RESEARCH

Relationship Between Pregnant Woman's Knowledge Level About Maternal Nutritional And Gestational Weight Gain In Puskesmas Banjardawa

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 Abstract

Introduction: *Gestational weight gain (GWG) is the weight gain of pregnant women during pregnancy. Inadequate/excessive GWG can have an impact on fetal weight at birth. The 2019 MCH handbook includes a gestational weight gain chart, but the method of calculating the body mass index is not included so that there are difficulties in filling out the chart and GWG is not monitored.*

Aims: *to examine the relationship between the level of nutritional knowledge of pregnant women and gestational weight gain.*

Methods: *This research is an analytic observational with cross sectional method. This research was conducted in the working area of the UPT Puskesmas Banjardawa , namely Banjaran Village, Banjardawa Village, Taman Village, Beji Village, and Pedurungan Village in September - October 2022.*

Result: *Most of the pregnant women in the Banjardawa Health Center working area in 2022 were 26-35 years old, had low education level, middle to lower economic status, average gestational age in the third trimester, and had no history of disease. Most pregnant women in the working area of the Banjardawa Health Center in 2022 already have a good level of knowledge about the nutrition of pregnant women, but have inappropriate gestational weight gain. The results of the bivariate analysis showed that there was no significant relationship between the knowledge level of pregnant women and gestational weight gain in pregnant women.*

Conclusion : *Health workers are expected to be able to provide motivation and information about nutrition for pregnant women to pregnant women, so that they are expected to help with appropriate gestational weight gain*

Keywords: *gestational weight gain, pregnancy, maternal nutrition*

INTRODUCTION

One of indicator degrees health public is number of Maternal Mortality Rate (MMR). Maternal Mortality Rate reflects the risks involved Mother during Pregnancy and childbirth are influenced by nutritional status mother, state of social economy, poor of health condition during pregnancy and events various complications during pregnancy.[1]

Indonesia Health Profile 2020 report that the number of MMR in 2020 shows 4,627 deaths in Indonesia. Amount This show enhancement compared to in 2019 there were 4,221 deaths.[2] Regency Pemalang, Central Java has amount case death mother in 2020 was 15 cases, experienced enhancement compared amount case death Mother In 2019 was 13 cases.[1] Public health center Banjardawa is one of Puskesmas located in the Regency Pemalang has 5 working areas, which is Village of Banjaran, Village of Banjardawa, Village of Taman, Village of Beji, and Village of Pedurungan. Maternal Mortality Rate in Puskesmas Banjardawa in 2020 and 2021 was 2 cases in each year. This case was increase because in 2018 and 2019 there were no cases of maternal death.[3]

Gestational weight gain (GWG) is the increase of mother's weight pregnant during pregnancy. Monitoring maternal weight, height and GWG carried out in antenatal care and is inspection mandatory checks which must be done. GWG which is not sufficient/excessive can cause impact on fetal weight at birth. Lacking woman weight/less nutrition at the start pregnancy or not improve nutritional status they during pregnancy will have a greater chance of fiving birth to a child who is underweight/malnuourished/mental retarted/preterm labour.[4]

The Ministry of Health of the Republic of Indonesia published Maternal and Child Health Book (KIA Book) which contains sheet information and notes health as well as notes special exists abnormality Mother during pregnancy, childbirth, and as well as newborn up to 6 years of age. In the KIA book wrote all information provided during Mother pregnant do antenatal care. In the 2015 KIA Handbook, not yet listed the chart of gestational weight gain, so that Mother pregnant unable to monitor the weight gain to be achieved. In the 2019 KIA Handbook, already listed the chart of gestational weight gain, however the calculation method of body mass index not be included so that happen difficulty when filling out the chart and GWG becomes unmonitored.[5]

Knowledge possessed by a Mother can influence in taking decisions and influence their behavior. Mother with good nutrition knowledge are more likely to provide adequate nutrition for their babies. When Mother enter emesis gravidarum, where the stomach feels nauseous and does not want to be filled, eventhough in this condition if mothers has good knowledge, then she will try to fulfill her needs and her babies nutrition.

