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# Development of a family support model to reduce preeclampsia through antenatal care

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**ABSTRACT**

**Introduction:** One of the pregnancy complications that needs to be monitored is the occurrence of preeclampsia because it has a high risk of maternal and infant death. The risk of preeclampsia during pregnancy can be determined through routine pregnancy checks. Routine pregnancy checks, or antenatal care, have low coverage. This study aimed to investigate the validity of the family centered maternity care (FCMC) construct and the relationship between pregnant women's characteristics, family characteristics, healthcare factors, sources of support, and family support in antenatal visit adherence using structural equation modeling (SEM).

**Methods:** The research design was correlational, using a Cross-Sectional Study approach. A total of 135 respondents were included in this study. The research data were analyzed using structural equation modeling.

**Results:** FCMC-based family support is based on the characteristics of pregnant women, family characteristics, health services, and sources of support, with family characteristics being the most significant contributor to FCMC-based family support. Compliance with antenatal care (ANC) visits is shaped by family characteristics, health services, and FCMC-based family support, where FCMC-based family support is the variable that makes the most significant contribution to ANC visit compliance for pregnant women.

**Conclusions:** Health services are essential for facilitating public health issues, with all efforts and activities carried out to prevent and treat diseases. Health service officers must involve families in antenatal care to avoid complications during pregnancy.

**Keywords:** antenatal care, community health, maternity, social support

## Introduction

One of the complications of pregnancy is preeclampsia, which is associated with a high risk of maternal and infant death (Poon *et al.*, 2018). The risk of preeclampsia during pregnancy can be determined through routine pregnancy checks. Routine pregnancy checks, or antenatal care, have low coverage. The risk of preeclampsia in pregnancy increases owing to hyperlipidemia, migraines, and diabetes mellitus. Pregnant women and their families can make efforts to reduce the risk factors and prevent the incidence of preeclampsia (Lederer *et al.,* 2020). According to the World Health Organization (WHO), hypertension during pregnancy is still one of the five leading causes of maternal death worldwide, accounting for approximately 12%. In developing countries, the incidence of preeclampsia is approximately 3-10%, and eclampsia is 0.3-0.7% of pregnancies (WHO, 2019).

According to the World Health Organization (WHO), hypertension during pregnancy is still one of the five leading causes of maternal death in the world, which is around 12%. In developing countries, the incidence of preeclampsia is approximately 3-10% and eclampsia is 0.3-0.7% of pregnancies (WHO, 2019). The incidence of preeclampsia in Indonesia ranks second among the causes of maternal death after bleeding  (Ministry of Health of the Republic of Indonesia, 2020).  Preeclampsia

accounts for one-third of the maternal mortality in East Java. The risk factor causing maternal death in 2020 was hypertension in pregnancy, that is, 26.90% or as many as 152 people. In 2021, it was 9.62%, or 123 cases (Dinas Kesehatan Provinsi Jawa Timur, 2021).

Various efforts have been made to prevent the incidence of preeclampsia in pregnancy, including early detection when the mother visits antenatal care (ANC)(Islam, Kabir and Talukder, 2020). Through antenatal care, pregnancy checks can be carried out by optimizing the physical and psychological health of pregnant women so that they can handle childbirth, the postpartum period, preparation for breastfeeding, and return to normal reproductive health (Wilson *et al.*, 2019). Through routine antenatal care examinations, pregnancy complications, including preeclampsia, can be identified earlier, so that faster and more appropriate handling efforts can be made, and prevention programs can be planned based on the risk factors found (Liabsuetrakul *et al.*, 2018).Husbands' attitudes towards ANC, head of household, awareness of pregnancy complications, and history of abortion were predictors (Tesfaye *et al.*, 2018)

