



Related Factors with Addition Mother's Weight During Pregnant in the Work Area Public Health Center Belimbing, Padang City

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ABSTRACT

The paragraph discusses a study investigating factors associated with maternal weight gain during pregnancy in the Belimbing Community Health Center Working Area in Padang City. Using a quantitative approach with a cross-sectional design and a sample size of 85 individuals, data was collected through a structured questionnaire. Univariate analysis indicated that mothers without a history of metabolic diseases, higher education levels, regular ANC visits, and supportive families were prevalent. Bivariate analysis found significant correlations between education level, family support, and maternal weight gain, while no significant relationships were observed with a history of metabolic disease or ANC visits. Multivariate analysis identified family support as the most influential factor associated with maternal weight gain during pregnancy.

INTRODUCTION

Nutrition is problem health major communities, especially in developing countries, one of which is Indonesia. Nutrition Mother pregnant is one of priority activity repair nutrition public because it is very influential condition fetus (Indonesian Ministry of Health, 2021). Pregnancy is a process of growth and development fetus, which takes place inside womb since conception until beginning labor. One of factor important in pregnancy is nutritional status Mother pregnant who will impact to motherhood and growth fetus (Ministry of Health RI, 2019).

Increase weight during pregnancy is indicator important in predictions number maternal morbidity and mortality (Dolatian et al., 2020). According to the World Health Organization (WHO), around 287,000 women died, almost equivalent with 800 deaths mother every world day in 2020 (WHO, 2023). Meanwhile, the global SDG's (Sustainable development goals) targets are reducing the MMR to 70 per 100,000 births life. The Maternal Mortality Rate (MMR) in Indonesia is 305 per 100,000 births life, number this not yet achieve the required targets achieved that is amounting to 102 per 100,000 births life (Ministry of Health of the Republic of Indonesia, 2021). MMR in West Sumatra is experiencing increase namely in 2018 around 111 cases, in 2019 around 116 cases, and in 2020 experiencing enhancement namely 125 cases (Dinkes West Sumatra, 2020). Meanwhile, the MMR in the city of Padang in 2020 was around 21 cases and increased in 2021 to around 30 cases.

Prevalence excess body weight and obesity during pregnancy also increases and this become challenge big for manager pregnancy and childbirth. (Langley-Evans, Pearce and Ellis, 2022). Indonesia is a developing country with prevalence moderate obesity tall. (RI Ministry of Health, 2021). Where in 2018, the prevalence nutrition more was 13.6%, obesity was 21.8%, and obesity central 31% of the population adults (Rikesdas, 2018).

Research conducted in West Sumatra by Aji et al (2022) stated that majority Mother pregnant own addition weight no in accordance with recommendation where, mother pregnant who has overweight/obesity amounted to 43.1%, normal 46.7%, and underweight 10.2%. Mother pregnant with nutrition Good will obtain increase average body weight 12.5 kg for 9 months pregnancy and childbirth baby with average weight 3.3 kg. For reach circumstances that, mother pregnant must consume source sufficient energy, protein, vitamins and minerals (Ministry of Healt, 2022). Addition weight that is not appropriate will impact negative for mother and baby. Pregnant women who have increase low body weight linked with enhancement risk results adverse birth like perinatal deaths, whereas excess weight during pregnancy linked with results bad birth (Vivian Ukah et al., 2019).

Nutritional status mother pregnant said not enough if own Body Mass Index (BMI) $<18.5 \text{ kg/m}^2$ and must be own increase weight with range 12.5-18 kg, mother pregnant with a normal BMI ($18.5\text{-}24.9 \text{ kg/m}^2$) must reached 11.5-16 kg, BMI increased more ($25.0\text{-}29.9 \text{ kg/m}^2$) body weight of 7-11.5 kg and obesity BMI ($\geq 30.0 \text{ kg/m}^2$) increase body weight of 5-9 kg (Fauzia at all, 2022).

