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Stress-related factors Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

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ABSTRACT

Stress in pregnant women can be influenced by various factors, including family support, age, parity and maternal knowledge. Stress is a psychological response that arises when an individual faces a situation that is perceived to be beyond their ability or difficult to deal with. The purpose of this study is to find out the factors related to stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency. The research method uses a correlative analytical quantitative research design with a cross sectional approach. The population in this study amounted to 121 respondents with a sample size of 93 respondents calculated using a significance level of 5%, using a non-probability sampling technique, namely accidental sampling. The instruments in this study used a family support questionnaire, a maternal knowledge questionnaire, and a PDQ (Prenatal Distress Questionnaire) stress questionnaire. The results showed that there was a significant relationship between factors such as age, family support, parity, maternal knowledge and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency with a p-value = < 0.05 using the chi square correlation test and the spearman rank correlation test. With this research, it is hoped that it can be an effort to prevent stress in pregnant women through providing support and knowledge to prevent adverse effects on mothers and babies.

INTRODUCTION

Pregnancy is a physiological and natural process. The pregnancy period begins from conception, the development of the fetus in the mother's womb, until the birth of the fetus. The normal length of pregnancy is 280 days (40 weeks or 9 months 7 days) calculated from the last day of menstruation (Lumy et al., 2023). Pregnancy and childbirth are natural for a woman who is naturally inclined to give birth and continue to have children. The process from pregnancy to childbirth is known as a sensitive period in a woman's life (Mardjan, 2016).

Every year, the rate of female pregnancy is increasing, there are 213.4 million pregnancies worldwide with pregnancy rates aged 15-44 years and there are 133 per 1000 women in the same age group (Yanti & Nurrohmah, 2023).

Based on the latest data from the National Population and Family Planning Agency, the number of pregnant women in Indonesia in 2024 is estimated to reach around 4.8 million people per year. This figure is consistent with previous data showing that each year there are around 1.9 to 2 million couples who marry, with most pregnancies occurring in the first year of marriage (BKKBN, 2024).

From the Indonesian Health Profile in 2019, the coverage of health services for pregnant women K1-K4 tends to increase. Achievements in 2019 achieved the target of the Ministry of Health's Strategic Plan (Renstra) in 2019 which amounted to K1 (first visit) of 82% or 4,356,545 pregnant women and K4 (fourth visit) which was 88.4% or reached 4,6446,422 out of 5,356,438 pregnant women in Indonesia.

The Central Statistics Agency of Gorontalo Province reported that the number of pregnant women in 2020 amounted to 26,248 pregnant women (BPS, 2021). Data on pregnant women from the Gorontalo Provincial Health Office in 2024 totals 22,513 people. The region with the highest number of pregnant women

is in Gorontalo Regency with 8,071 pregnant women. Then followed by Gorontalo City with 3,834 people, Boalemo Regency with 3,214, Pohuwato Regency with 3,056, North Gorontalo Regency with 2,576, and Bone Bolango Regency with 1,762 people. The highest number of pregnant women is in Gorontalo Regency based on data from the Gorontalo Regency Health Office, which is at the Limboto Health Center. It was recorded that from October to December 2024 there were 124 pregnant women.

During pregnancy, there will be various changes in the mother, both physiologically and psychologically. The influence of hormonal changes that take place during pregnancy also wars in emotional changes, making feelings erratic, concentration reduced and often dizzy. These changes are mostly due to the influence of the hormones estrogen and progesterone produced by the corpus luteum which develops into the corpus gravidity and continues its secretion by the placenta after it is fully formed. This causes the mother to feel uncomfortable during pregnancy and triggers the onset of stress which is characterized by the mother being often moody (Natalia & Faraswati, 2023).

Stress is one of the reactions or psychological responses of humans when faced with things that are felt to have exceeded the limit or are considered difficult to face (Velga & Suryani, 2022). According to Lazarus in Seto (2020) said that stress is physical and psychological events that are perceived as potential threats to physical and psychological disorders. Stress in pregnant women can be identified through physical and emotional changes, relationships with others, the process of childbirth and body image, as well as infant care and infant health conditions (Ayu & Rahmawati, 2017).

