



Health Assessment of Women in Reproductive Age as Expectant Mothers Through Body Mass Index Examination

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Abstract. Women of childbearing age are of concern considering that as prospective mothers who will experience pregnancy, childbirth and postpartum, their health needs to be prepared. Maternal health in Indonesia is of concern to all parties because maternal and infant mortality rates are still high. One of the causes of maternal mortality rate is pre-eclampsia which is characterized by high blood pressure. This study aims to identify the body mass index of women of childbearing age. This research is descriptive quantitative. The study was conducted by examining the height and weight of 78 respondents through accidental sampling. The results showed that the age of most respondents was 21 years (75.64%), respondents were categorized as underweight 5.13%, normal 65.38%, overweight 21.79%, obesity 7.70%. Based on the results of this study, it was shown that 34.62% of women of childbearing age had risks to their health. Suggestions for future researchers to identify early on the health of women of childbearing age to prepare for the health of mothers and their babies in the future.

Keywords: Women of Reproductive Age, Expectant Mothers, Body Mass Index.

1 Introduction

Women of reproductive age are defined as women aged 15-49 years, at that age, they still have the potential to have children [6]. Women of childbearing age are potential mothers who need to be prepared for their reproduction in order to get healthy offspring according to the country's health goals. The ideal age for women to have a healthy pregnancy and safe childbirth is at the range of 20-35 years old. While younger age than 20 and older than 35 are considered at risk for women to have their pregnancy and delivery [10]. In an effort to reduce health problems for mothers and their babies, it is necessary to identify health problems in woman of childbearing age before marriage. Some women of childbearing age are married, some are still studying at universities. These women have various lifestyles, activities, and daily food consumption. Women of childbearing age with insufficient food consumption in the long term will cause

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Chronic Energy Deficiency (CED). The highest incidence of CED was in the group of women aged 15-24 years with an incidence rate of up to 81.3% [13]. Women of childbearing age are an age group with a high prevalence of anemia in Indonesia. The problem of anemia has an impact on the health of mothers and their babies during pregnancy [8]. Once a woman already has anemia during pre-conception, she is at risk of anemia during pregnancy. Women with low body weight need additional nutrition that meet high energy density in addition to consuming food containing iron [5].

Health problems do not only occur in women of childbearing age who are underweight; but overweight and obese conditions can also cause problems. Health problems that occur in the form of high blood pressure. High blood pressure or hypertension, which occurs in women of childbearing age can cause various diseases such as cardiovascular disease, heart attack, heart failure, stroke, chronic kidney failure. The further impact of the hypertension on health during pregnancy is the emergence of pre-eclampsia. Pre-eclampsia is one of the causes of death contributing to the high maternal and infant mortality rates in Indonesia. Current date the prevalence of pre-eclampsia in Indonesia is 3.4% -8.5%. Mothers who have a history of hypertension before their pregnancy are 4.125 more at risk of having pre-eclampsia [3]. In addition, the iron absorption of obese women is lower than that of those who have a normal weight. A person with normal body weight absorbs as much as 32.9% of iron while obese people absorbs as much as 19.7% [5]. Factors that influence newborn weight such as the occurrence of LBW are determined by genetic factors and the nutritional status of the fetus which is influenced by the nutritional status of the mother at delivery and the nutritional status of the mother at conception. Factors affecting nutritional status at conception are influenced by 1) socioeconomic status, 2) maternal health and nutritional status, 3) birth spacing, 4) parity, 5) gestational age.

Health assessment by measuring the body height and weight of a woman of childbearing age has no meaning if an analysis of a person's health is not carried out. So far, women of childbearing age have only checked their weight and height. Height and weight measurements were followed up by calculating the body mass index. Based on the results of calculating the Body Mass Index, a woman of childbearing age can be categorized as underweight, normal, overweight, or obesity. After knowing the respective weight categories of a woman during her fertile period, it is necessary to follow up on efforts to prevent her health problems. Efforts to prevent health problems are carried out with health education regarding the fulfillment of adequate nutrition for the underweight categories. Meanwhile, for the fat and obesity category, health education is needed with restrictions on certain types of food that may cause overweight or obesity. An increase in Body Mass Index of 10% can increase 10% of the risk having diabetes mellitus and 10% for pre-eclampsia. Therefore, prevention of obesity needs to be done before pregnancy [4]. Body mass index before pregnancy is associated with consumption of nutrients containing folic acid [9].

