

Original Research

Pregnancy Preparation Analysis And Determinant Factors In Pregnant Women

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ABSTRACT

Background: *Pregnancy preparation is still not the focus of attention for pregnant women. Good pregnancy preparation is supported by three factors, namely social demographics, pregnancy characteristics, and a history of depression. This study aims to analyze pregnancy preparation and its determinant factors in pregnant women in Medan City, North Sumatra Province.*

Methods: *This research is quantitative correlational analytic research with a cross-sectional approach. The population in this study was all pregnant women at health centers in Medan City, North Sumatra. The sampling technique used simple random sampling, with a total of 375 pregnant women. The data were analyzed through the Chi-Square test.*

Results: *There was a significant relationship between age ($p = 0.005$), education ($p = 0.001$), economic status ($p = 0.012$), pregnancy status ($p = 0.000$), and history of depression ($p = 0.002$) with preparation for pregnancy in pregnant women.*

Conclusion: *The existence of socio-demographic relationships, pregnancy characteristics, and a history of depression with pregnancy preparation in pregnant women provide an overview for health workers to assist in pregnancy preparation during preconception.*

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INTRODUCTION

Pregnancy demands the mother's readiness to behave healthily in keeping the baby safe. According to Bagherzadeh et al., (2021), mothers who are ready to undergo pregnancy feel responsible for finding a healthy lifestyle so that the fetus is in good condition. Bauer et al., (2020), pregnant women with a healthy lifestyle support a healthy uterus for the fetus is developing.

In addition, the readiness of pregnant women can stabilize their emotions and reduce postpartum anxiety for the safety of their babies (Hijazi et al., 2021). In the study of Naze, (2017), the readiness of the mother during pregnancy can contribute to the development of a healthy fetus. However, some pregnancies have risks or complications for the mother and fetus.

A problematic pregnancy hurts the mother and fetus. According to Mihretie & Habitamu, (2022) the prevalence of pregnancy disorders that cause fatal conditions for the fetus is 26.7% and that for the mother is 12.3%. In the study of Poudel et al., (2021), mothers who experience hypertension during pregnancy have the opportunity to give birth to babies with low body weight. Tadese et al., (2022) identified 28.3% adverse pregnancy and obstetric complications in the form of prolonged labor (7.4%), retained placenta (5.3%), hypertension during pregnancy (2.4%), stillbirth (10%), malpresentation (3%) and prematurity (2.3%). Pregnancy disorders can harm the mother and fetus. So, mothers need to prepare well for pregnancy.

Preparation for pregnancy provides benefits for the safety of the mother and fetus. According to Hall et al., (2018), prepared pregnancies contribute to a reduction in stillbirths and a reduced risk of postnatal depression in mothers. Yargawa et al., (2021), mothers who are preparing for pregnancy will visit 4 (four) antenatal care visits on time.

This supports the mother to consume the best nutrition for the health of the fetus. Flynn, Pryke, Wadhera, Poston, & White (2021), mothers who have optimal preparation for pregnancy can prevent the risk of complications in pregnancy. The mother's desire to prepare for pregnancy requires a special assessment. The London Measure of Unplanned Pregnancy (LMUP) is a valid and reliable measurement tool for analyzing pregnancy preparation (Das et al., 2021).

According to Almaghaslah, Rochat, & Farhat, (2017) LMUP identifies the behavior and attitudes of mothers in preparing for pregnancy. Borges et al., (2016), LMUP can also assess preparation for pregnancy in pregnant women in trimesters 1 to 3, postpartum women, and women with a history of abortion (spontaneous or induced). Preparation for pregnancy is still not the focus of attention for pregnant women.

The study by Olani et al., (2022), identified pregnant women who were not well prepared for their pregnancy (5.9%). According to Solís-Cordero et al., (2021), unprepared pregnancies (17.6%) and the frequency of preparation for pregnancy are still low (24.8%). According to Bukenya et al. (2019), preparation for pregnancy is low, with only 11.0% of pregnant women preparing for their pregnancy. Preparation for pregnancy is very important for both mother and baby, so the readiness of pregnant women is related to certain factors.