The World Health Organization (WHO) reports that nearly 1 in 5 women will experience a mental health disorder during pregnancy or a year after giving birth. Among women with mental health disorders during pregnancy, 20% will experience suicidal thoughts or self-harm or self-harm (WHO, 2022).

The prevalence of stress and depression in developed countries is around 7-20% and in developing countries it is around more than 20%. The incidence of stress in pregnant women in Indonesia reached 373,000,000 and as many as 107,000,000 or 28.7% of which stress occurred in pregnant women before the delivery process (SDKI, 2020). In a study conducted by Yahdi (2019), it was shown that stress was more experienced in primigravida pregnant women, which was 66.8% compared to 42.1% in multigravida pregnant women (Sari & Handayani, 2023).

Stress during pregnancy can be caused by physical stress as well as psychosocial stress. Stress can also be influenced by internal and external factors (Larasati et al., 2024). The causes of stress in mothers during pregnancy are feeling not ready to be parents, fear of disrupting educational or work programs, there are financial difficulties, physical disorders or physical changes during pregnancy and what is quite often experienced is the fear of the fetus being conceived to experience physical disabilities and retardation. Other causes of stress are related to the large number of stressful lives, events, and satisfaction with services Antenatal Care (ANC), and heavy work during pregnancy (Lungan et al., 2024)

Research in Sweden on antenatal care in 35 weeks of pregnancy 22% experienced stress, in Hong Kong in pregnant women in the first, second and third trimester, 54% experienced anxiety, 37% experienced stress, and a study in Pakistan of 165 pregnant women, as many as 70% experienced anxiety and stress. In Indonesia, research conducted on primigravida in the third trimester as many as 33.93% experienced stress (Velga & Suryani, 2022).

In a study conducted in Indonesia, as many as 33.93% experienced stress in the third trimester. Another study showed that 47.7% of pregnant women experienced severe stress before childbirth, 16.9% moderate stress, and 35.4% mild stress. Several psychological factors such as anxiety and depression can also affect stress levels in pregnant women. High levels of stress in pregnant women can negatively impact the health of pregnant women and the fetus they carry (Marwah et al., 2023).

Stress in pregnant women can be related to several factors such as family support, age, parity and maternal knowledge. Several studies state that family support can reduce the stress level of pregnant women and during childbirth. Pregnant women who receive support from their families experience a decrease in stress levels during pregnancy and before childbirth, while pregnant women who receive low family support will experience high levels of stress (Janiwarty & Pieter, H. Z, 2013 in Velga & Suryani, 2022).

According to House and Kahn (1985) in (Febriati & Zakiyah, 2022) There are four types of family support, namely emotional support, namely family as a safe and peaceful place to rest and calm the mind, then there is assessment support, where the family acts as a mediator and also as a facilitator in solving the problems faced. Support and attention here in the family is a form of positive appreciation given to individuals, then also instrumental support is a source of help in terms of supervision and individual needs. Families are looking for solutions that can help individuals in carrying out activities and finally information support serves as an informant. Here it is hoped that the information provided by the family can be used. According to Widaryanti & Febriati (2020), the changes experienced by pregnant women include mothers needing attention, mothers also need socialization, feeling worried about changes in their bodies by individuals in overcoming the problems they are facing (Febriati & Zakiyah, 2022).

In addition to family support, another factor is age. Age has a great influence on concentration during childbirth. The younger the mother, the less attention and experience the pregnant woman is due to the lack of

preparation for the mother to receive pregnancy. The risk age category is women who are pregnant for the first time at the age of <20 years, the uterus and pelvis have not grown to adult size. A mother's age is related to the female reproductive organs. Healthy and safe reproductive life is 20-35 years (Marwah et al., 2023).

Then in addition to family support and age, parity is a factor that affects where a woman who has given birth to a baby is born alive or stillborn. There are 4 types of parity, namely nullipara, primipara, multipara, and grandemultipara. The safest parity amount is to have a number of children as many as 2-3 children, if you give birth to too many, the risk of giving birth is higher and can cause bleeding. Multipara parity if not treated properly immediately can lead to bleeding Postpartum, will then become a triggering factor for uterine atonia (Purborini & Rumaropen, 2023).