The success of the ANC visit program may be influenced by many factors, including the characteristics of the pregnant woman, the mother's physiological condition, the health history, family health history, and social support, including family support (Hijazi *et al.*, 2018). One factor identified as possibly contributing to antenatal care visit compliance is the support of the closest person to the pregnant woman, namely the family. For pregnant women, family is the main source of social support during the perinatal period (antenatal, intranatal, and postnatal) (Gashaw, Magnus and Schei, 2019), and another factor that also influences the possibility of ANC compliance is the motivation of pregnant women about the importance of pregnancy checks (Haftu *et al.*, 2018) (Bintabara *et al.*, 2019). Family involvement has long been emphasized, but this form of involvement cannot increase the coverage of ANC visits. The Family Centered Maternity Care (FCMC) approach can be used to strengthen the family support model so that ANC visits can be increased and preeclampsia complications can be identified and prevented. Through this FCMC approach, prenatal care can be carried out according to the wishes of the mother and family, which plays an active role in antenatal education; the spouse or closest person plays an active role in antenatal care; and health workers provide support during antenatal care (Phillips, 2003). Support from the FCMC and social support theories is expected to strengthen the family support model in shaping pregnant women's compliance behavior in routine antenatal care. In addition, developing the FCMC theory with The Information-Motivation-Behavioral (IMB) Skills Model of health behavior will encourage pregnant women to comply with antenatal care. The compliance of pregnant women in carrying out ANC is an important effort to prevent preeclampsia, especially for primary prevention in health promotion, risk factor reduction, and health protection measures. Through the FCMC approach, family support becomes more comprehensive in improving adherence to antenatal visits as a preventive measure for preeclampsia. Our study aimed to investigate the construct validity of FCMC and the relationship between pregnant women's characteristics, family characteristics, healthcare factors, sources of support, and family support in antenatal visit adherence using structural equation modeling (SEM).

## Materials and Methods

### Study design and sample

The research design used was a cross-sectional study approach. The sample size was determined based on the rules of thumb calculation (Ali Memon *et al.*, 2020), namely 5 × 27 = 135 samples. A total of 135 respondents were included in this study based on the following criteria: a) pregnant women living with family, b) communicating using Indonesian, and c) reading and writing.

### Instruments

#### Characteristics of pregnant women

This questionnaire consists of gestational age, high-risk age in pregnancy (< 20 years or > 35 years), and low-risk age in pregnancy if 20-35 years. (Kementerian Kesehatan, 2019); education level; The knowledge instrument was prepared using a questionnaire developed by the researcher based on the Maternal and Child Health Guidelines to measure 3 understandings based on parameters about: 1) pregnancy, consisting of the primary responsibilities of pregnancy, maternal health, and physiological changes in mothers during pregnancy, 2) antenatal care, consisting of knowledge about antenatal care, types of antenatal examinations, husband support during antenatal care, and 3) preeclampsia risk, consisting of complications during pregnancy, signs and symptoms of preeclampsia; Body Mass Index (BMI), Mean Arterial Pressure (MAP) is the average arterial blood pressure of pregnant women; Roll Over Test (ROT) is the result of comparison of diastolic blood pressure in the left oblique position and supine position in the measurement of blood pressure of pregnant women; Childbirth history, the fifth pregnancy or more is called Grande multigravida, the second to fourth pregnancy is called multigravida and the first pregnancy is called primigravida; Type of current pregnancy, multiple pregnancies / gemelli and singleton pregnancies; medical history instruments were prepared to identify a history of preeclampsia, history of chronic hypertension, history of DM, history of kidney disease and history of heart disease. The motivational instrument used was a questionnaire in the form of a Likert-type

Table 2 Convergent Validity Test Results

| Latent Variables | Observational Variables | Loading Factor | AVE |
|---|---|---|---|
| Characteristics of Pregnant Women (X1) | X1.1 Gestational age | -0.632 | 0.402 |
| | X1.2 Education | -0.039 | |
| | X1.3 Knowledge | 0.726 | |
| | X1.4 BMI | 0.735 | |
| | X1.5 MAP | 0.844 | |
| | X1.6 ROT | 0.717 | |
| | X1.7 Parity | -0.224 | |
| | X1.8 Types of Pregnancy (single/gemelli) | 0.245 | |
| | X1.9 Medical History (preeclampsia, chronic hypertension, kidney disease, DM, heart disease) | 0.760 | |
| | X1.10 Motivations | 0.798 | |
| Family Characteristics (X2) | X 2.1 History of hypertension (parents) | 0.730 | 0.569 |
| | X 2.2 History of Preeclampsia (parents) | 0.783 | |
| | X2.3 Education | 0.735 | |
| | X2.4 Coping Mechanism | 0.738 | |
| | X2.5 Social Relationship Skills | 0.783 | |
| Health Services (X3) | X3.1 Health Information | 0.910 | 0.801 |
| | X3.2 Infrastructure | 0.829 | |
| | X3.3 Health Worker Communication Skills | 0.942 | |
| Support Source (X4) | X 4.1 Public figure support | 0.818 | 0.697 |
| | X 4.2 Health care support | 0.867 | |
| | X4.3 Peer support of pregnant women | 0.819 | |
| Family Support (X5) | X5.1 Comprehensive antenatal support | 0.883 | 0.657 |
| | X5.2 Antenatal education support | 0.810 | |
| | X5.3 Participatory couples | 0.819 | |
| | X5.4 Participatory health workers | 0.723 | |
| Antenatal care/ANC Visit Adherence (Y1) | Y1.1 K1 Visit Compliance | 0.986 | 0.973 |
| | Y1.2 K4 Visit Compliance | 0.986 | |

