

Management Of Hypertension In The Elderly With Defansi Exercises

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Abstract.

The present study reports the first comprehensive study on the freshwater macroinvertebrates and its habitat preferences in Bilah River, the largest river in the Northern Sumatra. The riverside is characterized by the presence of anthropogenic and industrial activities which may alter the macroinvertebrate assemblage and biodiversity. Five months of investigation on 10 sampling stations from December 2016 to October 2017 was conducted based on the river flow in Bilah River. Principal component analysis indicated a decrease in trophic status from upstream to downstream of the river. A total of 27 taxa were recorded, with the most abundant group were members of Odonata, Gastropoda, and Decapoda. The highest density of macroinvertebrate was observed from station 1 (160 ind m⁻²), while the lowest density was observed from station 9 (38.64 ind m⁻²). Based on species distribution and similarity, two groups of habitats may be distinctively recognized based on the Bray-curtis similarity coefficient. Group 1 consisted of station 1, 2, 3 and 4 while group 2 consisted of station 5, 6, 7, 8, 9, and 10. Based on the diversity indices as ecological parameters, the habitat condition in Bilah River is categorized from low to moderately polluted. Spatial patterns in both environmental conditions affecting the macroinvertebrate assemblage was observed using canonical correspondence analysis (CCA) revealed the preferences from each macroinvertebrate species towards environmental conditions.

Keywords: Bivalvia, bray-curtis, canonical correspondence analysis, density, and gastropoda.

I. INTRODUCTION

Hypertension or often known as the silent killer because hypertension is usually able to occur without any complaints or symptoms¹. The prevalence of hypertension globally according to WHO is 22% of the total world population. The highest prevalence is in Africa at 27% and Southeast Asia is the 3rd highest with a prevalence of 22% of the total population². Based on data³ hypertension occurred in the age group of 18 years (34.1%), 31-44 years (31.6%), aged 45-54 years (45.3%), 55-64 years (55.2%) [1]. Then the prevalence of hypertension in the elderly in Indonesia is 63.2% in the age group of 65-74 years, and for the age group over 75 years is 69.5%. South Kalimantan 44.1%, and the lowest in Papua 22.2%. The situation analysis that has been carried out is an effort to explore information, potentials and constraints that exist as reference material to community service activity programs in the form of assisted village activities. From the analysis of the team's situation, the initial steps taken before the implementation of the activity, the service first made observations to the condition of the community service location in Tambak Baru Ilir village, Martapura District, Banjar Regency City. At the observation stage, direct observation is carried out in the field, conducting dialogue with related parties in the community, and observing conditions that involve physical and non-physical. On February 20, 2024, the service also carried out research with the theme of hypertension and it was found that the majority of elderly who visited the elderly posyandu had hypertension. In Tambak Baru Village itself, in October 2023, the number of elderly people suffering from hypertension who visit the elderly posyandu is 40 people. The results of the previous gerontics division service obtained data that the majority of 65.7% of people had hypertension and rarely did movements such as gymnastics.

Biologically, the elderly are people who experience a continuous aging process, which is characterized by decreased physical endurance, which is increasingly vulnerable to diseases that can cause death^[2]. Efforts that can be made by people with hypertension to lower blood pressure can be done with two types, namely pharmacologically and non-pharmacologically. Pharmacological therapy can be done using antihypertensive drugs, while non-pharmacological therapy can be done with various efforts such as overcoming obesity by losing excess weight, giving potassium in the form of food with fruit and vegetable

consumption, reducing salt and saturated fat intake, quitting smoking, reducing alcohol consumption, creating a relaxed state and regular physical exercise (exercise)[3]. In Solihin research (2014)[4], it was found that there was an effect of giving elderly gymnastics on reducing blood pressure in hypertension. Blood pressure in the systole decreased while in the diastole blood pressure did not experience significant changes. Kritiani's research (2018)[5]. found the results of the influence before and after giving elderly exercise on the blood pressure of hypertensive patients after elderly exercise was carried out 3 times a week within 40 minutes. Physical activity such as elderly gymnastics can encourage the heart to work optimally, where exercise can increase energy needs by cells, tissues and organs, so as to increase backflow to the veins and cause the volume of a cup that will directly increase cardiac output. After doing gymnastics continuously, the blood vessels will be more elastic and the decrease in blood pressure will last a long time[6]. The purpose of implementing this community service is that the elderly and their families understand hypertension and are able to carry out non-pharmacological management, namely with defancy exercises.