The last factor is knowledge. Knowledge is an indicator of a person in taking action, when a person is based on good knowledge of health, the person will understand the importance of maintaining health and self-motivation to apply it in his life, the higher the knowledge of a pregnant woman about the importance of routine pregnancy checks, the higher a mother will carry out check-ups (Bahrun et al., 2024). Kurniasih's explanation (2019) also states that the mother's level of knowledge of pregnancy danger signs is very important, because if a person is based on good knowledge of it, the mother will know what risks will occur during pregnancy and will make the mother more concerned and motivated to obediently make visits antenatal care, useful to prevent pregnancy risks and complications so that the mother and fetus remain healthy, and can improve the quality of life of the mother and baby. This finding is in line with the findings of Noviatia (2021) which states that the higher the level of knowledge of the mother, the more compliant the pregnant woman will be in conducting the examination antenatal care. The mother's lack of knowledge about pregnancy warning signs leads to a lack of information about the health of the mother and fetus, as well as the risks that will occur if they do not make regular visits antenatal care (Kolantung et al., 2021).

During pregnancy, the impact of maternal stress on the baby can increase the chances of a premature baby being born or a baby born with a low birth weight. The condition of the fetus will be different if the pregnancy has entered an older period, the effects of maternal sadness or stress can make the placenta secrete a lot of corticotropin-releasing hormone (CRH). When the mother cries due to stress, the blood vessels will strengthen because the production of the hormone norepinephrine increases. As a result, the circulation and supply of oxygen to the fetus are reduced and eventually inhibited (Selfiana et al., 2023).

The impact of such stress can be in the form of heart palpitations, increased blood pressure, increased stomach acid, heavy breathing and shortness of breath, emotional changes can even cause premature contractions during pregnancy, hyperemesis gravidarum, abortion, and eclampsia that are very life-threatening for pregnant women can even cause death. In addressing the causes of these problems, a quality approach in terms of stress prevention and moral support for pregnant women is needed starting from pregnancy planning and during pregnancy (Peterson, 2023).

The results of interviews conducted on 4 pregnant women who came to do the examination antenatal care at the Limboto Health Center, all of them were under 30 years old. When conducting the examination, 2 of them came to do the examination alone, while 1 of them came accompanied by her aunt and 1 other pregnant woman accompanied by her husband. When interviewed regarding parity, 3 pregnant women said this pregnancy was the first pregnancy, while 1 pregnant woman said this was the third pregnancy.

Based on the description of the problems that occurred above, the researcher was interested in conducting a research entitled "Factors Related to Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency".

RESEARCH METHODS

This research has been carried out in the Working Area of the Limboto Health Center, Gorontalo Regency. This study uses a correlative analytical quantitative research design with a cross sectional approach. The purpose of this study is to find out whether factors related to stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency. The sampling technique used is a non-probability sampling technique, namely accidental sampling. In determining the size of the sample, the researcher used the slovin formula. So the number of samples was obtained of n = 92.68 which was rounded up to 93 respondents. Data collection in this study used family support questionnaires, maternal knowledge questionnaires, stress questionnaires (prenatal distress questionnaire) and data analysis using chi-square and spearman rank tests.

RESULTS

Respondent Characteristics

Table 1 Characteristics of Respondents by Occupation

No.	Jobs	N	%
1.	Not Working	70	75,3
2.	Work	23	24,7
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 1, it was found that the most respondents did not work, namely 70 respondents (75.3).

Table 2 Distribution of Respondent Characteristics by Education

No.	Education	N	%
1.	No School	1	1,1
2.	SD	11	11,8
3.	Junior High School	24	25,8
4.	High School	30	32,3
5.	College	27	29,0
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 2, it was found that most of the respondents with the last education of high school education were 30 respondents (32.3%).

Table 3 Distribution of Respondent Characteristics by Living with

No.	Living With	N	%
1.	Husband	52	55,9
2.	Parents	2	2,2
3.	Sister-in-law	1	1,1
4.	Husband + Parent	24	25,8
5.	Husband+In-Law	5	5,4
6.	Husband + Brother	2	2,2
7.	Husband+Others (Aunt)	1	1,1
8.	Husband+Parent+Brother	4	4,3
9.	Husband+Mother-in-law+Sister-in-law	1	1,1
10.	Parents+Siblings	1	1,1
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 3, it was found that the most respondents lived with their husbands, namely 52 respondents (55.9%).

