for 3 consecutive days, the client's blood pressure decreased from the initial examination of 170/110 mmHg to 158/100 mmHg on the 3rd day of examination. This condition resulted in the improvement of headache complaints, clients who gradually decrease from a pain scale of 5 to 4; the client said that she sleeps more soundly because her headache has reduced ands he rarely wakes up during sleep; the client also has a better understanding of the high blood pressure he suffers from. The finding is consistent with the study of Chauhan and Sharma (2017) suggested that PMR could help reduce blood pressue and act as an adjunctive intervention for hypertension.

CONCLUSION

From a case study conducted on Mrs. O with Hypertension and intervention with progressive muscle relaxation therapy to reduce blood pressure, the results obtained after giving progressive muscle relaxation therapy for 3 consecutive days the client's blood pressure dropped from the initial examination of 170/100 mmHg to 158 /100 mmHg. at the time of the evaluation on the third day, the complaints of pain in the fabric progressed from all 5 to 4 pains. Therefore, it can be concluded that the provision of progressive muscle relaxation therapy may beneficial in providing nursing care for efforts to reduce blood pressure in the elderly with Hypertension grade 2.

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Effect of Social Skill Training on Social Interaction in Children with Autism

Spectrum Disorder: Literature Review

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Abstract

Background: Autism is a developmental disorder characterized by impaired language, communication, social interactions, and repeated interactions. Children with autism also have low social awareness and cannot understand or let go of other people's feelings. This causes autistic children to not empathize with others who are essential in social relations, so programmed therapy is needed to train social skills in children with autism spectrum disorder (ASD) through social skills training (SST).

Objective: To study the effects of SST therapy on the social interactions of children with autism spectrum disorder (ASD).

Methods: The method in this paper is a literature review. Search for research articles using a database of sciences from Science Direct, Scopus, ProQuest, Wiley Online Library, EBSCOhost, Sage Journal, and ClinicalKey. The inclusion criteria for this journal study are human research, discussion in English, free full text, and publications between 2012 and 2019. A total of 10 relevant articles are discussed in this literature review.

Results: SST therapy for children with ASD focuses on behavioral and social learning, where children are taught social skills such as making eye contact, starting conversations, and establishing cooperation with others.

Conclusion: The application of SST therapy to children with ASD can improve their adaptability to other forms of socialization and social skills and improve their daily lives.

Keywords: autism spectrum disorder, social interaction, social skills training

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INTRODUCTION

Autism is a developmental disorder characterized by disturbances in language, communication, social interaction, and repetitive behavior (Wang et al., 2018). Autism or autism spectrum disorder (ASD) is a persistent difficulty in social interaction and the presence of patterns of behavior, interests, or activities that limit or repeated (Maye, Kiss, & Carter, 2017). Children with autism have several distinctive characteristics, namely hyperactivity, obsessive behavior, or self-harm behavior (Sitimin, Fikry, Ismail, & Hussein, 2017). Children with autism seem disinterested in their peers and tend to avoid social interactions (Davis & Carter, 2014). According to the Centers for Disease Control and Prevention (2016), 1 in 68 children is diagnosed with autism, where boys suffer from autism 4.5 times more than girls. In Indonesia, the prevalence of autism is estimated to be close to a number that is not much different (National Center of Biotechnology Information, 2012).

Among 10-15% of autistic children, the level of intelligence is average or above average while 25% are at the borderline to mental retardation and the rest experience moderate to severe mental retardation (Hoogsteen & Woodgaet, 2013). As many as 85% of autistic children are born with limited cognitive and adaptive abilities. These limitations make children with autism need help in their lives. With heavy dependency, autistic children need help throughout their lives (Karst & Van Hecke, 2012). According to a review of psychopathology, the neurochemical system in autism shows an increase in serotonin in the blood and cerebrospinal fluid. In addition, post-mortem examination of autistic patients shows that the amygdala and hippocampus are underdeveloped, both of which are part of the limbic system, which plays a role in emotion regulation, aggression, sensory input, and learning processes. Genetic factors in several studies have also been mentioned as having a role in the incidence of autism (Volkmar et al., 2007).

Children with autism in their social interactions show behaviors such as minimal eye contact, flat affect, unable to play with peers, unable to feel what other people think, and lack of social relationships (unable to socialize) as well as lack in reciprocal way in adapting to the environment and emotional involvement. Children with autism also have less social awareness, so they cannot understand other people's non-verbal expressions or express their feelings. This causes autistic children to be unable to empathize with other people, which is an essential component in social interaction. Therefore, a therapy program is needed to train social skills in ASD children through social skill training (SST). SST in ASD children aim to improve self-control and social skills in daily activities (Yusuf, 2014). Social skill training (SST) is an intervention with behavior modification techniques based on the principles of role-playing, practice, and feedback to improve clients' ability to solve problems, it has been used among clients with depression, schizophrenia, clients with behavioral disorders having difficulty interacting, and clients with social phobias (Stuart, 2016; Vacarolis, 2010). Through this literature review study, the authors are interested in studying further the effect of SST on the social interaction of children with ASD.