scale. The questionnaire consisted of five questions that addressed the mother's internal motivation to make antenatal care visits to prevent preeclampsia based on the theory of The Information-Motivation-Behavioral (IMB) skills model of health behavior (Fisher, Fisher and Harman, 2009).

*Family characteristics of pregnant women*

This questionnaire consists of: family coping mechanisms, this coping mechanism instrument is focused on an action or effort made by the family against physical and psychological pressures that come from outside and from within to defend themselves related to antenatal care visits, adopted from (Hambi, S., and Grych, 2015) in the form of 10 closed statements; The Social relationship skills instrument is the family's ability to interact with others in a good, appropriate, and effective way. This instrument refers to the Social Skills Inventory (SSI) (Riggio, 2018) in the form of 17 closed statements.

*Health Services*

The health information instrument used was a Likert scale questionnaire. The questionnaire consists of 10 statements that lead to information from health workers in the form of knowledge obtained from learning, direct experience and relevant to the performance of health behaviors that are easily applied by pregnant women

Table 3 Results of the Coefficient of Determination (R2)

| Dependent Variables | R Square | R Square Adjusted |
|---|---|---|
| Family Support (X5) | 0.315 | 0.294 |
| ANC Visit Compliance (Y1) | 0.373 | 0.349 |

related to antenatal care visits; infrastructure facilities, the questionnaire was adopted from the Ministry of Health's 2020 practical guide (Kementerian Kesehatan Republik Indonesia, 2020); communication skills of health workers, this instrument was adopted from the Interpersonal Communication Skill Scale (ICCS) (Kondo *et al.*, 2020) which consists of 13 statements.

*Source of support*

This questionnaire was used to measure support from community leaders and health workers. The instrument used was The Multidimensional Scale of Perceived Social Support (MSPSS) which consists of 22 statement items; peer support among pregnant women, the instrument used was the Perceived Social Support-Friends (PSS-Fr) (Procidano, 1983). The questionnaire consisted of 14 items.

*Family support*

FCMC-based family support instruments consisting of: comprehensive antenatal support, this comprehensive antenatal support instrument is focused on spiritual and cultural biopsychosocial support according to the needs of pregnant women compiled by researchers based on previous research consisting of 10 statements (Phillips, Celeste R., Zwelling, 2001; Phillips, 2003); antenatal education support, related to antenatal education activities based on previous research consisting of 10 statement items (Phillips, 2003; Kementerian Kesehatan RI, 2020); partner participation, the instrument was adopted from the PPQ (Patient Participation Questionnaire) consisting of 11 statements; health worker participation, adopted from the PPQ (Patient

Table 4 Results of Hypothesis Testing in Family Centered Maternity Care (FCMC)-Based Family Support Model Research Research on Antenatal Care (ANC) Visit Adherence as Preeclampsia Prevention. (n=135)

| Influence | Path Coefficients | T Statistics (\|O/STDEV\|) | P Values | Note |
|---|---|---|---|---|
| Mother's characteristic factors (X1) → Family support (X5) | 0.209 | 2.591 | 0.005 | Significant |
| Maternal characteristic factors (X1) → ANC visit compliance (Y1) | 0.085 | 1.035 | 0.151 | Not significant |
| Family characteristic factors (X2) → Family support (X5) | 0.230 | 2.737 | 0.003 | Significant |
| Family characteristic factors (X2) → ANC visit compliance (Y1) | 0.178 | 2.771 | 0.039 | Significant |
| Health service factors (X3) → Family support (X5) | 0.157 | 1.991 | 0.028 | Significant |
| Health service factors (X3) → ANC visit compliance (Y1) | 0.140 | 1.407 | 0.080 | Not significant |
| Source of support factors (X4) → Family support (X5) | 0.195 | 2.520 | 0.006 | Significant |
| Source of support factors (X4) → ANC visit compliance (Y1) | 0.170 | 2.340 | 0.010 | Significant |
| Family support (X5) → ANC visit compliance (Y1) | 0.281 | 3.152 | 0.001 | Significant |