Table 4. Distribution of Respondent Characteristics Based on the Most Frequent Accompanies Examinations

No.	Frequently Accompany Examinations	N	%
1.	Alone	12	12,9
2.	Husband	54	58,1
3.	Parents	11	11,8
4.	In-laws	3	3,2
5.	Brother	11	11,8
6.	Sister-in-law	2	2,2
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 4, it was found that the respondents were most often accompanied by their husbands, namely 54 respondents (58.1%).

Table 5 Distribution of Respondent Characteristics by Age Group

No.	Age Group	N	%
1.	<20 years old	7	8
2.	>35 years old	18	19
3.	≥20 years - ≤35 years	68	73
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 5, it was obtained that the most respondents were respondents with the age group of ≥20 years to ≤35 years being the largest group, namely 68 respondents.

Univariate Analysis

Distribution of Respondents by Age in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 6 Distribution of Respondents Based on the Age of Pregnant Women at the Limboto Health Center, Gorontalo Regency

No.	Age	N	%
1.	Risky	25	26,9
2.	No Risk	68	73,1
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 6, the distribution of respondents is obtained based on the age of pregnant women. Of the total 93 respondents, most pregnant women were in the non-risk category, namely 68 respondents (73.1%), and a small number of pregnant women included in the risk category amounted to 25 respondents (26.9%).

Distribution of Respondents Based on Family Support in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 7 Distribution of Respondents Based on Family Support at the Limboto Health Center, Gorontalo Regency

Yes	Family Support	N	%
1.	Height	19	20,4
2.	Medium	53	57,0
3.	Low	21	22,6
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 7, the distribution of respondents was obtained based on the support of pregnant women's families at the Limboto Health Center, Gorontalo Regency. Of the 93 respondents, most received moderate family support, as many as 53 respondents (57.0%). A small percentage received high support as many as 19 respondents (20.4%), and another 21 respondents (22.6%) received low support.

Distribution of Respondents Based on Parity in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 8 Distribution of Respondents Based on Parity at the Limboto Health Center, Gorontalo Regency

No.	Parity	N	%
1.	Primigravida	22	23,7
2.	Multigravity	71	76,3
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 8, the distribution of respondents was obtained based on the parity of pregnant women at the Limboto Health Center, Gorontalo Regency. Of the total 93 respondents, most pregnant women were included in the multigravida category, which was 71 respondents (76.3%), and a small part of the primigravida category amounted to 22 respondents (23.7%).

Distribution of Respondents Based on Knowledge of Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 9 Distribution of Respondents Based on Knowledge of Pregnant Women at the Limboto Health Center, Gorontalo Regency

No.	Mother's Knowledge	N	%
1.	Good	34	36,6
2.	Enough	32	34,4
3.	Less	27	29,0
Total			**100**

Source: Primary Data, 2025

Based on table 9 above, the distribution of respondents was obtained based on the knowledge of pregnant women at the Limboto Health Center, Gorontalo Regency. Of the total 93 respondents, most pregnant women had good knowledge, as many as 34 respondents (36.6%). Furthermore, 32 respondents (34.4%) had sufficient knowledge, and 27 respondents (29.0%) had insufficient knowledge.

Distribution of Respondents Based on Stress in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 10 Distribution of Respondents Based on Stress at the Limboto Health Center, Gorontalo Regency

No.	Stress	N	%
1.	Height	58	62,4
2.	Low	35	37,6
Total		**93**	**100**

Source: Primary Data, 2025

Based on table 10 above, the distribution of respondents based on stress in pregnant women at the Limboto Health Center, Gorontalo Regency was obtained. Of the total 93 respondents, most pregnant women experienced high stress, namely 58 respondents (62.4%), and a small number had low stress, namely 35 respondents (37.6%).

Bivariate Analysis

The Relationship between Age and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Based on the results illustrated in above, obtained from 25 respondents (26.9%) who were in the risk age category, most of them experienced low stress, namely 14 respondents (15.0%) but there were 11 respondents (11.9%) who experienced high stress. Then of the 68 respondents (73.1%) who were in the non-risk age category, most experienced high stress, namely 47 respondents (50.4%) and the rest experienced low stress, namely 21 respondents (22.7%).