METHODS

The method in this paper is a literature review. Search for articles using an electronic database there were Science Direct, Scopus, ProQuest, Wiley Online Library, EBSCOhost, Sage Journal, and ClinicalKey. The inclusion criteria for this journal review were research on humans in English, free full text, and the publication range between 2012-2019. The keywords used are "((social interaction) AND (child OR children) AND (autism OR autism spectrum disorder) AND (social skill training OR SST)). The search results found 216 related articles,

which were then selected by title and reviewed by reading the abstract. Twenty-two relevant articles were found. The ten articles discussed in this literature review are relevant and are available for free full text.
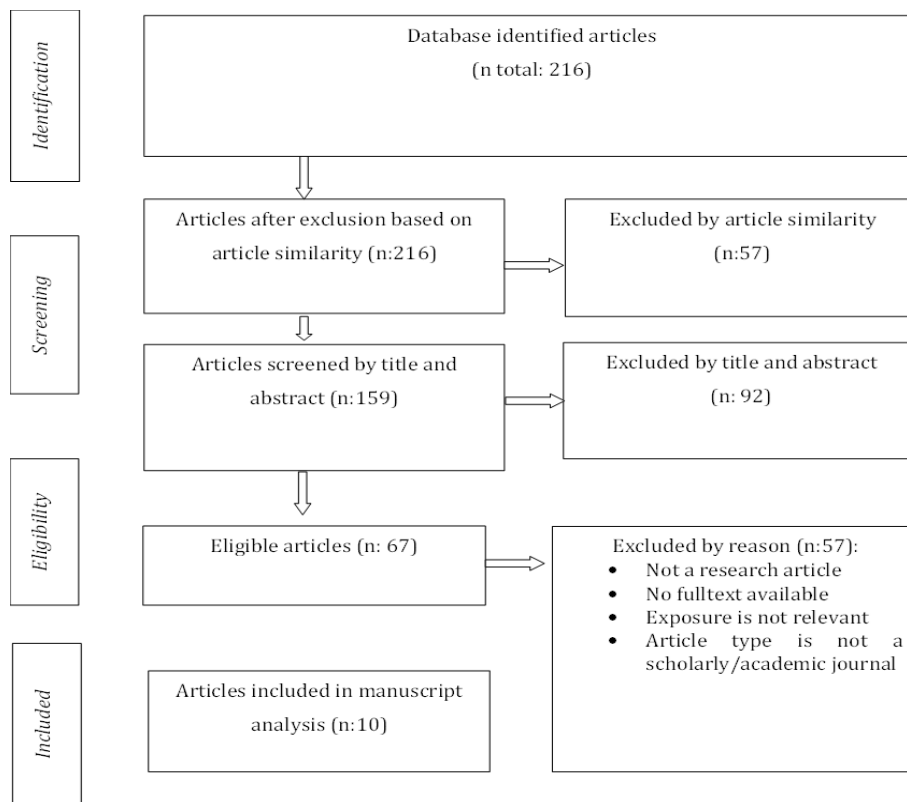
Figure 1. Article selection process

RESULTS

The following is a study related to Social Skill Training (SST) interventions in children with ASD:

Table 1. Treatment of SST in children with ASD

Author (year)	Types of Research	Result
(Choque Olsson etal., 2017)	*Randomised controlled trial (RCT)*	Social Skill Training (SST) in children and adolescents with autism spectrum disorder (ASD) positively impacts adaptive functioning abilities. Adolescents with ASD have greater motivation to develop social skills than children with ASD, who tend to be needed more support; this is related to the maturation and development of a cognitive function.

(Deckers, Muris, Roelofs, & Arntz, 2016)	*Experiment with control group design*	Social anxiety, ADHD symptoms, and social interaction motivation influence the effect of SST on children with ASD. However, SST is an effective intervention in children with ASD to improve social skills and can be applied daily clinical practice days.
(Radley et al.,2015)	*Experimental clinical study*	School-based SST in school children with ASD can improve social functioning. School-based SST has the advantage of having peers as a stimulus to train social skills in a natural environment.
(Gunning et al.,2019)	*Systematic review*	Generalizing intervention outcomes is significant for social skills training for children with ASD for various reasons. The development of social skills enhances social competence. This wide-ranging, complicated skill set enables children to engage with others, forge friendships and relationships, and negotiate challenging social contexts.
(Floress, Zoder-Martell, & Schaub, 2017)	*A multiple-baseline across behaviors design*	SST combined with relaxation training (RT) in school children with ASD shows an increase in social skills and a decrease in anxiety. SST and RT, such as deep breathing, can help children with ASD to be calmer (relax), an adaptive skill that becomes the target of therapy.
(Dekker, Nauta, Mulder, Timmerman,& de Bildt, 2014)	*Randomised controlled trial*	SST-PTI is an SST that involves parents and teachers in the process (SST with Parent & Teacher involvement). SST-PTI in children with ASD can improve abilities and adaptive functions such as socialization and other social skills in everyday life. Parents and teachers are involved in order able to support and assist children in doing social skills taught during the training.
(Freitag et al, 2013)	*Randomised controlled trial*	Social skill training (SST) has been recommended as a treatment in high-functioning autism spectrum disorder. Compared to treatment as usual, SST can improve social responsiveness, improvement of appropriate social responding, an increase of social motivation and social initiations, and reduction of interfering behaviors and promotion of skill generalization.