Preparation for a good pregnancy is very dependent on the determinant factors. According to Mwase-Musicha et al., (2022), pregnant women can prepare well for pregnancy if it is supported by three factors, namely, social demographics, pregnancy characteristics, and a history of depression before pregnancy. Nascimento, Borges, & Fujimor, (2019), socio-demographics of mothers who support maximum pregnancy preparation related to age, education, economic status, and how many children are pregnant. Bind et al., (2021) found that a history of depression experienced by the mother before pregnancy can increase her unresponsiveness in preparing for pregnancy and the birth of a baby.

A preliminary study conducted on March 8 in Medan City, North Sumatra Province, through interviews with 15 pregnant women found that 5 women always used contraception after giving birth to their first child, 4 women felt that their pregnancy was not at the right time, 2 women had no desire to get pregnant, 4 mothers said they did not know how to prepare for healthy conditions during pregnancy, and 3 mothers complained that they did not have enough money to meet the needs of their babies later. This shows that the mother has not optimally prepared for pregnancy. However, mothers have an active role in preparing for pregnancy.

Preparation for pregnancy is crucial for optimal fetal development. However, there are still many mothers who do not prepare for their pregnancy properly. Mothers' desire to prepare for pregnancy is related to socio-demographic factors, pregnancy characteristics, and a history of depression. Therefore, this study aims to analyze pregnancy preparation and determinant factors in pregnant women in Medan City, North Sumatra Province.

MATERIALS AND METHOD

This research is a type of quantitative correlational analytic research with a cross-sectional approach. The population in this study were all pregnant women who were recorded in 5 health centers with the type of care (Tuntungan Health Center, Kedai Durian Health Center, Bromo Health Center, Medan Denai Health Center, and South Area Health Center Medan) located in Medan City, North Sumatra in 2021, totaling 5970 pregnant women. The sampling technique used was simple random sampling, with the number of samples calculated using the Slovin formula. In this study, were 375 pregnant women.

The pregnancy preparation assessment instrument was adopted by Lang et al., (2019), known as the London Measure of Unplanned Pregnancy (LMUP), which consists of six question items with a score of 0, 1, and 2. All answers are accumulated in 3 categories, including no preparation (0–3), some preparation (4–9), and preparation (10–12). As for the determinants of pregnancy preparation, there are three instruments, including social demographics, pregnancy characteristics, and a history of depression before pregnancy (Mwase-Musicha et al., 2022).

Researchers conducted an instrument test on 30 pregnant women for 2 (two) weeks from April 7 to April 21, 2022, at the Teladan Health Center. The instrument test that the researcher conducted was the validity and reliability test of the research questionnaire using the Pearson Product Moment (r) correlation test. The results of the SPSS output validity for the pregnancy preparation instrument showed that all of the question items were valid, with the r value of each question item being 0.361, and the reliability results of the pregnancy preparation variable obtained a 0.781 greater than the 5% Cronbach alpha (α) value of 0.60, so measuring preparation for pregnancy is considered reliable.

So, the researcher used all question items from the pregnancy preparation variable when conducting research in 5 health centers with the type of treatment (Tuntungan Health Center, Kedai Durian Health Center, Bromo Health Center, Medan Denai Health Center, and South Area Health Center) Medan City, North Sumatra. The research data were analyzed univariately to identify socio-demographic data, pregnancy characteristics, a history of depression before pregnancy, and preparation for pregnancy. Next, a bivariate analysis was performed using the Chi-Square test to prove the relationship between the independent variables (social demographics, pregnancy characteristics, and history of depression before pregnancy) with the dependent variable (pregnancy preparation).

Researchers apply ethical principles in conducting this research, including beneficence, respect for human dignity, and justice. The researcher conducted an ethical test of the "pregnancy preparation" research instrument in the health research ethics committee section of Dr. Djamil Hospital Padang with the number LB.02.02/5.4/237/2022 and declared it "passed the ethics review".