From statistical calculations using the chi square test, a p-value of 0.027 was obtained. Because the p-value is 0.027 ($\alpha<0.05$), H0 is rejected and H1 is accepted. So it can be concluded that there is a significant relationship between age and stress in pregnant women in the Limboto Health Center Working Area.

The Relationship between Family Support and Stress in Pregnant Women in the Work Area of the Limboto Health Center, Gorontalo Regency

Table 11 Relationship between Family Support and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Yes	Age	Stress in Pregnant Women				Total		*P-Value*
		Height		Low				
		n	%	n	%	N	%	
1.	Risky	11	11,9	14	15,0	25	26,9	0,027
2.	No Risk	47	50,4	21	22,7	68	73,1	
Total		**58**	**62,3**	**35**	**37,7**	**93**	**100**	

Based on the results of the statistical test depicted in table 11 above, the results of the correlation test analysis using the Spearman Rank test showed a value (p-value) = 0.000<0.05, which means that there is a significant relationship between family support and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency. The value of the correlation coefficient is -0.471**, which shows that the relationship between the two variables is at a moderate level of relationship with a negative direction (opposite direction). This means that the higher the family support received by pregnant women, the lower the stress experienced.

Parity Relationship with Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 12 The Relationship between Family Support and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

			Mother's Knowledge	Stress
Spearman's rho	Mother's Knowledge	Correlation Coefficient	1,000	-.621**
		Sig. (2-tailed)		,000
		N	93	93
	Stress	Correlation Coefficient	-.621**	1,000
		Sig. (2-tailed)	,000	
		N	93	93

Primary Data Sources, 2025

Based on the results of the statistical test depicted in table 12 above, the results of the correlation test analysis using the Spearman Rank test showed a value (p-value) = 0.000<0.05, which means that there is a significant relationship between parity and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency. The value of the correlation coefficient is 0.404**, which shows that the relationship between the two variables is at a moderate level with a positive (unidirectional) relationship. This means that the higher the parity, the stress experienced tends to increase.

The Relationship between Maternal Knowledge and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Table 13 The Relationship between Family Support and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

			Parity	Stress
Spearman's rho	Parity	Correlation Coefficient	1,000	.404**
		Sig. (2-tailed)		,000
		N	93	93
	Stress	Correlation Coefficient	.404**	1,000
		Sig. (2-tailed)	,000	
		N	93	93

Primary Data Sources, 2025

Based on the results of the statistical test depicted in table 4.13 above, the results of the correlation test analysis using the Spearman Rank test showed a value (p-value) = 0.000<0.05, which means that there is a significant relationship between maternal knowledge and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency. The value of the correlation coefficient is -0.610**, which indicates that the relationship between the two variables is at the level of a strong relationship with a negative direction (opposite direction). This means that the higher the knowledge of pregnant women, the lower the stress experienced.

DISCUSSION

Distribution of Age Frequency, Family Support, Parity, Maternal Knowledge and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Based on the results of a study conducted in the working area of the Limboto Health Center, Gorontalo Regency on 93 pregnant women, a description of respondent characteristics based on age, family support, parity, knowledge, and stress in pregnant women was obtained. These characteristics are important to understand the factors that have the potential to affect the psychological state of pregnant women, in particular stress levels during pregnancy.

The results showed that most of the respondents were in the non-risk age category, namely 20-35 years old (73.1%). This age is a healthy reproductive age that is physically and psychologically considered the safest to have a pregnancy. Then there are (26.9%) respondents in the risk age category. According to Manuaba (2010), pregnancy at the age of <20 years and >35 years has a higher risk both from physical and psychological aspects, including increased anxiety and stress. A parallel study was also conducted by Sari et al. (2021) which stated that pregnant women of at-risk age tend to experience higher stress than pregnant women of non-at-risk age. According to the researchers' assumptions, the majority of respondents who are at a risk of having better physical and mental readiness so that they are able to cope with changes during pregnancy.

Judging from family support, the results of the study showed that most pregnant women received family support in the medium category (57.0%). Then (22.6%) received low family support and (20.4%) received high family support. Family support is an important factor in maintaining the mental health of pregnant women. According to Friedman (2013), family support includes emotional, informational, instrumental, and reward support that can help individuals cope with stress. Research by Putri and Rahmawati (2020) shows that pregnant women with low family support are more at risk of experiencing stress and anxiety during pregnancy. The researchers assume that family support that is not optimal for some respondents can contribute to the high level of stress experienced by pregnant women.