Based on the background, the author's interested in researching the relationship betwen the knowledge level of pregnant women about maternal nutritional and gestational weight gain in Puskesmas Banjardawa.

METHODS

Type of study is the analytic observational with method cross sectional with independent variable is the level knowledge of pregnant women about maternal nutrition and the variable dependent is the gestational weight gain. This study was conducted in the working area of Puskesmas Banjardawa, which is Village of Banjaran, Village of Banjardawa, Village of Taman, Village Beji, and Village of Pedurungan. Population in this study is the pregnant women in September – October 2022 in the working area of Puskesmas Banjardawa. The sample in this study has fulfill criteria inclusion, namely pregnant women in the working area of Puskesmas Banjardawa in September – October 2022 and following activity Posyandu and do antenatal care in the Village of Banjaran, Village of Banjardawa, Village of Taman, Village of Beji, and Village of Pedurungan. The criteria exclusion in this study is the pregnant women not willing become a respondent, have history of diabetes mellitus, and mothers who cannot read and write.

The technique sample in this study is simple random sampling with took 6 mothers pregnant at any villages in the working area of Puskesmas Banjardawa with total 30 respondents. This study using a validated questionnaire consisting of 17 statements that were answered true or false and a chart of gestational weight gain from CDC. Then, processed with using *fisher's exact* test, if *chi-square* test conditions no fulfilled. If $p<0.05$ then the results calculation statistics shows that there is a significant relationship between the two variables.

RESULT AND DISCUSSION

RESPONDENT CHARACTERISTICS

Study This carried out at the Health Center Banjardawa with work area Village of Banjaran, Village of Taman, Village Banjardawa, Village of Beji, and Village of Pedurungan about relationship between knowledge level of pregnant women about maternal nutrition with gestational weight gain. This study has 30 respondents who have fulfil condition criteria inclusion and exclusion with 6 respondents for each village.

Table 4. 1 Characteristics Respondents Study

Description	Category	Amount	Percentage (%)
Age	15 – 25 Years	9	30.0
	26 – 35 Years	15	50.0
	36 – 45 Years	6	20.0
Total		30	100.0
Education	Low Education	18	60.0
	Middle Education	12	40.0
	High education	0	0.0
Total		30	100.0
Economic Status	Low	26	86.7
	Middle	4	13.3
	High	0	0.0
Total		30	100.0

Age Pregnancy	Trimester I	6	20.0
	Trimester II	9	30.0
	Trimester III	15	50.0
Total		30	100.0
Disease History	None	30	100.0
	Present	0	0.0
Total		30	100.0

Identified mother's average age pregnant women at work of Puskesmas Banjardawa, precisely in the Village of Banjaran, Village of Banjardawa, Village of Taman, Village of Beji, and Village of Pedurungan, namely 15 respondents (50.0%) have range aged 26-35 years, 9 respondents (30.0%) have range aged 15-25 years, and 6 respondents (20.0%) have range age 36-45 years. This result study similar with study Ernawati in 2018 that pregnant women aged 20-35 years that is as many as 103 people (78%) and mpregnant women 35 year old is 29 people (22%).[8] Besides it, Imani (2020) in research also states that 80% pregnant women aged 20 – 35 years.[9]

This is caused by optimal age for a pregnant women is age 20 – 35 years because at the age of uterus already mature and capable accept pregnancy from psychology and physical. The age of pregnant women is classified into two, namely at risk and not risk. Age at risk means that pregnant women are at high risk if they have a pregnancy, namely too young or <20 years and too old or >35 years.[10,11]

Age 20-35 years is considered safe for pregnancy and childbirth, because people over 35 years of age are at risk for congenital abnormalities and complications during pregnancy and childbirth. Meanwhile, if it is less than <20 years old, the physical condition for the reproductive organs and psychology is not ready to undergo pregnancy.[10,11]

Based on education level, 18 respondents had low education (60.0%) and 12 respondents had secondary education (40.0%). The results of this study are in line with research conducted by Apriliani (2019) which stated that 75.7% of pregnant women respondents in their research had low education. 12 Research conducted by Chandra (2019) also stated that pregnant women in their research had 24.4% low education and 68.3% have secondary education.[13]