Participation Questionnaire) consisting of 13 statement items (Berg *et al.*, 2020).

*Compliance with antenatal care visits*

The instrument for compliance with antenatal care visits in the 1st trimester (K1) is made in the form of an observation sheet, whose data are taken from records of antenatal care visits based on the maternal and child health book. All questionnaires used in this study were tested for validity and reliability, and based on the test results, the questionnaire was valid and reliable for use in research.

Ethical Considerations

This study involved pregnant women, and the intervention carried out in this study was health promotion so that the risks arising were minimal. All respondents involved in the research provided informed consent to participate in the research. There was no coercion for respondents involved in this study. This research received ethical approval from the Ethical Commission of Airlangga University (No: 2776-KEPK).

## Results

Characteristics of research variables

The results of the study illustrated in Table 1 show that the age of most pregnant women is a low-risk age (69 respondents, 51.1%), the most educated is junior high school (56 respondents, 51.1%), and the knowledge of pregnant women is not well informed (78 respondents, 57.8%). Furthermore, pregnant women had BMI da; 88 respondents (65.2 %), most MAP were normal BBl, 91 (67.4%) had normal MAPs, and 97 (71.9%) had negative ROTs. The next data point is the parity status of pregnant women, with the highest number being multigravida, namely 71 respondents (52.6%). The majority of single fetuses are 131 (97%), in medical history, most do not have

risk, which is 98 (72.6%), and pregnant women, most have strong motivation, namely 101 (74.8%).

Family Characteristic Factor (X2)

Based on Table 1, data were obtained that in the characteristics of the majority families did not have a history of hypertension, namely 110 respondents (81.5%), the majority did not have a history of preeclampsia, namely 113 respondents (83.7%). The highest number of family education is junior high school at 64 respondents (47.4%), most have adaptive coping mechanisms at 107 respondents (79.3%), and most have high categorical social relationship skills at 96 respondents (71.1%)

Health Care Factor (X3)

The data obtained based on Table 1 related to health service factors show that most pregnant women receive optimal health information, namely 105 respondents (77.8%); most respondents stated complete infrastructure facilities, namely from 102 respondents (75.6%), and most respondents (100 respondents, 74.1%) stated good communication skills of health workers.

Support Source Factor (X4)

Sources of support for pregnant women based on the data in Table 1 show that support from community leaders is mostly moderate for 92 respondents (68.1%), sources of support from cadres are also medium for 86 respondents (63.7%), and sources of peer support for pregnant women are mostly medium for 82 respondents (60.7%).

FCMC Based Family Support (X5)