Ascension the recommended weight is very important For noticed during pregnancy (Ningsih, Simanjuntak and Haya, 2021). Pregnant mother with nutritional status not enough can risky experience a fetus that does not developing, disabled birth, Low Birth Weight (LBW) and death in content. Meanwhile, increase body weight based on excess BMI relate with incident preeclampsia in the mother pregnant (Ilmiani, Anggraini and Hanriko, 2020; Ningrum, 2020). Related factors with addition mother 's weight pregnant no regardless from factor behavior that each person has individual. Factors which are reason addition body weight is age, education, income, support family, intake food, ANC visits, activities physical and history metabolic disease.

LITERATURE REVIEW

1. Pregnancy

Definition Pregnancy According to Federation Obstetrics Gynecology International, pregnancy defined as fertilization or unification from spermatozoa and ovum and continued with nidation or implantation. When calculated from moment fertilization until birth baby, normal pregnancy will be taking place in 40 weeks. Pregnancy divided in 3 trimesters, where the first trimester taking place in 12 weeks, the second trimester 15 weeks (weeks 15 to 27), and the third trimester 13 weeks (weeks 28 to 40) (Prawirohardjo, 2011). Pregnancy is something circumstances special for a woman as candidate mother, because during pregnancy will happen change physical influence his life (Kristiyanasari, 2010). When a woman stated pregnant, change physiological body join in changed , so need nutrition has changed. The most obvious change is increase body weight (Waryana, 2010).

Pregnancy this is an important period of life , this period started from conception until birth fetus, One factor affecting success something pregnancy is nutrition. Circumstances nutrition Mother is contributor important for continuity life child. Nutritional status Mother related with increase mother's weight during impending pregnancy influential to birth weight. Birth weight tightly connection with health babies and numbers death. Enhancement mother's weight during pregnant signifies exists adaptation Mother to growth fetus .

In women who have index mass body (BMI) that is low and not adequate increase weight during pregnancy result disturbance growth fetus. Mother obeyed BMI categories are in the range obesity more risky experience complications pregnancy. Complications the including gestational diabetes , hypertension consequence pregnancy and baby big. Frederick, et al in studies cohort prospective in america get that the mother's BMI before pregnant and ascension weight during pregnant relate positive with birth weight. Pregnancy weight not enough than the average is attributed with doubled risky give birth to baby heavy born low. Risk macrosomia increase with increased BMI during pregnancy and excess increase weight during pregnant.

2. Connection Increase Mother's Weight During Pregnant with Baby Birth Weight Increase weight

By general during recommended pregnancy is around 11-15 kilograms. Increase Normal body weight would be very good for condition mother nor fetus. On the other hand, if increase experienced weight not normal, will give rise to risks to mother and fetus. Mother's weight pregnant must adequate and increasing in accordance age pregnancy (Firman, 2010). Inspection weight loss is done For know increase body weight, as well is increase experienced weight including normal or no (Hutahaean, 2009). Component increase weight during pregnancy consists from fetus, placenta, fluids amniotic fluid, maternal tissue, increase uterine weight, increase heavy network breasts, increased blood volume, and maternal or fat stores (Sharon, 2012).

Increase heavy placenta in line with increase heavy fetus in growth normal intrauterine. Heavy born own meaningful relationship with heavy the placenta, that is through wide Placental villus surface and size rope center. Genre uterine blood, as well as the transfer of oxygen and nutrients The placenta has a big influence on growth fetus (Prawirohardjo, 2009). 37 pregnant women who experienced malnutrition, blood volume become reduced, flow blood to the uterus and placenta reduced, size placenta reduced and transfer of nutrients through placenta reduce so that fetus grow slow or disturbed (IUGR). Pregnant mother with lack nutrition tend give birth to premature or LBW (Pantiawati, 2010). Ferial's research (2009) where mother who has size circumference arm above <23.5 cm delivery baby with birth weight low more many (17.7%) compared mother who has circumference arm top ≥ 23.5 cm (2.6%). LILA is indicators of nutritional status used especially For detection not enough energy and good indicators For detect woman age fertile and maternal pregnant with risk gave birth to LBW.

