

Original Research Article

Effect of Physical Modality Therapy on the Independence of the Elderly in the Working Area of the Bontonyeleng Community Health Center

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Abstract: Background: Based on a preliminary study conducted by researchers in Taccorong Village, the working area of the Bontonyeleng Health Center, it was found that the independence of the elderly was low because this was caused by the lack of personnel who carried out physical modality therapy, then based on preliminary data on hypertension sufferers as many as 594 people consisting of men as many as 224 people (37%) and women 374 people (63%). **Research Objectives:** The effect of physical modality therapy on the independence of the elderly in the work area of the Bontonyeleng Health Center. **Research Methods:** Research design is *pre-experimental* with a *one case study* approach. The population is all the number of the elderly. The sample size is an estimate of 38 people. The hypothesis test is the *Mc Nemar* Test. The study was conducted in the Bontonyeleng Health Center Working Area. **Research Results:** The level of independence of the elderly before the intervention was not independent, namely not independent, which was higher than independent while after the intervention, the elderly's independence was higher than the independent elderly. The hypothesis test using the *Mc Nemar* test obtained a $P\text{ value} = 0.000 > \alpha = 0.05$. **Conclusions and Suggestions:** There is an effect of physical modality therapy on the independence of the elderly in the Bontonyeleng Health Center Working Area. We recommend that further research use a longer time.

Keywords: Physical Modality Therapy, Independence, Elderly.

PRELIMINARY

An elderly person is someone who reaches the age limit of more than 60 years or more. Along with the increase in the number of elderly, there are problems experienced by the elderly which in the end are psychic and physical problems, such as pathological in physical conditions such as being attacked by various chronics and psychic conditions such as stress, depression, distress, so that the independence experienced by the elderly decreases. The increase in the number of elderly can also affect aspects of their lives, including physical, biological, psychological, social changes and the emergence of degenerative diseases due to the aging process (Azizah, 2011) Deep (Miftahuddin Habibullah, 2018). Meanwhile, according to the Ministry of Health in Han um (2018) classifying the level of the elderly into three groups, namely: the early elderly group (55-64 years), the elderly group (65 years old), the high-risk elderly group, namely the elderly who are more than 70 years old.

The more aging a person is, the state of health will also decrease. It is known that the prevalence of the disease that is often suffered by the elderly is hypertension, which is 26.5% of the Indonesian population who experience hypertension while in the age group of ≥ 60 there are 57.6% of the population aged more than 60 who experience hypertension. In addition to hypertension in general, rheumatoid arthritis is 0.5% to 0.8% of the world's elderly population, osteoarthritis is 0.2% and stroke is 10.2% (Nugroho *et al.*, 2016). The thing that is often felt by the elderly is physical disorders due to disturbances in the muscolocclatal system, because in *mindset* the elderly have to stay at home so that the physical condition of the elderly is poorly trained. This can interfere with the physical condition of the elderly.

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Factors that influence the decline in independence (*activity daily living*) such as age, psychological function (such as anxiety, sadness, and depression), physical condition, cognitive function. The independence of the elderly that decreases or becomes dependent will have an impact on the psychic of the elderly. This is because the elderly feel that they are a disabled, sick person, and can only depend on others, causing feelings of anxiety (Lestari, 2013 In (Aini *et al.*, 2019)

To be able to live independently, the elderly must be able to adjust to the changes that occur. Suhartini (2004) in his research there are several factors related to independence in the elderly, namely health conditions, social conditions, and economic conditions. The elderly can be independent if their health condition is in good condition. Socially, the independent elderly carry out social activities, have a good relationship with the family and have the support of the family and the community.

The process of change that occurs in the elderly is a process of slowly disappearing the ability of tissues to improve themselves or replace themselves and culture, improving the physical, psychological and social development of members. Elderly dependence is caused by the condition of the elderly who experience a lot of physical and psychic declines. Meanwhile, when viewed from the level of independence, which is assessed based on the ability to carry out daily activities. Lack of physical immobility is a problem that is often encountered in elderly patients due to various physical, psychological, and environmental problems experienced by the elderly. Immobilization can lead to complications in almost all organ systems. The mental health condition of the elderly shows that in general the elderly are not able to carry out daily activities (Malida, 2011) In (Rohaedi *et al.*, 2016).

Independence is the ability or circumstance in which an individual is able to take care of or overcome his own interests without being dependent on others, Increasing the dependence ratio on the elderly will result in an increase in the burden on the family, society and government, especially to the health needs of special services such as health and nutrition that will cause a social burden. An increase in the number of elderly people will have various impacts, especially on dependence. This increase in the dependence rate of the elderly is due to physical, psychic, and social deterioration.

The decline in independence (*activity daily living*) is influenced by such as age, psychological functions (such as anxiety, sadness, and depression), physical condition, cognitive function. The independence of the elderly that decreases or becomes dependent will have an impact on the psychic of the elderly. This is because the elderly feel that they are a disabled, sick person, and can only depend on others, causing feelings of anxiety (Lestari, 2013 In (Aini *et al.*, 2019).