As shown in Table 1, the highest number of comprehensive antenatal support was moderate support at 68 respondents (50.4%), and most respondents (60.7%) had moderate antenatal education support. Furthermore, the highest number of participatory
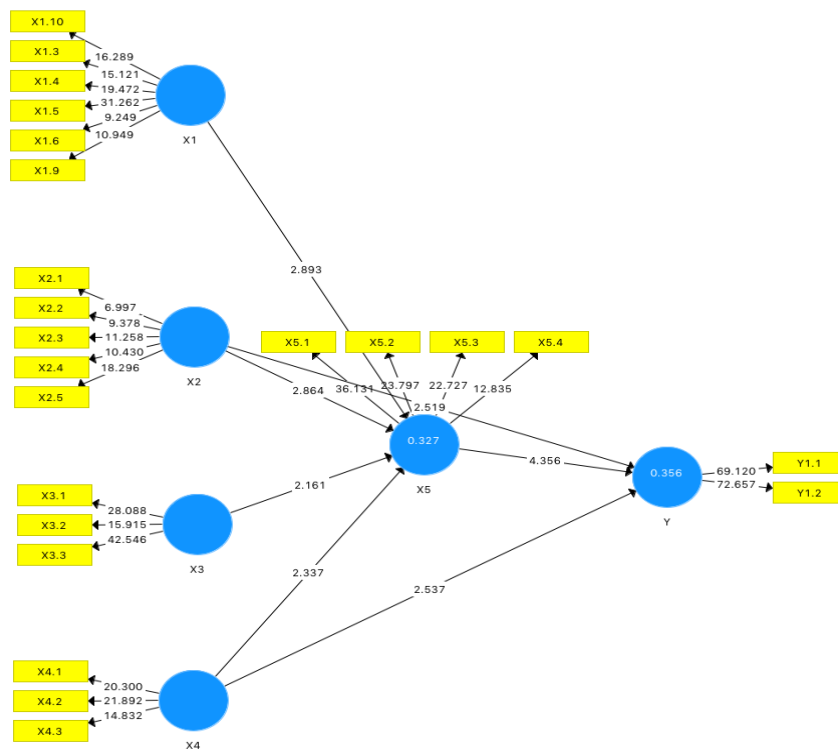
Figure 1. Development of a Family Support Model for Compliance with ANC Visits

couples also had moderate support, namely 67 respondents (49.6%), and participatory health workers, most supported in the high category, namely 104 respondents (77%).

ANC Compliance (Y1)

It can be seen in Table 1 that K1 visit compliance is mostly compliant with 104 respondents (77%), and the majority of K4 visit compliance is compliant with 113 respondents (83.6%).

SEM Analysis

Table 2 shows that the majority of the indicators in each variable in this study had an outer loading value greater than 0.7. In addition, there are four indicators with an outer loading value of less than 0.7, namely, the variable of the maternal characteristic factors. This shows that variable indicators with an outer loading value greater than 0.70 have a high level of validity, thus meeting convergent validity. Variable indicators with an outer loading value smaller than 0.70 have a low level of validity, so they need to be eliminated or removed from the model.

Deletion was performed on the variables of maternal characteristic factors (X1) for indicators of age (X1.1), education (X1.2), parity (X1.7), and type of pregnancy (X1.8), which had values smaller than 0.7. After removing invalid indicators, the Average Variance Extracted (AVE) value was checked. All the indicators had an AVE value greater than 0.5. Thus, the convergent validity of all indicators is valid for measuring the variable.

As shown in Figure 1, all indicators had an outer loading factor value greater than 0.7. This means that all indicators can describe the latent constructs or variables well.

Coefficient of determination (R2)

The coefficient of determination (R2) is used to determine the magnitude of the ability of endogenous variables to explain the diversity of exogenous variables, or in other words to determine the magnitude of the contribution of exogenous variables to endogenous variables. Second, structural models are assessed by examining the percentage of variance described by R2 (R-square) for endogenous variables. R2 to assess how much the diversity of endogenous variables can be explained by exogenous variables. The results of R2 can be seen in the following table:

Table 3 shows that the variables of family support and ANC visit compliance were influenced by moderate outcome categories by exogenous variables. The R-square value of the family support variable (X5) is 0.315 or 31.5%. This shows that the diversity of family support variables (X5) can be explained by maternal characteristic factors (X1), family characteristics factors (X2), health service factors (X3), and support source factors (X4) to family support (31.5%), which are the contributions of other variables not discussed in this study.

The R-square value on ANC visit compliance was 0.373 or 37.3%. This shows that ANC visit compliance (Y1) can be explained by the family support variable (X5) at 37.3%; in other words, the contribution of the effect of FCMC-based family support on ANC visit compliance is

37.3%, while the remaining 62.7% is the contribution of other variables that are not included in the model.