Impact cumulative on health and nutritional statistics woman age reproduction especially woman pregnancy is an important period because of pregnancy influence quality child born. Nutritional status mother is very important for health and quality life motherhood and growth the fetus. Increase weight during pregnancy is good way for evaluate well-being Mother pregnant and this has a big impact on the baby. Increase weight that is not adequate is factor significant risk for IUGR, prematurity, and weight born low birth weight in babies (LBW). Obesity and addition excess body weight on the other hand you can cause adverse maternal and perinatal outcomes (Nazlima and Fatema, 2011). Input nutrition and supplements heavy during pregnancy is 38 two factor risk main thing that can be done altered that affects maternal and perinatal outcomes. Little baby For age pregnancy predicted experience neonatal mortality and morbidity, disorders growth, development slow cognition, and disease chronic in adulthood. Too baby big during age pregnancy also occurs risk more perinatal health high and long long (Ota, et al, 2011).

One of supervision woman pregnant is diet and supervision weight. This matter important Because weaknesses and strengths nutrition can cause abnormalities that are not desirable in women pregnant (Wiknjastro, 2008). If mother no get adequate nutrition during pregnancy or addition heavy his body not enough than recommended so linked with enhancement heavy baby born low (< 2500 grams). Where as If addition weight during pregnancy exceeds what

is recommended so increase risk macrosomia (≥ 4000 grams) (Lowell and Miller, 2010). The results obtained from study conducted by Nohr et al (2008), it is believed that increase too much weight high in mother pregnant lower risk growth hampered but increase risk heavy baby born large (large-for-gestational-age). Ascension low body weight will increase risk baby born small or < 2500 grams.

METHODOLOGY

Research design this is study quantitative, methods research used is observational analytic with Cross Sectional design, population study This is all over mother parturition in the Work Area Public health center Padang City Belimbing, sample in research This that is all over mother already pregnant fulfilling parturition criteria inclusion. Internal instruments study This use questionnaire structured that has been validate. Data analysis was carried out with the Independent Sample T-test if the data is normally distributed, and the man whitney test if the data is not normal distribution and dammy linear regression multiple.

RESEARCH RESULT

Analysis Bivariate

Variabel	Pertambahan Berat Badan Ibu Hamil (kg)	
	Mean \pm SD	p-value
Riwayat Penyakit		
Ada	8.88 \pm 4.23	0,376
Tidak ada	10.49 \pm 4.62	
Pendidikan		
Rendah	5.38 \pm 3.57	0.000
Tinggi	10.95 \pm 4.35	
Dukungan Keluarga		
Kurang	7.47 \pm 4.12	0.000
Baik	11.86 \pm 4.10	
Riwayat Kunjungan ANC		
Tidak Lengkap	10.95 \pm 4.57	0.301
Lengkap	9.91 \pm 4.60	

Analysis test results bivariate that has been done using the Independent t test and man test withney obtained There is significant difference in average maternal weight gain pregnant with group variable education (p-value 0.000), support family (p-value 0.000). No there is difference in average maternal weight gain pregnant with history visit disease metabolic (p-value 0.376) and ANC visits (p-value 0.301).

Multivariate Analysis

Based on analysis bivariate obtained results that exists difference in average increase mother's weight pregnant between group education, and groups support family. Therefore That will done analysis Multivariate For see How influence to two variable This to increase mother 's weight pregnant use analysis multiple dummy linear regression.

Model	Koefisien	
		<i>p-value</i>
	□	
Konstanta	5.612	0.000
Pendidikan	3.461	0.013
Dukungan Keluarga	3.606	0.000

Seen all over variable significant because value ($p < 0.05$) of 2 variables initial test that is education and support family, the most influential to increase mother 's weight pregnant is support family, where? addition mother's weight pregnant with good support family 3,606 times more tall compared to with lack of support family.

