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Proportion of Hypertension Cases by Gender in the North Buton Regency in the 2018-2020 Period

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Abstract.
Hypertension is a main risk factor of mortality and morbidity which has been connected with cardiovascular diseases (CVD). There are different types of CVD such as atherosclerosis, acute myocardial infarction, and cardiomyopathy. This study was conducted to describe the proportion of hypertension by gender in the North Buton Regency in the 2018-2020 period. This is a survey research utilizing the health report data of the North Buton Regency Health Office during the period of 2017-2020 which involves data on the hypertension by gender. The research sample is hypertension patients. The type of research data is numerical and the research data is presented in the form of a graph with narration. The highest number of hypertension cases by gender in the North Buton Regency for the 2018-2020 period was female, spread across 3 public health centers namely Lakansai, Kambawo, Kulisusu health centers.

Keywords: Hypertension, Gender, Female, Male

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1. INTRODUCTION

Hypertension is a major risk factor for global mortality and morbidity which is leading preventable cause of cardiovascular disease. Control of blood pressure (BP) levels is poor around the world. Consequently, hypertension becomes the leading preventable cause of CVD and all-cause mortality globally [1–3]. Hypertension directly contributes to stroke, ischemic heart disease, and other CVD [4]. Hypertension is an asymptomatic condition, where high blood pressure in the arteries causes an increased risk of cardiovascular-related diseases such as stroke, heart failure, heart attack, kidney damage [5–7].

According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7) stated that 34.5% of men and 33.4% of women over the age of 20 are defined as hypertension in the United States [8]. Data from NHANES reveal that men have a much higher prevalence of prehypertension compared to women (45% vs. 27%) [9, 10]. A recently published report

of 250.741 individuals (120.605 men and 130.136 women) from 13 countries showed that the pooled prevalence of prehypertension was 40% among men and 33% among women [11]. Gender differences in the epidemiology of hypertension indicate different clinical characteristics of hypertension in both men and women.

According to the results of the 2013 Indonesia Health Basic Research data, the hypertension cases in Indonesia is ranked 6th out of 10 categories of chronic non-communicable diseases. The prevalence of hypertension in Indonesia obtained from the results of blood pressure measurements aged 18 years has decreased from 31.7% in 2007 to 25.8% [12].

There are significant differences in the epidemiology and clinical characteristics of hypertension between men and women. In addition, gender differences are related with certain types of hypertension, including postmenopausal hypertension, skin color hypertension, racial hypertension, and gestational hypertension. Gender differences have been implicated in the prevalence and determinants of hypertension and prehypertension. The similar levels of control between men and women taking antihypertensive drugs, different roles of the angiotensin-converting enzyme 2, sex hormone, endothelin-1, and sympathetic nerve activity are influence to sex differences to control blood pressure. This description summarizes the gender differences in clinical features and determinants of hypertension and the mechanisms responsible for hypertension [13–15].

Based on above phenomenon, this study was conducted to describe the proportion of hypertension by gender in the North Buton Regency for the year 2018-2020.

2. METODHOLOGY OF THE STUDY

The type of this research is a survey research by obtaining the health report data of the North Buton District Health Office for the period 2017-2020 which is involving data of hypertension by gender. The research sample is hypertension patients. The type of research data is numerical and the research data is presented in the form of a graph with narration.

3. RESULT OF THE STUDY

The research result is presented using a bar chart accompanied by an explanation that can be presented as follows:

Figure 1 show that cases of hypertension based on male gender in the North Buton Regency in 2018 were highest at Lakansai and Kambawo Health Centers, in 2019 the

highest was at Kulisusu Health Center, and in 2020 the highest was at Kulisusu Health Center.

