

DIFFERENCES OF BRAIN GYM AND GYMNASTICS WITHOUT MUSIC AGAINST DEPRESSION IN THE ELDERLY

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ABSTRACT

Background: Indonesia's elderly population is increasing with increasing life expectancy. Changes in mental health that usually becomes a problem in the elderly is depression. Depression in the elderly need to be addressed, one with creative therapy. Creative types of therapy that can influence the elderly depression is like Brain Gym and elderly gymnastics. These activities can be carried out in the elderly in the community with ease because it is their neighborhood health center and also does not require music.

Purpose: This study was conducted to determine differences in the effect of brain gym and gymnastics elderly to depression in elderly Posyandu Elderly Patent Canyons, Rejowinangun North, Central Magelang, Magelang City

Method: The approach in this study is quantitative research design with two non-equivalent group pretest posttest design. The sampling technique used is saturated samples involving all the elderly who experience depression as a sample with 56 elderly measured by GDS 15-Items. The intervention is done 2 times a week for 1 month with a time of 30 minutes.

Results: The results showed that there were no differences influence of Brain Gym and exercise the elderly to depression in the elderly due to results obtained Mann Whitney test p value 0.051 ($p > 0.05$).

Conclusion: No difference elderly Brain Gym and exercise for depression in the elderly, but these activities can be applied to the activity of the elderly in reducing and preventing depression in the elderly due to the activity can lower GDS scores 15-Items.

Keyword: *Brain Gym; depression in elderly; gymnastics for elderly*

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Background. In Indonesia, with increasing life expectancy of the population reached 70.8 years in 2015, the number of elderly people in Indonesia is increasing in 2018 there were 85.89 million people, which is 5.8% of the total population of Indonesia (Bappenas, 2018). Elderly often experience changes in mental functions of the body and as a result of the aging process, mental changes in the elderly occur due to feelings of loneliness, irritability and a feeling

useless. If it happens continuously, it will cause stress to depression elderly (Utami, et all, 2018).

In the elderly with age 60-74 years, the rate of depression will increase because of the increasing burden of a problem and their age (Wulandari, 2014). Elderly depressed growing more years because of the increase in life expectancy in Indonesia and worldwide. The prevalence of depression in Indonesia which is about 6.1% or about

14 million people of the total population of Indonesia (MOH, 2016).

Treatment and prevention of depression there are several ways, namely by pharmacological and psychotherapy or a combination of both (Hawari, 2011). Handling pharmacologically with antidepressant and anti-anxiety drugs, the effects of these drugs usually causes a person to become addicted and other adverse effects when used continuously (Ningtyas, 2016). Psychotherapy is the most effective and efficient way to restore people's mood is no exception people with depression. One of psychotherapy is creative therapy such as the elderly and Brain Gym exercises (Devakani et al., 2018).

Brain gym and gymnastics elderly can be used as a solution to reduce depression in the elderly (Utami, 2018; Ansoni, 2014). Brain Gym is useful for improving blood flow to the brain so that the increased supply of oxygen in the brain (Yanuarita, 2012), relaxes the brain such as eliminating negative thoughts, stimulates the coordination of both sides of the brain such as the release of muscle tension that makes relax and reduce barriers to focus on the brain, such as repairing their less attention (Prasetya, 2010). Meanwhile, elderly gymnastics beneficial for blood circulation and increases the amount of blood volume in the body so endorphine launch production in the brain that give the effect of pleasure and able to control stress (Wiaro, 2013), distancing the individual against feeling depressed (KOWEL, 2016).

Based on preliminary studies conducted in Posyandu in Patent Canyons Village North Rejowinangun using the Geriatric Depression Scale (GDS-15 Items). Of the 96 elderly people aged 60 to 74 earned 64 elderly people get depression score of 5 to 11.

Based on these results researchers interested in studying "Brain Gym and Senan difference to the Depression in the Elderly Elderly in Paten Gunung Rejowinangun, Central Magelang Magelang City"

Purpose. This research was conducted in IHC Elderly Patent Canyons, North Rejowinangun, middle Magelang, Magelang City. Respondents in this study is the 60-74 year-old elderly who experience depression.

Methods. The study design used in this study is Quassi Experiment with the study design with two non-equivalent group pretest posttest design. Sampling technique used is total sampling. Bivariate test performed with the Mann-Whitney test with result p value <0.05, then there is a difference between the Brain Gym and elderly gymnastics.

Result and Discussion. Based on research conducted at the Brain Gym group there were 26 respondents with a score of GDS 15-Items 5-8 and 2 respondents with a score of GDS 15-Items 9-11 before being given a Brain Gym. After being awarded the Brain Gym intervention, respondents decreased 15-Items GDS as much as 25 respondents, GDS score of 15-Items equally between pretest and posttest rise as much as 2 respondents and 15-Items GDS score at 1 respondent. There are 23 respondents with a score of GDS 15-Items 0-4 and 5 respondents with 15-Items GDS score 5-9. Median on a 15-Items GDS score after Brain Gym is 6, while the mean obtained at 3:39. Then, the Wilcoxon test different pretest and posttest in this group shows the results of $p = 0.000$ ($p < 0.05$), which means there is the effect on depression in the elderly after the Brain Gym.