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual strength, religion, self-control, personality, intelligence, noble character, and the skills needed by themselves, society, nation and state. Education is a learning process which means that in education there is a process of growth, development or change towards a more mature, better and more mature individual, group or society.[14]

Based on economic status, almost 86.7% of respondents or 26 people have middle to lower economic status and 4 respondents (13.3%) have middle economic status. The results of this study are in line with Rachman's research (2022) which stated that 63.4% of pregnant women

in his research had low economic status.[15] Marbun (2019) also stated that 53.5% of pregnant women in his research had low economic status.[16]

Someone's income is one of the factors to determine eating patterns. Someone with a high level of income will usually spend on the quality and quantity of dishes. Pregnant women who come from families with high economic status will be able to meet their nutritional needs during their pregnancy, the nutrients consumed are of higher quality and of various types. This is different from pregnant women from families with low economic status, most of the family income will be spent on family consumption and the nutritional needs of pregnant women are given less attention.[15]

KNOWLEDGE OF PREGNANT WOMEN

Knowledge Level	f	Percentage (%)
Less Knowledge	4	13.3
Knowledge Enough	2	6.7
Knowledge Good	24	80.0
Total	30	100.0

The results showed that 80.0% of respondents or 24 respondents had good knowledge regarding the nutrition of pregnant women, 4 respondents (13.3%) had less knowledge regarding the nutrition of pregnant women, and 2 respondents (6.7%) had sufficient knowledge regarding the nutrition of pregnant women. The results of this study are in line with research conducted by Mamuroh (2019) which stated that 82.6% had good knowledge of the nutrition of pregnant women.[11] Apriliani (2019) also stated that 50.5% of the respondents had good knowledge regarding the nutrition of pregnant women.[12]

However, this is not in line with research conducted by Sari (2021) which stated that 60% of pregnant women as respondents had insufficient knowledge regarding the nutrition of pregnant women.[13]

There are several factors that affect one's knowledge. The level of education can affect the level of knowledge of people because of one's ability to receive and understand something. Acceptance and understanding of information received by someone with a higher education than someone with a lower education. However, people with low education do not always have low knowledge. [17] In this study it was stated that 60% of respondents had a low level of education, but 80% of respondents had good knowledge regarding the nutrition of pregnant women.

There are other factors that influence this, one of which is the provision of adequate information. This was proven by Retnaningtyas (2021), who conducted counseling for 10 pregnant women at a clinic in Malang, East Java. Before being given counseling there were 3 pregnant women (30%) with good knowledge and after the activity there was an increase to 8

pregnant women (80%) with good knowledge. Pregnancy Nutrition counseling activities have been proven to increase knowledge in pregnant women.[18]

One of *Usaha Kesehatan Bersumberdaya Masyarakat* programs from Puskesmas Banjardawa is the Pregnant Women Class. The Pregnant Women Class is a means for learning together about health for pregnant women, in the form of face to face meetings in groups that aim to increase the knowledge and skills of mothers regarding pregnancy, pregnancy care, childbirth, postpartum care, newborn care, myths, infectious diseases and birth certificate.[19]

The Pregnant Women Class is a study group for pregnant women with a gestational age between 20 weeks to 32 weeks with a maximum number of participants of 10 people. In this class pregnant women will learn together, discuss and exchange experiences about maternal and child health (MCH) in a comprehensive and systematic manner and can be implemented on a scheduled and exploited basis. Pregnant women's classes are facilitated by midwives/health workers using the Pregnant Women's Class package, namely the MCH Book, Flip charts, Instructional Guidelines for Pregnant Women's Classes, Handbook Facilitators for Pregnant Women's Classes and Pregnant Women's Exercise Books. [19]

GESTATIONAL WEIGHT GAIN

Gestational Weight Gain	f	Percentage (%)
No In accordance	20	66.7
In accordance	10	33.3
Total	**30**	100.0

The results of this study showed that 66.7% of respondents or 20 respondents had gestational weight gain that did not fit the chart and 10 respondents (33.3%) had gestational weight gain that matched the chart. This is in line with research conducted by Puspita (2019) which showed that 59.2% had gestational weight that did not match the chart. [20]