II. METHODS

The location of this Community Service activity is located in Tambak Baru Ilir Village, Banjar Regency, South Kalimantan. The media used is a sphyngomanometer. Then carry out defancy exercise for elderly. There are three stages of activity, namely: Preparation The first step in this community service activity is to make observations about health problems that are often suffered by the community. Furthermore, the Community Service screened health problems in the community and it was found that the elderly in Tambak Baru Ilir Village mostly suffered hypertension. Then check the blood pressure. The next step, devotees will teach defancy exercise to overcome hypertention in the elderly for 30 minutes, done according to the ability of the elderly while relaxing the muscles of the elderly body so that it is relaxed / comfortable. After completion, the elderly rest first for 10 minutes before doing the next activity



Fig 1. Defancy exercise activities



Fig 2. Relax after defancy exercise

Monitoring and evaluation

Monitoring and evaluation (monev) is carried out directly to the target. Monitoring and evaluation is carried out by conducting discussions and questions and answers after implementation defancy exercise in Tambak baru ilir Village. This evaluation aims to determine the Elderly Feelings After Performing defancy exercise. The results of the evaluation are both through questions and answers and the implementation of defancy exercise, All elderly are enthusiastic when participating in defancy exercise and can follow defancy exercise activities provided and some elderly experienced a calm feeling. Overall, defancy exercise can be carried out by all elderly in Tambak Baru Ilir Village.



Fig 3. Elderly demonstrate defancy exercise

III. RESULT AND DISCUSSION

Results of the elderly age and grade of hypertension conducted in Tambak baru ilir Village which was attended by 35 participants. Participants were enthusiastic about the activities carried out. Data collection was carried out in Tambak baru ilir Village on February 20, 2024.

Table 1. The elderly age

Usia lansia	f%
45-54 tahun	1645,7
55-65 tahun	1440
66-74 tahun	514,3
Total	35100

Table 1 explains that the majority of the age much as 16 partisipant (45,7%).

Table 2. Grade of hypertension

Grade	f	%
Pre hipertensi	11	31,4
Ht Grade 1	11	31,4
Ht Grade 2	10	28,6
Ht Grade 3	3	8,6
Total	35	100

Table 2 explains that the majority of grade of hypertension was pre hypertension and hypertension grade 1, which is as much as 11 partisipant (31,4%).

The next stage, the implementation of community service, first the elderly will have their blood pressure measured then begin to practice defancy gymnastics together with the service. This is in line with our study of nursing interventions based on Levine's conceptual model for blood pressure recovery in the elderly, It was found that physical activity-based interventions were effective for treating hypertension in the elderly ($p = 0.016$)[7]. At this time, nonpharmacological therapy is prioritized in management before conducting pharmacological therapy to reduce the side effects of drug use. This is in line with Devi's journal where asymmemic therapy (listening to Asmaul Husna, relaxation of handgrip and aromatherapy) is used in lowering blood pressure in the elderly[8].Dimeo [9] in the journal Aerobi Exerise Reduce Blood Pressure in Resistant Hypertention which states that regular physical activity can reduce high blood pressure if done for 30 to 45 minutes every day. Physical activity that can be done regularly is doing aerobic exercise reducing

systolic blood pressure 3 to 5 mmHg and diastolic blood pressure 2 to 3 mmHg. One of the factors that affect physical activity in the elderly is age. The age of respondents in this community service shows that the majority are aged 45-54 years with the number of respondents 16 or 45.7%. This result is supported by theory[10] which says that a person's age shows signs of will and ability or how a person reacts to the inability to carry out daily activities.

In this community service, elderly people had the highest percentage of blood pressure in the pre-hypertension and grade 1 hypertension categories, as many as 31.4% or 11 respondents. These results are supported by research by Emdat[10] at the Posyandu for the Elderly in Pangaran Village, Sumenep City District, namely that 37 people (42.1%) suffered from grade 1 hypertension. This is also in accordance with Diana's journal, where from the results of health screening for the elderly in Astambul Village, Banjar Regency, data on the majority of diseases was found, namely hypertension, 42.8% [11]. The longer you do defansi exercises, the more relaxed your blood vessels will be, the healthier your body will become and will also cause a gradual decrease in blood pressure. This is supported by Fetriwahyuni [12] in the journal the effect of low impact aerobic exercise on the blood pressure of hypertensive sufferers who stated that doing low impact aerobic exercise can reduce blood pressure which occurs because blood vessels experience dilation and relaxation which can also reduce peripheral resistance. A decrease in blood pressure also occurs due to reduced heart pumping activity. The heart muscles of people who exercise regularly are very strong, so the heart muscles of individuals who exercise regularly contract less than the heart muscles of people who rarely exercise to pump blood volume [12].

IV. CONCLUSION

Community service activities in the form of Defansi exercise for hypertension in elderly conducted in Tambak baru ilir Village one of the efforts to overcome the hypertension in elderly. Method of activities carried out by measure the elderly's blood pressure, then carry out interventions in the form of defansi exercise for approximately 30 minutes. According to Evidence-based, defansi exercise is effective for managing hypertension in the elderly

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