RESULTS

The results of research conducted on 375 pregnant women in Medan City, North Sumatra are described as follows:

Table 1. Frequency Distribution of Determinant Factors from Pregnancy Preparation and Pregnancy Preparation

Independent Variable	Category	f	%
Social Demographics			
Age	Early adulthood	238	63.5
	Middle adult	137	36.5
Education	Primary school	-	-
	Secondary school	251	66.9
	College	124	33.1
Economic status	Low	167	44.5
	Intermediate	208	55.5
	Top	-	-
Obstetric characteristics			
Pregnancy status	Primigravida	269	71.7
	Multigravida	106	28.3
History of depression before pregnancy	Never	-	-
	Seldom	189	50.4
	Often	186	49.6
Preparation for pregnancy	No preparation	194	51.7
	Some preparation	-	-
	Prepared	181	48.3

Table 1 shows that most pregnant women with early adulthood (63.5%), most pregnant women with high school education (66.9%), most pregnant women with middle economic status (55.5%), most pregnant women with pregnancy status are primigravida(71.7%), most pregnant women have a history of depression before pregnancy in the rare category (50.4%) and the majority of pregnant women stated that they did not prepare for pregnancy in Medan City, North Sumatra.

Table 2. Factors Related to Pregnancy Preparation

Variable	Preparation for pregnancy				Total		P-value
	No preparation		Prepared		f	%	
	f	%	f	%			
Age							
Early adulthood	141	59.2	97	40.8	238	100	0.005
Middle adult	53	38.7	84	61.3	137	100	
Education							
Secondary school	171	68.1	80	31.9	251	100	0.001
College	23	18.5	101	81.5	124	100	
Economics status							
Low	98	58.7	69	41.3	167	100	0.012
Intermediate	96	46.1	112	53.9	208	100	
Pregnancy status							
Primigravida	120	44.6	14932	55.430.2	269106	100	0.000

Variable	Preparation for pregnancy				Total		P-value
	No preparation		Prepared		f	%	
	f	%	f	%			
Multigravida	74	69.8			100		
History of depression							
Seldom	86	45.5	103	54.5	189	100	0.002
Often	108	58.1	78	41.9	186	100	

Table 2 identifies the results of statistical tests using Chi-Square on all determinant factors. It was found that there was a significant relationship between age, education, economic status, pregnancy status, and history of depression with preparation for pregnancy in pregnant women in Medan City, North Sumatra.

DISCUSSION

Determinant Factors from Pregnancy Preparation and Pregnancy Preparation

The results of the study in table 1 show that most pregnant women with early adulthood, most pregnant women with high school education, most pregnant women with middle economic status, most pregnant women with pregnancy status are primigravida, most pregnant women have a history of depression before pregnancy in the rare category and the majority of pregnant women stated that they did not prepare for pregnancy in Medan City, North Sumatra. This is following a study by Duko, Ayano, & Bedaso, (2019) which identified the socio-economic and demographic characteristics of pregnant women in early adulthood (53.9%), including having a high school education (34.7%), low family income (68.1%), and being less prepared for pregnancy (32.5%). Pregnant women rarely have a history of depression. Moura, Pedrão, Souza, & Boaventura (2015), found that 17% of pregnant women experienced signs indicating depression associated with low family income.

According to the researcher's analysis, social demographic identification, pregnancy characteristics, and a history of depression with pregnancy preparation in pregnant women can assist health workers in providing support for pregnancy preparation. Where pregnant women in early adulthood will easily understand the information conveyed by health workers and follow antenatal care properly. Gross, Alba, Glass, Schellenberg, & Obrist, (2012) found that the age of pregnant women identified the majority of early adulthood as having started antenatal care.

According to Klodian Dhana et al. (2018), the average pregnant woman is in the early adult category at delivery. Magnus et al. (2020) report that women are known to have experienced their first pregnancy in early adulthood. So, health workers can take advantage of the results of this research in choosing the right method to provide assistance for pregnancy preparation and improve the health of mothers and children.

Factors Related to Pregnancy Preparation

The results of the study in Table 2 show that there is a significant relationship between age, education, economic status, pregnancy status, and history of depression with pregnancy preparation in pregnant women in Medan City, North Sumatra, with each p-value (age p-value = 0.005; education p-value = 0.001; economic status p-value = 0.012; pregnancy status p-value = 0.000; and history of depression p-value = 0.002).