Modality therapy is a recovery process by means of recovery therapy by means of muscle exercises to strengthen the ability, the importance of physical modality therapy, namely improving the level of perfection of the ability to move the joints normally, increasing and improving muscle tone, preventing joint stiffness, facilitating blood circulation, increasing joint mobility, and improving muscle tolerance for exercise. Lack of physical activity is an independent risk factor for chronic diseases and is overall expected to occur globally (Suciana *et al.*, 2019).

METHOD OF IMPLEMENTATION

The research was conducted in the BontoHealth Center Working Area. The research design is quantitative with a *pre-experimental* design approach to a *one case study* approach. The independent variable is physical modality therapy and the dependent variable is the independence of the elderly. The population in this study was all elderly patients with complaints of hypertension in the Bonto Health Center Working Area in Bulukumba District. The sample size was 38 people using *simple random sampling techniques*.

This modality therapy instrument is to use an instrument in the form of an observation sheet using the *Barthel ADL* Index which consists of daily activities that have their respective weights and values, ADL: >20, Independent 20, Mild dependence 12-19, Moderate dependence 9-11, heavy dependence 5-8, total dependence 0-4. This instrument of elderly independence is the bartel index (IBI) which functions to measure functional independence in terms of self-care and mobility and can be used in assessing efficacy.

Data obtained through questionnaire sheets and observations using the *Mc Nemar* test. This test aims to see whether or not there is a significant difference in proportion between the observed frequency distribution and the degree of meaningfulness of 0.05. If the P-Value, < 0.05 means that there is a meaningful relationship (Ho is rejected) while the P-Value > 0.05 means that there is no meaningful relationship (Ho is accepted).

RESULTS AND DISCUSSION

1. Post Test

Based on Table 1, it can be seen that from 38 respondents, it is known that the level of independence of the elderly before being given the intervention is higher, not independent than the independent ones. According to researchers, respondents' ignorance of the therapy that must be done and the need to be more active in activities makes the elderly lazy to do things. Another thing that can cause the elderly to become less independent is the decrease in movement function due to suffering from a disease.

Table 1: Frequency Distribution of Respondents Based on the Level of Independence before Physical Modality Therapy in the Bonto Health Center Work Area

Level of Independence Before Intervention	Frequency (f)	Percentage (%)
Self-sufficient	2	5.3
Not Independent	36	94.7
Total	38	100

Independent is the freedom to act, independent of others, unaffected on others and free to self-regulate or the activities of a person both individually and in groups of various health or diseases (Samsi, 2015).

This research is in line with Hamzah's research (2014) entitled The Effect of Occupational Modality Therapy on the Level of Independence of the Elderly in the Tresna Werdha Gau Mabaji Social Institution, Gowa Regency. The results of the study are that before being given the intervention, the level of independence that is desired is not independent is higher than that of independent, independent, what is meant here is to be able to carry out daily activities that are usually done.

Researchers assumed that the independence of the elderly in this study before being given the intervention was still classified as very dependent. Based on the researchers' deepening, the respondents' independence was influenced by health conditions, because some respondents with young elderly age such as 55 years old were still with aerospace, this was due to their weak condition and suffering from diabetes mellitus. Where we know that people with DM do sometimes have muscle disorders such as tingling or neuropathy. Based on the lowest level of ADL (*activity daily living*) is self-care activities.

According to Papalia (2002) in Alfyanita (2018), with increasing age, there will naturally be a decrease in the ability to function to take care of oneself and interact with the surrounding community and will be increasingly dependent on others.

2. Post Test

Based on Table 2, it can be seen that from 38 respondents, it is known that the level of independence of the elderly after being given the intervention is higher, namely 37 independent people (97.4%) than those who are not independent only 1 person (2.7%). The independence of the elderly in ADL is defined as a person's independence in carrying out activities and functions - functions of daily life - which are carried out by humans regularly and universally (Ediawati, 2013).

Table 2: Frequency Distribution of Respondents Based on The Level of Independence After Physical Modality Therapy in the Bontonyeleng Health Center Work Area

Level of Independence After Intervention	Frequency (f)	Percentage (%)
Self-sufficient	37	97.4
Not Independent	1	2.6
Total	38	100

*Data Primer

This research is in line with the research conducted by Pramono (2012) with the title of research on the effectiveness of ROM (*range of motion*) exercises on increasing the independence of ADL (*daily living activities*) in the elderly. The results of the study showed that there was a change in the dependence of the elderly from the highest severe dependence before the intervention and to mild dependence after the intervention. The intervention in this study was used to train movements in order to maintain muscle or joint function and flexibility of joints and stimulate blood circulation so that the elderly can carry out activities.