2 Method

This research is a descriptive quantitative study that aims to identify the health of women of childbearing age as expectant mothers through examination of the Body Mass Index (BMI). The BMI measurement begins with the measurement of body weight (kg) divided by the measurement of height (m)², this is the formula for calculating Body Mass Index. Respondents of this study were women of childbearing age from various regions who were currently pursuing their education at the Pekajangan Muhammadiyah University in Pekalongan. Using the accidental sampling technique; 78 respondents were recruited.

3 Result and Discussion

The study was conducted on women of childbearing age, as many as 7 (8.97%) participants were at the age of 20, 59 (75.64%) participants were 21 years old, 9 (11.54%) were 22 years old, and the other 3 (3, 85%) were 23 years old. Based on these data, more than half (75.64%) are under 21 years old, as shown in Fig 1. The age of 21 for a woman of childbearing age who is about to get married is a healthy age when the woman is pregnant, giving birth and giving birth. The family planning program's program for maturing the age of marriage aims to increase the age of marriage for women at the age of 21 and reduce the first birth for mothers under 21 [7].

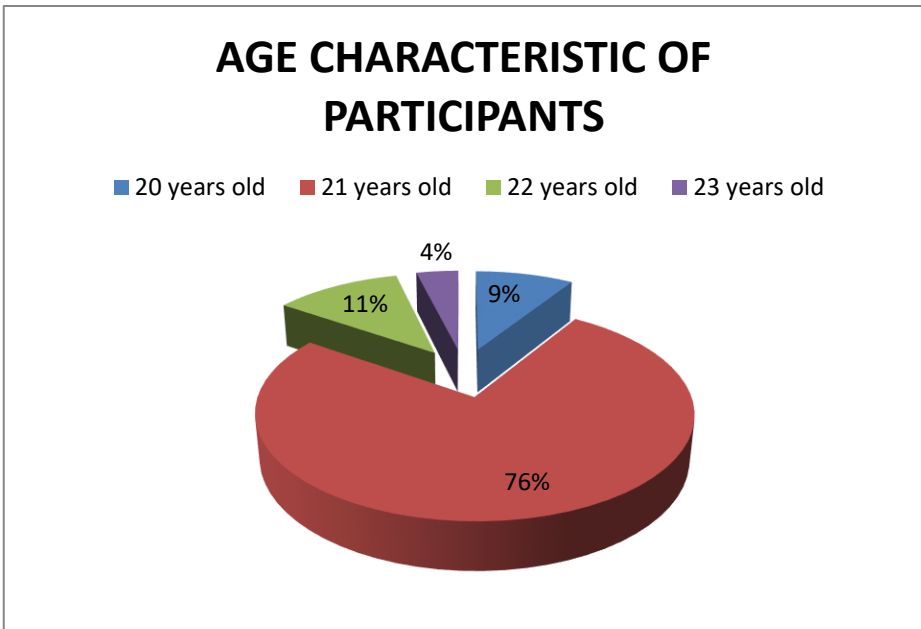


Fig. 1. Age characteristic of the participants

Respondents' body weight in this study had a mean value of 52.4, a median of 50 and a minimum-maximum value of 38-83. The mean value of the respondent's height is 155.29, the median is 155, the minimum-maximum is 148-170 cm.

Maternal mortality in Indonesia due to pre-eclampsia is still high, although as an Asian country, the condition of pre-eclampsia in Indonesia is still much lower than in African-American countries, considering that pre-eclampsia morbidity varies according to race. Women in American Indian/Alaska Natives (AI/ANs) are at risk of pre-eclampsia compared with whites, considering the potential effects of obesity, a major risk factor for pre-eclampsia, and the conditions that disproportionately affect it. The results of this study indicate that American Indian/Alaska Natives are at increased risk of pre-eclampsia compared to white women with a score (OR 1.17, 95% CI 1.06-1.29) regardless of Body Mass Index [1].