This is supported by studies by Hall et al., (2016), which found that there is a relationship between pregnancy preparation and maternal and paternal age and education, marital status, number of living children, birth spacing, socioeconomic status, intimate partner violence, and previous depression. In addition, women who have experienced depression, abuse in the past year, or sexual violence are at a higher risk of an unprepared pregnancy.

According to the researcher's analysis, the determinant factors (age, education, economic status, pregnancy status, and history of depression) are related to preparation for pregnancy. When viewed from the age factor, most of the respondents include early adulthood. Individuals in their early adulthood are still burdened by unaddressed emotional conditions, which is consistent with the findings of Habib et al., (2017) in Pakistan, who discovered a high prevalence of unwanted pregnancies (38.2%), implying that pregnant women do not prepare for pregnancy optimally.

Educational factor, most of the respondents' education was at the high school level. Individuals who complete high school receive only reproductive health socialization but no information about pregnancy knowledge. This has an impact on the respondent's desire to prepare for a healthy pregnancy.

The study by de Oliveira Rodrigues et al., (2022) showed that most pregnant women did not prepare for pregnancy (65%), which was related to the mother's lack of knowledge. According to Wardani and Tridiyawati, (2022), knowledge aids pregnant women's psychological readiness in properly preparing for a pregnancy. Sampoera, Wardani, & Hapsari, (2020) at the educational level, support the mother's knowledge in preparing for pregnancy through prenatal check-ups.

Economic status factors, most of the respondents with low economic status. This condition determines the preparation for pregnancy, both in fulfilling nutritional needs and acquiring equipment for welcoming the baby. According to Yelkumo, Suara, Boakye-Yiadom, & Aryee, (2019), economic status shapes the behavior of mothers to prepare themselves adequately for a healthy pregnancy, birth, and emergency service delivery. Faisal-Cury, (2015) pregnant women with financial adequacy support preparation for pregnancy in their obstetric examination. According to Yadegari et al., (2017), mothers can prepare for healthy pregnancies if their economic situation allows them to meet their food needs.

Regarding the pregnancy status factor, most of the respondents were primigravida. This situation demonstrates that respondents who have never been pregnant are unaware of the things that must be prepared during pregnancy. According to Ranatunga & Jayaratne, (2020) mothers who do not prepare for pregnancy include unmarried women, primigravida, and those who lack knowledge about contraception. According to Abita and Shikur, (2020) primigravida mothers who have complete antenatal visits can prepare for pregnancy well and are not concerned about the delivery. So, primigravida mothers don't prepare for a pregnancy properly because they don't know the information.

In terms of the history of depression, most of the respondents had rarely experienced depression before pregnancy. This shows that the respondent experiences a burden on his mind that interferes with his focus of attention in preparing for pregnancy. Shakeel et al., (2015), a history of depression often occurs three months before pregnancy, which has an impact on maternal and fetal complications.

This condition has an impact on the mother in preparation for pregnancy to maintain healthy fetal development. According to Belay, Moges, Hiksa, Arado, &

Liben, (2018) mothers who experienced depression before pregnancy can experience recurrent depression, so they are unable to prepare for a healthy pregnancy.

CONCLUSION

The conclusion from the results of this study was that most pregnant women were in early adulthood, most pregnant women with high school education, most pregnant women with middle economic status, most pregnant women with pregnancy status were primigravida, most pregnant women had a history of depression. Before pregnancy in the rare category, and most of the pregnant women stated that they did not prepare for pregnancy in the city of Medan, North Sumatra. While the results of the bivariate analysis showed that there was a significant relationship between age, education, economic status, pregnancy status, and history of depression with preparation for pregnancy in pregnant women in Medan City, North Sumatra.

Based on the results of this study, it is recommended for health center workers to be able to cooperate with village health cadres in socializing pregnancy preparation for pregnant women and prospective brides during preconception. So that mothers have the readiness both physically, psychologically, financially, socially, interpersonally, intellectually and skills to undergo pregnancy. In addition, it is hoped that future researchers will be able to analyze models of pregnancy preparation assistance for pregnant women and their supporting factors.