According Panglipurethias (2015) Brain Gym activities may affect a depression in the elderly because their movements are capable of increasing

blood circulation to the brain so as to increase the oxygen in the brain that affects the brain relaxes and can create a relaxing effect on the brain. In addition, the influence of a decrease in depression in the elderly supported by research Utami (2018) with a median difference in depression scores of 4.5 and test results p value of 0.000 ($P < 0.05$).

Based on research conducted on elderly gymnastic group before treatment is given in the form of gymnastic elderly, there are 27 respondents with 15-Items GDS score 5-8 and 1 respondent with a score of GDS 15-Items 9-11. After being given the elderly exercise intervention, respondents experienced a decrease and increase. There are 21 respondents with 15-Items GDS score 0-4 and 7 respondents with 15-Items GDS score 5-9. Results The median score of GDS 15-Items after gymnastics elderly is 4, while for the results of a mean of 3.98. Pretest and posttest different test conducted by Wilcoxon in this study resulted in p equal to 0.000 ($p < 0.05$), which means the elderly exercise influence on depression in the elderly.

Event gymnastics elderly people able to give effect to the depression in the elderly by aligning motor function, breathing and thinking center for motion used not only involve the centers of the movement of certain muscles in the brain but also the brain centers (high cortical functions) (Widianti & Proverawati, 2018). Movement in gymnastics elderly is also included in the muscle movements are causing the load so as to facilitate the elderly to do this activity as a routine activity undertaken (Fitriany, 2011). The influence of harmony with Ansoni study (2014) that there is an influence on elderly depression after elderly gymnastics with the result p value 0.001 ($P < 0.05$).

After donetest Mann Whitney statistic that the result value of $p = 0.051$. These results may imply that there is no significant difference of granting Brain Gym exercises and gymnastics elderly to reduce depression in the elderly. That is because the value of p value > 0.05 . However, there is a difference in mean rank results in both groups. Brain Gym on the results mean rank of 24.38, while the elderly gymnastics results mean rank of 36.62 so it can be interpreted that the decrease in depression in Brain Gym higher than the elderly gymnastics.

Sports spontaneously increases the activity of endogenous opioids that β -endorphin. The function of these opioids is increasing in inhibiting the stress response control of physical and psychological stressors. Another function of endorphin is a sedative which is beneficial in reducing the perception of pain, improved sleep and trigger feelings and a positive outlook (Sujana, 2015). According Wiarto (2013) activities of gymnastics for the elderly with depression can help the elderly to develop social skills and if people do gymnastics it will be blood circulation smoothly, and increase the amount of blood volume in the body so that it will be able to lead the process of endorphins that can cause a sense of joy, pain missing, and were able to reduce the level of depression suffered by the elderly.

Besides the more a person's social interaction with others, the more easily a person is to respond to stressors coming at him (Rau, Rompas, and Kallo, 2018). However, if the elderly experience loneliness will feel that they are not useful to make the elderly susceptible to depression (Conservation & Huda, 2018).

According Kusumowardani (2012), social interaction can be one of the

causative factors depression in the elderly. Where the elderly who often have social interaction then scores of depression in the elderly is getting low, but if the score of depression in the elderly is high then low intensity of social interaction. Brain gym and gymnastics elderly comparable in giving effect to the depression in the elderly because it is able to do sports activities individually or in groups and can be a means of social interaction for the elderly.

Conclusion and Suggestions.

Conclusion

1. Based on the pretest and posttest Wilcoxon test conducted at the Brain Gym group showed $p = 0.000$ ($p < 0.05$), it can be concluded that there is a significant difference between pretest and posttest on Brain Gym group after the intervention.
2. Based on the Wilcoxon test pretest and posttest on elderly exercise group showed that the results $p = 0.000$ ($p < 0.05$), it can be concluded that there is a significant difference between pretest and posttest on elderly exercise group after the intervention.
3. The results of different test statistics with Mann Whitney test between the Brain Gym and group gymnastics elderly found that the result p value 0.051 ($p > 0.05$), which means that H_0 is accepted, thus it can be concluded that there is no difference in the effect of the Brain Gym and exercise the elderly against depression elderly. However, there is a difference in mean rank results in both groups at 8:24. Brain Gym on the results mean rank of 24.38, while the elderly gymnastics results mean rank of 36.62 so it can be interpreted that the decrease in

depression in Brain Gym higher than the elderly gymnastics.

suggestions: For the elderly, Brain Gym without music or gymnastics elderly without music can be applied in everyday activity to prevent and reduce depression. For educational institutions, the provision of the Brain Gym exercises elderly or capable of becoming one of the alternatives for depression in the elderly in nursing care gerontik. Whereas, for other researchers, prior to performing the same study recommended to be done by randomization.

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