Researchers assume that physical modalities given simultaneously 2 times a day in the morning and evening for 5 days to the elderly prove that it can change the independence of the elderly. Based on the highest level of ADL (*daily*

living activity) is the transfer or change places easily. The success of physical modality therapy in respondents accompanied by assiten was also monitored through a *cheklist* provided by the researcher's assistant consisting of the respondent's family and staying at home so that the assistant could monitor the respondent for 5 days.

3. The effect of physical modality therapy on the level of independence of the elderly

Based on Table 3, it can be seen that from 38 respondents, that the level of independence before the intervention can be seen that there is a higher rate of infertility, in contrast to the level of independence after being given the intervention, it is known that there is an increase in the independence of the elderly, which is higher in independence than not independent. The results of the *Mc Nemar* test obtained a value of $p = 0.000$ ($< \alpha = 0.05$) which means that there is an influence of physical modality therapy on the level of independence of alerta in the work area of the BontoHealth Center.

The type of physical modality therapy given is to use passive *range of motion* (ROM) covering the neck, spina, cervix, upper extremities and lower extremities namely: joints, shoulders, elbow joints, wrist joints, groin joints, knee joints and ankle joints. The exercise given can create increased pressure on the muscles and provide more stimulation to the muscle fibers thus giving strength to the muscles and expansion of the joints to move more often.

Table 3: Effect of Physical Modality Therapy on the Level of Independence of the Elderly in the Bontonyeleng Health Center Work Area

Level of Independence Before Intervention	Level of Independence After Interference		Total	P value
	Self-sufficient	Not Independent		
Self-sufficient	2 (5.4%)	0 (0%)	2 (5.3%)	0,000
Not Independent	35 (94.6)	1 (100%)	36 (94.7%)	
Total	37 (100%)	1 (100%)	38 (100%)	

* Uji Mc Nemar

Exercises are given 2 times a day, namely morning and evening for 5 days, this is done to activate more often muscle and joint fibers for 5 days simultaneously. This treatment was evenly carried out to respondents because among many respondents some were post-stroke, osteoarthritis and rheumatism, besides that there were elderly people who had degenerative diseases so to avoid data habits, it was carried out only 5 days related because respondents were quite a lot for the intervention category research. This study was carried out 1 visit with therapy by the researcher, then carried out by the assistant, namely the family who accompanied the respondents by looking at the guidelines and check materials for the respondents' daily activities.

In the study after physical modality therapy, most of the respondents' main activity returned but was still slow, this is indeed because this is the beginning of what the elderly should have done. The elderly in this study are still unable to carry out social activities. Factors that affect the independence of the elderly according to Priharjo (2011) are fundamental factors that affect a person's activities, namely the level of energy in the individual, the conditions of certain diseases, cultural factors and habits of a person. Individuals who often engage in action activities will develop activity skills faster than those who are not happy with activities. Meanwhile, *theorary activity* according to Nugroho in Samsi (2015), states that successful elderly people are those who are still active in carrying out activities and participate in many social activities.

Independent is said to take care of yourself and be able to carry out daily activities without the help of others. Daily life activities are routine daily work such as eating/drinking, bathing, walking, sleeping, sitting, defecation/tub, and moving (Samsi, 2015).

The research is in line with the research conducted by Hamzah (2014) with the research title the Effect of Occupational Modality Therapy on the Level of Independence of the Elderly in the Tresna Werdha Gau Mabaji Social Institution, Gowa Regency. The results of the study were the influence of occupational modality therapy on the level of independence of the elderly. The occupational modality therapy given to the elderly here is physical movement training and *daily living activity exercises*. This occupational therapy provides good feedback to the elderly because it can increase the independence of the elderly.

This research is also supported by a theory that says that modality therapy is a recovery process by means of recovery therapy by means of muscle exercises to strengthen abilities, the importance of physical modality therapy, namely improving the level of perfection of the ability to move joints normally, increasing and improving muscle tone, preventing joint stiffness, facilitating blood circulation, increasing joint mobility, and improving muscle tolerance for exercise. Lack of physical activity is an independent risk factor for chronic diseases and is overall expected to occur globally (Suciana *et al.*, 2019).

Researchers assumed that there was an increase in the level of independence in the elderly because the average respondent followed the researcher's direction according to the physical modality therapy program carried out in 2 times a day. However, there are still respondents who have a moderate level of self-reliance or moderate dependence, although there has been an increase, this is because the time for giving the therapy given is only 5 days. Another thing that can be an influencing factor is the patient's health condition. The evaluation of independence in this study found moderate dependence. Meanwhile, the independence with mild dependence is that there are still one or two activities that should be assisted by the family.

CONCLUSION

Kemandirian elderly before the intervention was obtained not independent higher than the independent elderly, the independence of the elderly after the intervention was obtained independent elderly was higher than the elderly who were not independent. the need for further research on the influence of physical modality therapy by involving a small number of samples to be more focused, longer research times, and stricter methods of controlling causal factors.

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