REFERENCES

- Abita, Z., & Shikur, Z. (2020). Assessment of knowledge and practice on birth preparedness and complication readiness among women who gave birth in the last 12 months in southwest, Ethiopia 2016. *Global Reproductive Health*, 5(3), e48–e48. <https://doi.org/10.1097/grh.0000000000000048>
- Almaghaslah, E., Rochat, R., & Farhat, G. (2017). Validation of a pregnancy planning measure for Arabic-speaking women. *PLoS ONE*, 12(10), 1–17. <https://doi.org/10.1371/journal.pone.0185433>
- Bagherzadeh, R., Gharibi, T., Safavi, B., Mohammadi, S. Z., Karami, F., & Keshavarz, S. (2021). Pregnancy; an opportunity to return to a healthy lifestyle: a qualitative study. *BMC Pregnancy and Childbirth*, 21(1), 1–12. <https://doi.org/10.1186/s12884-021-04213-6>
- Bauer, I., Hartkopf, J., Kullmann, S., Schleger, F., Hallschmid, M., Pauluschke-Fröhlich, J., ... Preissl, H. (2020). Spotlight on the fetus: How physical activity during pregnancy influences fetal health: A narrative review. *BMJ Open Sport and Exercise Medicine*, 6(1). <https://doi.org/10.1136/bmjsem-2019-000658>
- Belay, Y. A., Moges, N. A., Hiksa, F. F., Arado, K. K., & Liben, M. L. (2018). Prevalence of antenatal depression and associated factors among pregnant women attending antenatal care at Dubti Hospital: A case of pastoralist region in northeast Ethiopia. *Depression Research and Treatment*, 208(7), 1–9. <https://doi.org/10.1155/2018/1659089>
- Bind, R. H., Biaggi, A., Bairead, A., Du Preez, A., Hazelgrove, K., Waites, F., ...

- Pariante, C. M. (2021). Mother–infant interaction in women with depression in pregnancy and in women with a history of depression: the Psychiatry Research and Motherhood – Depression (PRAM-D) study. *BJPsych Open*, 7(3), 1–10. <https://doi.org/10.1192/bjo.2021.52>
- Borges, A. L. V., Barrett, G., dos Santos, O. A., Nascimento, N. de C., Cavahieri, F. B., & Fujimori, E. (2016). Evaluation of the psychometric properties of the London Measure of Unplanned Pregnancy in Brazilian Portuguese. *BMC Pregnancy and Childbirth*, 16(1), 1–9. <https://doi.org/10.1186/s12884-016-1037-2>
- Bukenya, J. N., Wanyenze, R. K., Barrett, G., Hall, J., Makumbi, F., & Guwatudde, D. (2019). Contraceptive use, prevalence and predictors of pregnancy planning among female sex workers in Uganda: A cross sectional study. *BMC Pregnancy and Childbirth*, 19(1), 1–12. <https://doi.org/10.1186/s12884-019-2260-4>
- Das, S., Hall, J., Barrett, G., Osrin, D., Kapadia, S., & Jayaraman, A. (2021). Evaluation of the Hindi version of the London Measure of Unplanned Pregnancy among pregnant and postnatal women in urban India. *BMC Pregnancy and Childbirth*, 21(1), 1–13. <https://doi.org/10.1186/s12884-021-04075-y>
- De Oliveira Rodrigues, G., da Silva Jardimino, D., de Souza Maciel, N., da Silva Ferreira, D., Chaves, A. F. L., & da Costa, C. C. (2022). Knowledge, attitude, and practice of pregnant women before and after a group intervention. *Enfermeria Global*, 21(2), 261–273. <https://doi.org/10.6018/eglobal.478911>
- Duko, B., Ayano, G., & Bedaso, A. (2019). Depression among pregnant women and associated factors in Hawassa city, Ethiopia: An institution-based cross-sectional study. *Reproductive Health*, 16(1), 1–6. <https://doi.org/10.1186/s12978-019-0685-x>
- Faisal-Cury, A., Quayle, J., Marques, T., Menezes, P. R., & Matijasevich, A. (2015). The relationship between socioeconomic indicators during pregnancy and gynecological appointment at any time after childbirth. *International Journal for Equity in Health*, 14(1), 1–7. <https://doi.org/10.1186/s12939-015-0191-x>
- Flynn, A. C., Pryke, E., Wadhera, M., Poston, L., & White, S. L. (2021). A preconception intervention targeted at women with modifiable risk factors before pregnancy to improve outcomes; protocol for the Get Ready! feasibility trial. *Pilot and Feasibility Studies*, 7(1), 1–7. <https://doi.org/10.1186/s40814-021-00824-0>
- Gross, K., Alba, S., Glass, T. R., Schellenberg, J. A., & Obrist, B. (2012). Timing of antenatal care for adolescent and adult pregnant women in south-eastern Tanzania. *BMC Pregnancy and Childbirth*, 12(16), 1–12. <https://doi.org/10.1186/1471-2393-12-16>
- Habib, M. A., Raynes-Greenow, C., Nausheen, S., Soofi, S. B., Sajid, M., Bhutta, Z. A., & Black, K. I. (2017). Prevalence and determinants of unintended pregnancies amongst women attending antenatal clinics in Pakistan. *BMC Pregnancy and*