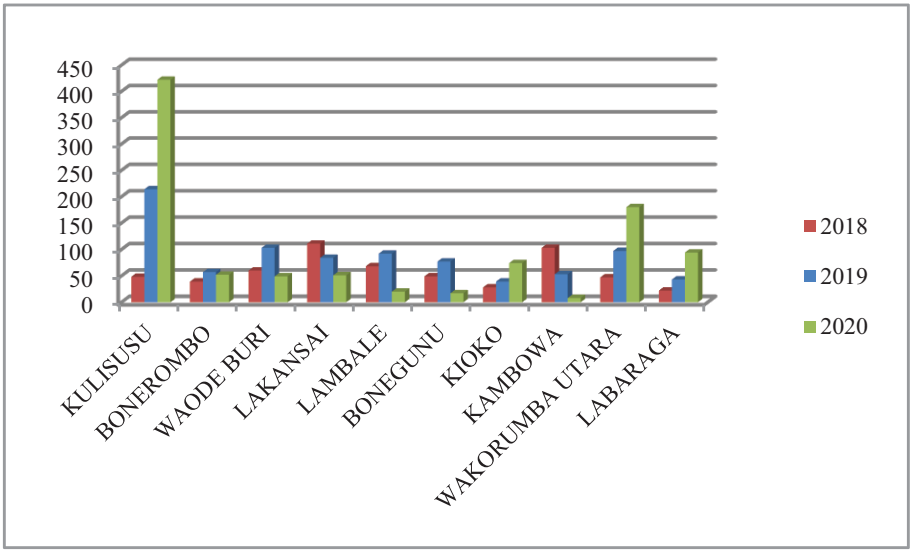

Figure 1: The Hypertension cases by Male in the North Buton Regency for the year 2018-2020.

Figure 2 shows that the case of hypertension by female in the North Buton Regency in 2018 was highest at Lakansai Health Center. In the year of 2019 and 2020 the highest cases were at Kulisusu Health Center.

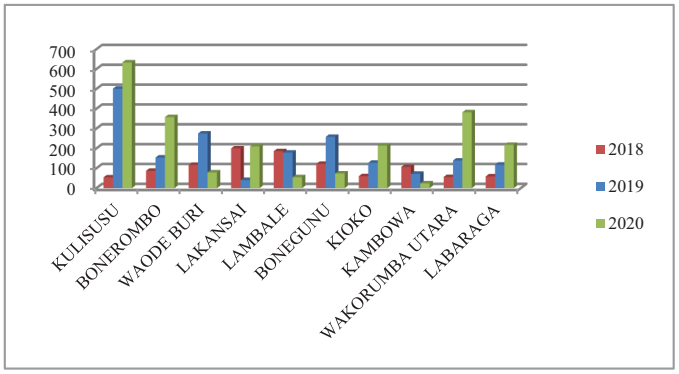

Figure 2: The Hypertension cases by Female in the North Buton Regency for the year 2018-2020.

4. DISCUSSIONS

Gender has an important influence on blood pressure, with premenopausal women having lower arterial blood pressures than men of the same age. Compared with pre-menopausal women, postmenopausal women have higher blood pressure, suggesting that ovarian hormones can modulate blood pressure [16].

The highest number of cases of hypertension by gender in the North Buton Regency for the 2018-2020 period was female, spread across 3 Public Health Centers namely Lakansai, Kambawo, Kulisusu Health Centers. This can be related to the age of the respondents who are predominantly elderly. Menopause phase is related on the production of the hormone estrogen in women which has begun to decrease. It effects on a decrease in protection of blood vessels so that blood vessels begin to lose elasticity and are at risk of contracting which in turn increases blood pressure.

It is known that sex hormones play an important role in the regulation of blood pressure. Endogenous and exogenous estrogens have been shown to reduce blood pressure levels in postmenopausal women with hypertension [17]. Furthermore, estrogen causes vasodilation and lowers blood pressure levels through increased activation of endothelial NO synthase/NO signaling [18].

Based on the percentage of the elderly population by gender, the life expectancy of elderly women is greater than that of elderly men [12]. The results of a National Health Agency survey and nutrition research said that hypertension affects more women than men [19].

It is connected with the research of La Ode Alifariki [20] found that the proportion of hypertension is higher in women due to the influence of old age, excessive eating patterns and many female respondents also suffer from moderate anxiety. Yuniar [21] found different things that gender had an effect on the occurrence of certain non-communicable diseases such as hypertension where men suffered from hypertension more than women because men had higher systolic and diastolic blood pressure than women.

Juan-Juan Song et al [5] stated that gender differences exist in the prevalence, awareness, treatment, and prognosis of hypertension and the pathomechanisms underlying the development of hypertension.

5. CONCLUSIONS

The highest number of hypertension cases by gender in the North Buton Regency for the 2018-2020 period was female that spread across 3 health centers namely Lakansai, Kambawo, Kulisusu Health Centers.

6. AUTHOR CONTRIBUTION

The authors have contributed to this research

7. ACKNOWLEDGMENTS

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