Research in Bangladesh on respondents aged 15 to 29 years, mostly women had their first pregnancy before 18 years old were associated with anemic conditions ($P < .001$, OR = 1.30, 95% CI = 1.12-1.49). Similar situation goes to those participants with thin category; they were associated with anemia conditions ($P < .001$, 95% CI = 1.208-1.570) [2].

The body mass index of the respondents in this study is shown in Fig 2. Respondents in the underweight category were 4 (5.13%) participants, normal weight 51 (65.38%) participants, overweight category 17 (21.79%) participants, and obesity 6 (7.70%) participants.

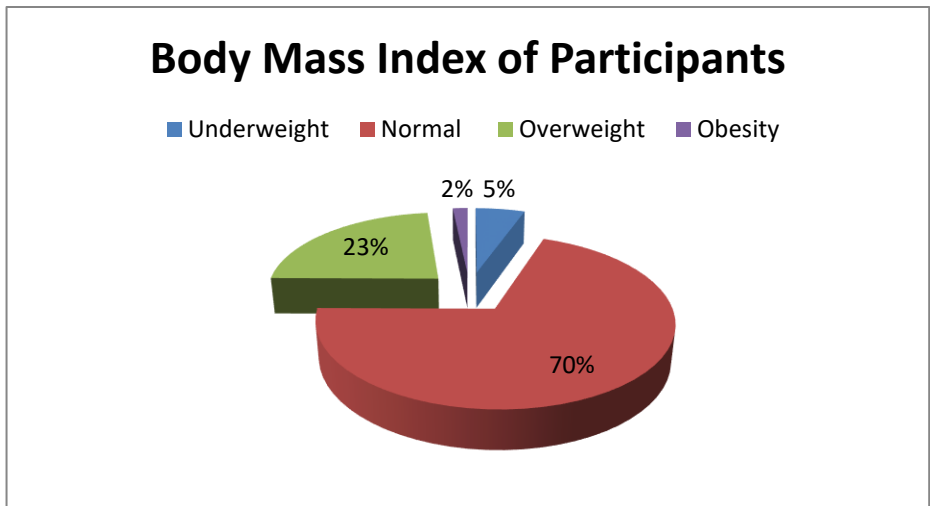


Fig. 2. Body Mass Index of Participants

The body mass index of women of childbearing age before pregnancy needs to be prepared because it will determine the outcome of pregnancy. Factors that influence newborn weight such as the occurrence of LBW are determined by genetic factors and the nutritional status of the fetus which is influenced by the nutritional status of the mother

at delivery and the nutritional status of the mother at conception. Factors affecting nutritional status at conception are influenced by 1) socioeconomic status, 2) maternal health and nutritional status, 3) birth spacing, 4) parity, 5) gestational age.

Extremely low and high body mass index in women of childbearing age before pregnancy including obesity (overweight) and underweight were confirmed as the risk factors associated with adverse obstetric and perinatal outcomes. Conditions at risk for hypertensive complications such as pregnancy induced hypertension (PIH), preeclampsia, gestational diabetes mellitus (GDM), low Apgar scores, hypoglycemia, admission to the neonatal intensive care unit (NICU), preterm birth (PB), macrosomia, cesarean delivery, infant adiposity, childhood obesity, glucose, insulin, and cardiometabolic dysregulation and many other health problems, the latter remains a significant health problem and is associated with low birth weight (LBW), small for gestational age (SGA). There are no studies that have compared pregnancy outcomes and perinatal conditions between women of normal weight, lean, overweight or obese. Pre-marital counseling which provides an explanation of efforts to lose weight is also still confusing considering that the prediction of pre-eclampsia also requires further research [12].

4 Conclusion

The results showed that the age of most respondents was 21 years (75.64%), respondents were categorized as underweight 5.13%, normal 65.38%, overweight 21.79%, obesity 7.70%. Based on the results of this study, it was shown that 34.62% of women of childbearing age had risks to their health. Suggestions for future researchers to identify early on the health of women of childbearing age to prepare for the health of mothers and their babies in the future.

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