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Healthy Status in the Gymnastic Community in West Bandulan, Sukun, Malang

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ABSTRACT
Obesity is a risk factor for various degenerative diseases such as diabetes mellitus and coronary heart disease. Obesity and all degenerative diseases could be prevented by implementing a healthy lifestyle, early detection of risk factors for degenerative diseases, and increasing knowledge about degenerative diseases. Therefore, this service activity aimed to form a healthy community with a program for three consecutive months. Activities included healthy exercise once a week, degenerative disease risk factors screening, and health education. Activities were carried out every Sunday morning for three months located in Bandulan Barat, Sukun District, Malang City. This activity was attended by 40 non-menopausal women. Health screening included waist circumference, random blood glucose, uric acid, cholesterol, and blood pressure. Of the 40 women examined, 39 suffered from central obesity, 6 suffered from hypertension, 4 suspected diabetes mellitus, 5 suffered from hyperlipidemia, and 4 of them suffered from hyperuricemia. As an intervention, participants received education about healthy lifestyles and degenerative diseases, the treatment of hypertension, hyperlipidemia, hyperuricemia, and diabetes mellitus. From healthy screening, central obesity was the most prevalent in this women's community. Healthy exercise community activities with health screening, and health education could be effective strategies for promotive and preventive activities to prevent degenerative obesity.

Keywords: Degenerative Disease, Healthy Exercise, Health Screening

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INTRODUCTION

Degenerative disease is a process related to aging, meaning that cells experience aging which results in a decrease in function. The aging process is accelerated by the influence of poor health habits as well as environmental influences. Poor health habits such as lack of exercise, consumption of unhealthy food, psychological stress, obesity, and air pollution due to cigarette smoke and vehicles could increase prooxidants in the body which results in aging and then causes degenerative diseases (Russo et al., 2012). Degenerative diseases that cause the most deaths in the world and Indonesia are coronary heart disease and stroke (WHO, 2017). Both coronary heart disease and stroke are caused by blockage or atherosclerosis in

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the coronary blood vessels of the heart and brain. According to a study from RISKESDAS secondary data in 2013, risk factors for stroke are increasing age, coronary heart disease, diabetes mellitus (DM), hypertension (HT), and heart failure (Ghani et al., 2016). Meanwhile, the greatest risk factors for coronary heart disease in women are menopause and obesity. Women in the age of menopause are at risk for cardiovascular diseases similar to men. This is due to the reduction of estrogen levels, which plays a role in cardiovascular protection (Ryczkowska et al., 2023). Most patients come for treatment in serious condition. Therefore, early recognition of risk factors for degenerative diseases and health promotion to prevent them are urgently needed.

The Indonesian government is paying more attention to the patient with hypertension and diabetes mellitus, by organizing the patients in the BPJS special program. BPJS patients who suffer from hypertension and/or diabetes mellitus are automatically registered in BPJS prolanis. The purpose of this program is to reduce the mortality and morbidity of patients with hypertension and or diabetes mellitus. Several facilities that they get are periodic laboratory tests that measure kidney function, uric acid, and cholesterol levels including HDL, LDL, total cholesterol, and triglycerides every 6 months. However, HbA1C once every 6 months and fasting blood glucose levels once every month (BPJS) only for diabetes mellitus patients. In the matter of primary prevention, BPJS participants who have risk factors for diabetes mellitus such as having close relatives of their father, mother, or siblings with diabetes mellitus, showing symptoms of diabetes, obesity, or are over 45 years old are facilitated by BPJS to undergo screening for diabetes mellitus (BPJS, 2014). Therefore, through the BPJS program, the degenerative disease prevention program including health screening, and degenerative disease information in the form of posters and digital articles as well as the treatment has been implemented comprehensively and sustainably in Indonesia.

Health promotion at the level of screening and providing information has been performed, however, healthy lifestyle habits such as regular exercise, consumption of a healthy, sufficient, and balanced diet, and stress control are extremely important to prevent degenerative diseases. In this community service, we performed weekly exercise, health education, and screening for obesity, and hypertension, as well as chemical parameters such as blood glucose, uric acid, and cholesterol were measured. Because obesity and hypertension are strong risk factors for heart disease and stroke.

METHODS

This community service was carried out once a week, on Sundays for 3 months. The participants were 40 healthy non-menopausal women. Community service activities included healthy morning exercises, health screening, and health education. The examinations performed were Waist circumference, blood pressure, random blood sugar, cholesterol, and uric acid measurement. Activities were in Bandulan Barat Street, Sukun, Malang in September – December 2017.

Waist circumference is measured using a measuring tape. Waist circumference was measured at the time of the last breath, with the tape parallel to the floor. Measurement at the midpoint between the upper border of the iliac crest and the lower border of the last rib. The normal limit for waist circumference for Asian women is ≥80 cm (Pan et al., 2013).

Blood pressure measurement using an aneroid sphygmomanometer and stethoscope. Measured in a sitting position after resting for approximately 5 minutes. The normal value for blood pressure is <120/80, a value <140/90 is called prehypertension according to JNC 8, grade 1 hypertension is a systole value of 140-159 and diastole 90-99, and grade 2 hypertension is a systole value ≥ 160 and diastole > 100 (Olin & Pharm, 2018).

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Random blood glucose, uric acid, and cholesterol measurements using a digital measuring device (Auto check®). Normal random blood glucose values are < 200 mg/dL, cholesterol < 200 mg/dL, and uric acid < 6.0 (Easy Touch, 2013).
Among the health education delivered include:

1. Headache and Vertigo
2. Stroke
3. Hypercholesterolemia
4. Diabetes mellitus
5. Hypertension

RESULTS

Community service activities included counseling (figures 1 and 2), and group exercise (figure 5).