Childbirth, 17(1), 1–11. <https://doi.org/10.1186/s12884-017-1339-z>

- Hall, J. A., Barrett, G., Copas, A., Phiri, T., Malata, A., & Stephenson, J. (2018). Reassessing pregnancy intention and its relation to maternal, perinatal and neonatal outcomes in a low-income setting: A cohort study. *PLoS ONE*, 13(10), 1–17. <https://doi.org/10.1371/journal.pone.0205487>
- Hall, J. A., Barrett, G., Phiri, T., Copas, A., Malata, A., & Stephenson, J. (2016). Prevalence and determinants of unintended pregnancy in Mchinji district, Malawi; using a conceptual hierarchy to inform analysis. *PLoS ONE*, 11(10), 1–23. <https://doi.org/10.1371/journal.pone.0165621>
- Hijazi, H. H., Alyahya, M. S., Al Abdi, R. M., Alolayyan, M. N., Sindiani, A. M., Raffee, L. A., ... Al Marzouqi, A. M. (2021). The impact of perceived social support during pregnancy on postpartum infant-focused anxieties: A prospective cohort study of mothers in Northern Jordan. *International Journal of Women's Health*, 13(October), 973–989. <https://doi.org/10.2147/IJWH.S329487>
- Klodian Dhana, Geng Zong, Changzheng Yuan, Schernhammer, E., Zhang, C., Wang, X., ... Alison. (2018). Lifestyle of women before pregnancy and the risk of offspring obesity during childhood through early adulthood. *Physiology & Behavior*, 176(1), 139–148. <https://doi.org/10.1038/s41366-018-0052-y>.Lifestyle
- Magnus, M. C., Ferreira, D. D. S., Borges, M. C., Tilling, K., Lawlor, D. A., & Fraser, A. (2020). Cardiometabolic health during early adulthood and risk of miscarriage: a prospective study. *Wellcome Open Research*, 5(205), 1–18. <https://doi.org/10.12688/WELLCOMEOPENRES.16245.1>
- Mihretie, G. N., & Habitamu, A. (2022). Pregnancy outcomes among women who gave birth at health institutions: A cross-sectional study. *Health Science Reports*, 5(5), 1–13. <https://doi.org/10.1002/hsr2.843>
- Moura, V. F. de S., Pedrão, L. J., Souza, A. C. S., & Boaventura, R. P. (2015). Depression among pregnant women at the end of pregnancy. *SMAD. Revista Eletrônica Saúde Mental Álcool e Drogas (Edição Em Português)*, 11(4), 234. <https://doi.org/10.11606/issn.1806-6976.v11i4p234-42>
- Mwase-Musicha, L., Chipeta, M. G., Stephenson, J., & Hall, J. A. (2022). How do women prepare for pregnancy in a low-income setting? Prevalence and associated factors. *PLoS ONE*, 17(3 March), 1–12. <https://doi.org/10.1371/journal.pone.0263877>
- Nascimento, N. de C., Borges, A. L. V., & Fujimor, E. (2019). Preconception health behaviors among women with planned pregnancies. *Rev Bras Enferm*, 72(Suppl 3), 17–24.
- Naze, C. (2017). Current Concepts of Maternal Nutrition. *Pediatric Emergency Care*, 33(12), 792–793. <https://doi.org/10.1097/01.pec.0000526609.89886.37>