DISCUSSION

Analysis Bivariate

1) Difference Increase Mother's Weight During Pregnancy in the Group with History of Disease Metabolic and No History of Disease Metabolic

On research this history disease metabolism is divided into 2 parts that is there is and there isn't there is history disease, in research this is the average number increase mother 's weight history disease is 8.88 kg whereas For mothers who don't own history average disease increase heavy his body is 10.49 kg. Results obtained no there is meaningful differences between addition mother's weight during pregnant in the group there is history disease or not there is history disease

Study this the same with study akgun et al (2017), who stated that increase current weight pregnant No relate with complications mother ($p > 0.05$). Different with research by Zhang et al (2022), which states that there is connection addition mother 's weight with history disease, where woman with disease metabolic own increase much weight more a little compared to women in the group who did not own disease metabolic .

During pregnancy, woman more prone to experience disturbance metabolism certain consequence change physiological that occurs (Mohan and Banerjee, 2021). Whereas according to Weisman et al (2010), all complications pregnancy more Possible happen consequence excess weight gain, obesity, and

gain excessive gestational weight. In women who experience obesity and excess weight during pregnancy often linked with hypertension, preeclampsia, and gestational diabetes (Silventoinen, Tynelius and Rasmussen, 2014). Besides that, women who experience excess body weight or obesity before pregnant and experiencing increase excess weight during pregnant own enhancement risk complications as big as triples like enhancement risk disturbance hypertension in pregnancy. On the contrary, addition weight that is not adequate during pregnancy linked with enhancement risk of GDM (Choi et al., 2022).

2) Difference Increase Mother's Weight During Pregnancy in High Education and Low Education Groups

On research this education is divided into 2 parts that is low and high, where the mother has education average height of increase body weight of 10.95 ± 4.35 kg and education low average increase body weight was 5.38 ± 3.57 kg. The independent T test statistical test results were obtained p value = 0.000 (p value <0.05) then can concluded There is significant difference in average maternal weight gain pregnant who has education tall with Mother pregnant who has education low. In line with research by Benham et al (2021), which says that there is connection increase weight with education mother pregnant, where? mother who has level education low experience increase little weight more Lots compared to woman with level education more tall. The woman who owns it education tall tend own knowledge twice more tall about risk pregnancy related increase weight that is not in accordance recommendation compared to educated women low (Muthupalaniappen and Danasamy, 2018).

3) Difference Increase Mother's Weight During Pregnancy in Groups Support Family Kindness and Support Lack of Family

On research this is the average addition mother's weight during pregnant with support family in category good with average increase weight 11.86 ± 4.10 kg and support family in category less average increase body weight 7.47 ± 4.12 kg. Man Whitney statistical test results were obtained p value = 0.000 (p value <0.05) then can concluded that There is significant difference in average maternal weight gain during pregnant between Mother with support good family and mother with support lacking family good. Involvement active partner during pregnancy is an effective strategy for increase results health mother and child. Own supportive partner make woman more believe self in face pregnancy challenges, incl guard pattern Eat Healthy during get pregnant for health mother and fetus (van Lonkhuijzen et al., 2023).

4) Difference Increase Mother's Weight During Pregnancy in Groups ANC Visit Complete and ANC Visit Not Complete

On research this mother did it complete ANC visit own increase body weight 9.91 ± 4.60 kg whereas ANC visits that don't complete own increase body weight was 10.95 ± 4.57 kg. The Independent T test statistical test results were obtained p value = 0.301 (p value >0.05) then can concluded no there is significant difference

in average maternal weight gain pregnant who did complete ANC visit with mother pregnant who is not do complete ANC visit.

Study this the same with Vinturache et al (2019), who stated that No there is difference amount ANC visit with increase body weight $p=0.471$. This matter possible because there is lack specific information about increase body weight, or information no be delivered with easy way remember the cause increase mother's weight no in accordance.

CONCLUSIONS AND RECOMMENDATIONS

As for the conclusion in study This is as following

- 1) There is difference addition mother's weight pregnant based on education, and support families in the Work Area Public health center Star fruit.
- 2) No there is difference addition mother 's weight pregnant based on history metabolic diseases and ANC visits in the Work Area Public health center Star fruit.
- 3) most dominant factor relate with addition mother's weight pregnant is support family.

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