There are several factors that cause gestational weight gain to not match the charts. Many women believe that pregnancy means eating for 2, and as a result they almost double their caloric intake. Women also usually decrease their activity level during pregnancy. ACOG (American College of Obstetricians and Gynecologists) recommends 30 minutes of moderate exercise every day or at least 3 times a week. Women may benefit from the health-related benefits of exercise (eg, reduced risk of cardiovascular disease and diabetes) during pregnancy.[21]

Apart from that, there are many myths that have developed in Indonesian society, such as pregnant women eating less so their babies won't be big. Pregnant women should eat 1 plate more than usual for the growth and health of the fetus. Pregnant women are also not allowed to consume shrimp, squid, octopus, sea fish and crabs because they will complicate the birth of the baby. This is wrong, because these foods are rich sources of protein and minerals for the growth of the fetal brain and bones.[19]

THE RELATIONSHIP LEVEL OF KNOWLEDGE OF MOTHER ABOUT NUTRITION IN PREGNANT WOMEN WITH *GESTATIONAL WEIGHT GAIN*

		Gestational Weight Gain				Total		p-values
		No In accordance		In accordance		f	%	
		f	%	f	%			
Knowledge Level	Knowledge Good	4	66.7	2	33.3	6	100.0	1,000
	Less Knowledge	16	66.7	8	33.3	24	100.0	
Total		20	66.7	10	33.3	30	100.0	

The results of the bivariate analysis of this study were taken from the fuser's exact value with a p-value of 1,000, so it was concluded that there was no significant relationship between nutritional knowledge of pregnant women and gestational weight gain in pregnant women in the working area of the Banjardawa Health Center. The results of this study contradict research conducted by Ilmiani (2020) which states that there is a relationship between nutritional knowledge of pregnant women and increased body weight during pregnancy at the Bandar Lampung Health Center with a p-value of 0.03.[9] In addition, Nurmawati (2018) also stated that there is a relationship between knowledge of pregnant women and weight gain during pregnancy in Sedayu District with a p-value of 0.01.[22]

The results of this study contradict previous studies and become the results of new research. There are many factors that affect weight during pregnancy, such as sources of information, motivation, and diet. Manik (2017) states that information sources have a positive effect on weight gain with a t-statistic value of 2.934. In this case, the knowledge of pregnant women regarding the nutrition of pregnant women at the Banjardawa Health Center is 80% good, indicating that pregnant women in the working area of the Banjardawa Health Center have received quite good information from health workers, especially the village midwife. [23]

Diet has a positive effect on weight gain during pregnancy. Diet or food consumption pattern is a variety of information that provides an overview of the amount and type of food eaten every day by one person and has characteristics for a particular group of people which include attitudes, beliefs, food availability, and food choices. The availability of this food requires an adequate economic status, so that their needs can be met. [23] In this study, almost 86.7% of respondents had middle to lower economic status, so even though knowledge about the nutrition of pregnant women is good, food sources are not available, it is still difficult to maintain gestational weight gain that matches the chart.

Motivation has a positive direct effect on weight gain during pregnancy. Motivation is a tendency that arises in a person consciously or unconsciously to take action with a specific purpose or efforts that cause a person or group of people to be moved to do something

because they want to achieve the desired goal. The theory of motivation now that many people adhere to is the theory of needs. Motivation usually arises because of unmet needs, interests, goals to be achieved or because of the desired expectations.[23] Therefore, it is necessary to increase the motivation of pregnant women to apply the information they have received and also to follow up on the weight gain of pregnant women with chart.

CONCLUSION

Based on the result in this study, it is concluded that the majority of pregnant women in the working area of Puskesmas Banjardawa in 2022 aged 26 – 35 years, low of education level, economic status medium to below, average age third trimester of pregnancy, and no own history disease. The majority of pregnant women in the working area of Puskesmas Banjardawa in 2020 already have a good level of knowledge about nutrition of pregnant women but it is not accordance with gestational weight gain. Analysis results bivariate shows there is no significant relationship between level knowledge of pregnant women with gestational weight gain in pregnant women

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