- Olani, A. B., Bekelcho, T., Woldemeskel, A., Tefera, K., & Eyob, D. (2022). Evaluation of the Amharic version of the London measure of unplanned pregnancy in Ethiopia. *PLoS ONE*, *17*(6 June), 1–15. <https://doi.org/10.1371/journal.pone.0269781>
- Poudel, K., Kobayashi, S., Miyashita, C., Ikeda-araki, A., Tamura, N., Bamai, Y. A., ... Kishi, R. (2021). Hypertensive disorders during pregnancy (Hdp), maternal characteristics, and birth outcomes among Japanese women: A hokkaido study. *International Journal of Environmental Research and Public Health*, *18*(7). <https://doi.org/10.3390/ijerph18073342>
- Ranatunga, I. D. J. C., & Jayaratne, K. (2020). Proportion of unplanned pregnancies, their determinants and health outcomes of women delivering at a teaching hospital in Sri Lanka. *BMC Pregnancy and Childbirth*, *20*(1), 1–16. <https://doi.org/10.1186/s12884-020-03259-2>
- Sampoera, W. K. D. ., Wardani, H. E., & Hapsari, A. (2020). The Correlation Between Level of Knowledge, Socio-Economic Status, Health Care Support, and Family Support With the Frequency of Pregnancy Examination Visits in Nganjuk. *Advances in Health Sciences Research*, *31*, 72–76. <https://doi.org/10.2991/ahsr.k.201203.013>
- Shakeel, N., Eberhard-Gran, M., Sletner, L., Slinning, K., Martinsen, E. W., Holme, I., & Jennum, A. K. (2015). A prospective cohort study of depression in pregnancy, prevalence and risk factors in a multi-ethnic population. *BMC Pregnancy and Childbirth*, *15*(1), 1–11. <https://doi.org/10.1186/s12884-014-0420-0>
- Solís-Cordero, K., Couto, L. A., Duarte, L. S., Borges, A. L. V., & Fujimori, E. (2021). Pregnancy planning does not interfere with child development in children aged from 11 to 23 months old. *Revista Latino-Americana de Enfermagem*, *29*, 1–11. <https://doi.org/10.1590/1518-8345.5356.3506>
- Tadese, M., Dagne, K., Wubetu, A. D., Abeway, S., Bekele, A., Kebede, W. M., & Mulu, G. B. (2022). Assessment of the adverse pregnancy outcomes and its associated factors among deliveries at Debre Berhan Comprehensive Specialized Hospital, Northeast Ethiopia. *PLoS ONE*, *17*(7 July), 1–13. <https://doi.org/10.1371/journal.pone.0271287>
- Wardani, A. B., & Tridiyawati, F. (2022). Education In Preparing Psychology Of Pregnant Mothers To Face Delivery The Covid-19 Puskesmas (Community Health Center) The Year 2022. *International Journal of Medicine and Health (IJMH)*, *1*(4), 17–20.
- Yadegari, L., Dolatian, M., Mahmoodi, Z., Shahsavari, S., & Sharifi, N. (2017). The relationship between socioeconomic factors and food security in pregnantwomen. *Shiraz E Medical Journal*, *18*(1), 1–6. <https://doi.org/10.17795/semj41483>

Yargawa, J., Machiyama, K., Ponce Hardy, V., Enuameh, Y., Galiwango, E., Gelaye, K., ... Machiyama, K. (2021). Pregnancy intention data completeness, quality and utility in population-based surveys: EN-INDEPTH study. *Population Health Metrics*, 19(Suppl 1), 1–19. <https://doi.org/10.1186/s12963-020-00227-y>

Yelkumo, Suara, S. B., Boakye-Yiadom, & Aryee, P. A. (2019). Socio-Economic Determinants of Birth and Emergency Preparedness in Antenatal Care: a Study Among Mothers in the Wa Municipality. *UDS International Journal of Development [UDSIJD]*, 6(1), 10–22. Retrieved from <http://www.udsijd.org>