## Discussions

The results showed a significant relationship between the characteristic factors of pregnant women, including knowledge, BMI, MAP, ROT, medical history, and motivation with family support. The direction of the relationship was positive, which means that the better the characteristic factors of pregnant women, the better the family support provided. The characteristics of pregnant women are something that expresses, distinguishes, or is typical of the characteristics of pregnant women, where the characteristics referred to in this explanation are those related to the condition of the mother's pregnancy. Knowledge of pregnancy is a preventive effort to avoid complications during pregnancy (Bhattacharya and Bhatt, 2017). The knowledge of pregnant women who are good and support healthy behavior during pregnancy will have a close relationship with how the family provides support (Carlson et al., 2020). Lack of social or family support can negatively impact nutritional intake, antenatal care, and weight gain during pregnancy (Senobari, Azmoude and Mousavi, 2019). Family support can improve the behavior of pregnant women in meeting nutritional needs during pregnancy (Cathey et al., 2023). The support provided by the family in maintaining the motivation of pregnant women, especially in providing informational, emotional and reward support (Carlson et al., 2020)

Based on the results of the research that has been conducted, it was found that support source factors, including community leaders, health cadres, and peers of pregnant women, affect adherence to antenatal care visits. Community leaders, health cadres, and peers of pregnant women often interact with pregnant women. Community leaders are respected by the community. Advice and remarks delivered by community leaders tend to be positive and carried out. Community leaders' encouragement of pregnant women about the importance of pregnancy checks is believed to be a good and right thing to do) (Aziato et al., 2017; Godongwana et al., 2021). Community leaders are trusted to provide advice related to problems that occur in their environment, including encouraging and inviting pregnant women to actively carry out pregnancy checks (Boniphace et al., 2021).

Health cadres are selected from community members to make it easier for health workers, including pregnant women, to coordinate with the community (Tiwari, Negandhi and Zodpey, 2022). Pregnancy check activities performed by health workers always involve health cadres. The involvement and activity of health cadres is a very important factor in increasing the motivation of pregnant women to make antenatal care visits (Ballard et al., 2023). The role of cadres in antenatal services is very

important, because cadres as companions for pregnant women can provide motivation to carry out pregnancy checks and moral support so that mothers can get through their pregnancies well (Tiwari, Negandhi and Zodpey, 2022). The existence of health cadres in the environment of pregnant women makes it very easy for cadres to interact and carry out participatory functions as an extension of health workers in increasing the coverage of antenatal care visits (Soni et al., 2023)

This study showed that sources of support from pregnant women's peers affect adherence to antenatal care visits. The relationship between pregnant women and their peers becomes closer when both have problems and needs that tend to be the same, because they will be mutually reinforcing. There is a significant relationship between peer support of pregnant women and the regularity of pregnant women visiting health services (Simpson, Wepa and Bria, 2020), and the focus group discussion (FGD) method conducted on pregnant women with their peers is effective in improving perceptions about pregnancy, its complications, and prevention (Brændstrup et al., 2023). Based on the explanation of the results of research and related research that has been described, it can be said that the peer of pregnant women is very important to be actively involved in providing support to pregnant women in improving compliance with antenatal care visits. Conditions tended to have similar characteristics among pregnant women, and both tended to have the same needs. This makes it easier for pregnant women and their peers to discuss, exchange opinions, and find new information, among other things that are common needs.

Sources of support from community leaders, health cadres, and peers of pregnant women are important in forming family support that can strengthen pregnant women's ability to make regular ANC visits. The limitations of this research are the wide reach of the research area and the difficulty of interacting with respondents, which means that the reach of the research area is still not fully accessible. This model can be used as a reference or basic data for conducting further research by focusing on the limitations of this research as well as using different theoretical approaches and conceptual models.

## Conclusion

Sharing information and collaboration among birth mothers, families, and health workers is a fundamental basis for family centered obstetric services. It focuses on providing safe and quality maternal and newborn health services while remaining sensitive and responsive to each other's cultural, ethnic, and cultural, ethnic, and/or religious beliefs and practices. The family is the main supporter for pregnant women undergoing the perinatal period, one of which is pregnancy. Characteristics of pregnant women, such as knowledge, BMI, MAP, ROT,

medical history, and motivation, will form a condition in which pregnant women are at risk for the continuity of pregnancy at this time. Positive social support increases visits to pregnant women during antenatal care. The results of this study found that FCMC-based family support influenced the fulfillment of antenatal services, and the family was seen as a basic unit providing support during pregnancy, childbirth, and the postpartum period.

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## Availability of data and materials

The data supporting this study's findings are available from the corresponding author.

## Authors' contributions

DI, EY, and FE were responsible for the research methods. DI was responsible for data collection and analysis. All authors contributed equally to the study design, data analysis, and writing.

## Declaration of Interest

This study has no conflicts of interest.