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Figure 3. Gymnastics activities

The total number of participants for 3 months was 40 participants, all of whom were women. Table 1 shows the results of basic health screening in the form of waist circumference, blood pressure, random blood sugar, cholesterol levels, and uric acid using a rapid test.

Table 1. Screening results for blood pressure, waist circumference, random blood sugar, cholesterol, and uric acid

Participant	WC > 80 cm	HT st 1	HT st 2	RBG* > 200	Cholesterol > 200	Hiperuricemia > 6mg/dL
40	39 (97.5%)	5 (12.5%)	1 (0.025%)	4 (10%)	5 (12.5%)	4 (10%)

*RBG (Random Blood Glucose)

Of the 40 female participants, 39 (97.5%) of them were obese, 6 (15%) of them suffered from hypertension, 4 (10%) of them suffered from diabetes mellitus, 5 (12.5%) suffered from hyperlipidemia, and 4 (10%) of them suffered from hyperuricemia.

DISCUSSION

The community service was an exercise activity taking place in Bandulan Barat Street, Sukun, Malang for 3 weeks. The other activities include health screening, especially screening for risk factors for non-communicable diseases, and education about degenerative diseases. The participants were 40 healthy women. From health screening, it was found that almost 100% of participants had central obesity, which was characterized by an waist circumference of more than 80 cm. As many as 15% of participants suffered from hypertension, 12.5% suffered from hypercholesterolemia, and 10% were suspected of suffering from diabetes mellitus, and hyperuricemia.

Central obesity is an indicator of fat accumulation in the visceral organs. Waist circumference measurement is the simplest measurement to assess the risk of cardiovascular disease. Similar and more than equal to 80 cm is the limit for determining central obesity in women, while greater than equal to 90 cm is the cut-off point of AC in men (Pan et al., 2013). Various studies state that central obesity is closely related to the incidence of chronic diseases such as cardiovascular disease and cancer (Chen et al., 2019). Obesity has a strong correlation with diabetes mellitus type 2. A recent study in India demonstrated that obese individuals had an

increased likelihood of being both prediabetic and diabetic as compared to non-overweight individuals (Gupta & Bansal, 2020). In our study, only 10% of participants were suffering from hyperglycemia based on random blood glucose from capillary vessels. Nevertheless, it was still needed to establish a valid diagnosis of diabetes mellitus by examining fasting and or post-prandial blood sugar levels from blood veins according to the diabetes mellitus diagnosis criteria of Perkumpulan Endokrinologi Indonesia (Perkeni) (Soelistijo, 2021).

The hypertension prevalence was 15% of participants in this community sample. Recent studies show that hypertension prevalence in Banyuwangi, East Java is more than 30% and 20.91% in Indonesia (Astutik et al., 2020; Eliyanti & Hanif, 2023). This discrepancy could be due to the gender differences, in which only women were measured in this study. Since women before menopause have a lower incidence of cardiovascular disease than men (Ryczkowska et al., 2023). Meanwhile, the hyperlipidemia prevalence was 8.26% according to the Indonesia Family Life Survey (Eliyanti & Hanif, 2023). Whereas, 12,5% of participants suffered from hyperlipidemia. The methods of assessment are different, hyperlipidemia is a chemical laboratory measurement hence assessment based on a survey could not figure out true data. Since the blood cholesterol parameter consists of 4 items, it is necessary to perform complete screening for triglycerides, LDL, HDL, and total cholesterol (Perkeni, 2021). Triglyceride is derived from carbohydrates, whereas LDL and total cholesterol are derived from saturated fat. Meanwhile, higher HDL participates in the transportation of excess cholesterol in the blood vessels to the liver. Hence, the more HDL the more healthy of body (Chiesa & Charakida, 2019).

Hyperuricemia is also linked to cardiovascular diseases. The prevalence of hyperuricemia in Indonesia is 18% (Raja et al., 2019). In our study hyperuricemia was 10%, again this difference was due to the participants that were only women. Women at the age of reproduction have high levels of estrogen which plays an important role in cardiovascular protection. Hence, at the same age, the cardiovascular disease prevalence of men is higher than women. However, after menopause, the incidence of cardiovascular disease in men is similar to women (Ryczkowska et al., 2023).

Regarding the city in which the research was conducted. The latest large-scale study conducted by Maharani, et al (2016-2017) in Malang about cardiovascular disease risk analysis shows that almost 30% of the population aged ≥ 40 years is at high risk of suffering from heart disease in the next 10 years. Moreover, only around 24% of the high-risk population are currently undergoing therapy (Maharani et al., 2019). This would be an economic burden for at least by next 10 years. Therefore, comprehensive interventions are needed in the community to detect early risk factors and prevent degenerative diseases. Patients with degenerative diseases are often treated lately at severe stages when it interferes with their daily activities. At this stage, health efforts could be taken are treatment and rehabilitation to prevent further disability. Certainly, primary prevention is the best strategy to prevent degenerative diseases.

Obesity, hypertension, hyperlipidemia, diabetes mellitus, and hyperuricemia are risk factors for degenerative diseases that can be prevented and controlled. The most basic treatment for this condition is of course implementing a healthy lifestyle, regular health screening, increasing the awareness of degenerative diseases, and drug therapy. This community service is very useful and therefore should be applied to more communities in Indonesia.

CONCLUSION

The biggest risk factor found was central obesity, which was 97%. The intervention carried out is education about healthy lifestyles and degenerative diseases as well as treatment for hypertension, diabetes mellitus, hyperlipidemia, and hyperuricemia found in this screening.

Activities in the healthy exercise community in West Bandulan, Malang completed with health screening and health education for degenerative diseases are important for preventing degenerative diseases.

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