(McKenna, Flower,&Adamson ,2016)	*Systematic review*	Children with emotional and behavioral disorders are at risk of experiencing social functioning barriers, including children with ASD. According to a systematic study, SST in this risk group effectively improves social skills.
(Deckers et al, 2014)	*Experimental clinical study*	The desire for social interaction (social interaction desire) in children with ASD affects the outcome of SST therapy.
(Chang et al., 2012)	*Randomised controlled trial*	SST is less effective in being applied to children with ASD and comorbid ADHD because it is difficult to focus attention on ADHD, which can interfere with the process of learning social skills, hyperactive behavior can disrupt groups, and impulsivity can hinder them from applying their abilities.

DISCUSSION

Children with ASD experience problems controlling behavior in the form of hyperactivity, aggression, self-harm behavior, and withdrawal behaviors such as depression and anxiety (Watson, Hayes, Radford-Paz, & Coon, 2013). The results of Floress et al. (2017)'s research regarding SST combined with relaxation training (RT) can be applied to overcome anxiety responses that appear in children with ASD.

SST in children with ASD can also be carried out through school-based programs by providing a natural environment with peers as a stimulus (Radley et al., 2015). This research illustrates the benefits of school on the development of autistic children. This is supported by previous research, which states that autistic children who attend inclusive schools show an improvement in behavior (Koegel, 2011). Even so, there are some obstacles in the learning process for autistic children because of the lack of cooperative skills and hyperactive behavior. SST can be the primary treatment option for conditions because, in SST, children with ASD will be trained through behavioral and social learning, where children are taught social skills such as making eye contact, starting conversations, and establishing cooperation with others (Freitleg et al., 2013).

Research states that parents of children with ASD are at risk of experiencing

psychosocial stress from depression, anger, deep sadness, rejection of conditions children, and self-blame. Parents of children with autism also have a lower quality of life than parents of typical children (Neff & Faso, 2014). The ability of parents to adapt is directly proportional to the ability to care for children and overcome problems in caring for them. On the other hand, it can also strengthen the marriage bond (Doron & Sharanbany, 2013). This explains the importance of parental involvement in caring for children with ASD, including in implementing SST therapy programs. A RCT study on SST therapy programs involving parents and teachers in the process (SST with Parent & Teacher Involvement), suggested that SST-PTI in children with ASD can improve adaptive functioning abilities such as socialization and other social skills in everyday life (Dekker, Nauta, Mulder, Timmerman, & de Bildt, 2014).

Meanwhile, according to a study of social motivation theory in autism, social problems in ASD children come from low interest or desire to interact with other people, so the desire for social interaction (desires for social interaction) is an essential factor influencing the effects of SST therapy. ASD children with a low desire to engage in social interaction will be less motivated to participate in SST therapy and vice versa, so the positive impact of SST will be felt more in ASD children who have a strong desire for social interaction (Dekkers et al., 2014).

CONCLUSION

Autism is a developmental disorder characterized by disturbances in aspects of language, communication, social interaction, and repetitive behavior. Children with ASD experience problems controlling behavior in the form of hyperactivity, aggression, self-harm behavior, and withdrawal behavior such as depression and anxiety. SST therapy for children with ASD focuses on behavioral and social learning, where children are taught social skills such as making eye contact, starting conversations, and establishing cooperation with others. The application of SST therapy in children with ASD can improve adaptive function abilities such as socialization and other social skills in daily life.

Health workers, especially nurses, can understand the characteristics of clients, especially clients with special groups, such as those with autism, so that they can provide appropriate therapy programs according to client needs based on evidence-based nursing practice. An overview of evidence-based nursing practice in the form of nursing interventions

that are successfully used in children with autism is provided through analysis of the literature review's findings, including social skill training (SST). SST in autistic children not only focuses on teaching social-based rules, social understanding, and social practice skills, but it also includes executive function training, anger management techniques, behavioral and cognitive flexibility training, and other techniques to combat stereotyped behaviors and intense special interests that obstruct social interactions. Thus, this study addresses various issues children and teenagers with ASD face daily.

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