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Table 1 Characteristics of respondents and research variables

| Indicators | Category | Frequency (f) | Percentage (%) |
|---|---|---|---|
| **Gestational age** | High-risk age (pregnancy < 20 years or > 35 years) | 66 | 49.8 |
| | Low risk age (pregnancy 20-35 years) | 69 | 51.1 |
| **Education level** | Elementary School | 18 | 13.3 |
| | Junior High School | 56 | 41.5 |
| | Senior High School | 45 | 33.3 |
| | Higher education | 16 | 11.9 |
| **Knowledge** | Low knowledge | 2 | 1.5 |
| | Medium knowledge | 55 | 40.7 |
| | Good knowledge | 78 | 57.8 |
| BMI | Obesity | 6 | 4.4 |
| | Excess BB | 34 | 25.2 |
| | BB below normal | 7 | 5.2 |
| | Normal BB | 88 | 65.2 |
| **Mean Artrial Pressure** | Moderate hypertension | 0 | 0 |
| | Severe hypertension | 0 | 0 |
| | Moderate hypertension | 10 | 7.4 |
| | Mild hypertension | 10 | 7.4 |
| | Normal high | 24 | 17.8 |
| | Normal | 91 | 67.4 |
| **Roll Over Test (ROT)** | Positive | 38 | 28.1 |
| | Negative | 97 | 71.9 |
| **Total** | | **135** | **100** |
| **Parity** | Grandemultigravida | 0 | 0 |
| | Multigravida | 71 | 52.6 |
| | Primigravida | 64 | 47.4 |
| **Types of Child Pregnancy** | Double fetus/gemelli | 4 | 3.0 |
| | Single fetus | 131 | 97.0 |
| **Medical history** | Have a history of preeclampsia | 37 | 27.4 |
| | No history of preeclampsia | 98 | 72.6 |
| **Motivation** | Weak | 34 | 25.2 |
| | Strong | 101 | 74.8 |
| **Total** | | **135** | **100** |
| **History of Hypertension** | Have a history of hypertension | 25 | 18.5 |
| | No history of hypertension | 110 | 81.5 |
| **Total** | | **135** | **100** |
| **History of Preeclampsia** | Have a history of preeclampsia | 22 | 16.3 |
| | No history of preeclampsia | 113 | 83.7 |
| **Coping Mechanism** | Maladaptive | 28 | 20.7 |
| | Adaptive | 107 | 79.3 |
| **Social Relationship Skills** | Low social relationship skills | 39 | 28.9 |
| | High social relationship skills | 96 | 71.1 |
| **Health information** | Less | 30 | 22.2 |
| | Optimal | 105 | 77.8 |
| **Infrastructure** | Incomplete | 33 | 24.4 |
| | Complete | 102 | 75.6 |
| **Health Workforce Communication Skills** | Lack of communication skills | 35 | 25.9 |
| | Good communication skills | 100 | 74.1 |
| **Community Leader Support** | Low support | 26 | 19.3 |
| | Medium support | 92 | 68.1 |
| | High support | 17 | 12.6 |
| **Health Cadre Support** | Low support | 8 | 5.9 |
| | Medium support | 86 | 63.7 |
| | High support | 41 | 30.4 |
| **Peer Support for Pregnant Women** | Low support | 2 | 1.5 |
| | Medium support | 82 | 60.7 |
| | High support | 51 | 37.8 |
| **Comprehensive Antental Support** | Low support | 18 | 13.3 |
| | Medium support | 68 | 50.4 |
| | High support | 49 | 36.3 |
| **Antenatal Education Support** | Low support | 15 | 11.1 |
| | Medium support | 82 | 60.7 |
| | High support | 38 | 28.1 |
| **Participatory Couples** | Low support | 10 | 7.4 |
| | Medium support | 67 | 49.6 |
| | High support | 58 | 43.0 |
| **Participatory Health Workers** | Low support | 2 | 1.5 |
| | Medium support | 29 | 21.5 |
| | High support | 104 | 77.0 |
| **K1: Compliance of First Pregnant Women's Visit** | K1 visits are non-compliant | 31 | 23.0 |
| | K1 visits are compliant | 104 | 77.0 |
| **K4: Pregnant women who received antenatal care at least four times** | K4 visits are non-compliant | 22 | 16.3 |
| | K4 visits are compliant | 113 | 83.6 |