The results of the study related to parity were that most of the respondents were included in the multigravida category (76.3%) and the rest were primigravida respondents (23.7%). Multigravida pregnant women generally have previous pregnancy experiences that can help in dealing with physical and psychological changes during pregnancy. This is in line with research by Wulandari (2019) which states that multigravida mothers tend to be more mentally prepared than primigravida. However, previous pregnancy experiences do not always guarantee low stress levels, especially if the mother has an unpleasant pregnancy experience. According to the researchers' assumptions, although the majority of respondents were multigravida, other factors such as family support and social conditions still played a role in influencing pregnant women's stress.

The results of the research related to IBI knowledge, most pregnant women have knowledge in the good category (36.6%). Then (34.4%) have enough knowledge and (29%) have less knowledge. Good knowledge can help pregnant women understand changes during pregnancy and how to cope with them. According to Notoatmodjo (2018), knowledge is the result of the sensing process and plays an important role in shaping health attitudes and behaviors. Research by Lestari et al. (2022) shows that pregnant women with low knowledge have a higher risk of experiencing stress due to a lack of understanding of pregnancy conditions. According to the researchers' assumptions, pregnant women with good knowledge tend to be better able to manage stress, although external factors can still affect their psychological condition.

The results of the study also showed that most pregnant women experienced high stress (62.4%) and a small percentage experienced low stress (37.6%). High stress in pregnant women can be influenced by various factors, such as hormonal changes, concerns about fetal condition, suboptimal family support, and social and economic conditions. According to Bobak (2012), stress during pregnancy can have a negative impact on the health of the mother and fetus if not handled properly. Research by Dewi et al. (2021) also found that high stress in pregnant women is related to a lack of social support and psychological readiness. According to the researchers' assumptions, the high level of stress in pregnant women in the work area of the Limboto Health Center is influenced by a combination of internal and external factors, so the active role of health workers and families is needed in providing support.

The Relationship between Age and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Based on the results of data analysis using the chi square test, a p-value of 0.027 was obtained, which means that there is a significant relationship between age and stress in pregnant women in the Limboto Health Center Working Area, Gorontalo Regency. These results indicate that age is one of the important factors that contribute to the psychological state of the mother during pregnancy.

The results of this study showed that most of the respondents were at an age that was included in the non-risk age category, namely >20 years to <35 years, but had high stress, namely 47 respondents (50.4%). These findings suggest that medically safe reproductive age is not always directly proportional to the psychological condition of pregnant women. Thus, the age factor is not the only determinant of the mother's mental well-being during pregnancy.

In theory, pregnancy at the age of 20-35 years is the optimal age because the risk of obstetric complications is relatively lower than the age of <20 years or >35 years. Nevertheless, pregnancy remains a complex period of adaptation, both physically, psychologically, and socially. Hormonal changes, new responsibilities, and concerns about the condition of the fetus and the labor process can trigger stress, even if the mother is at a risk-free age.

The results of this study are in line with the research of Sari and Wahyuni (2020) which states that the stress level of pregnant women is not only influenced by biological factors such as age, but also by psychosocial factors, including family support, economic conditions, and mental readiness to face pregnancy. The study found that pregnant women of healthy reproductive age can still experience moderate to high stress if the social support received is not optimal.

One of the psychosocial factors that plays an important role based on the characteristics of the respondents is the living conditions or with whom the pregnant woman lives during pregnancy. This is in line with the opinion of Sulistyawati (2018) who states that the living environment and interpersonal relationships in the family are important factors that can affect the psychological condition of pregnant women.

Based on data on the characteristics of respondents, some pregnant women are not at risk of living only with their husbands. Ideally, this condition can provide a sense of comfort and safety for pregnant women. However, if the husband is less emotionally involved or has a high workload, pregnant women can still experience stress. A lack of attention, communication, and emotional support from husbands can cause mothers to feel alone in dealing with changes during pregnancy. In their research, Putri and Ambarwati (2020) stated that the quality of marital relationships has a significant influence on the stress level of pregnant women. Living with your husband without adequate emotional support can still be a source of stress for pregnant women.

In the results of the study, it was found that some pregnant women of age are not at risk of living with their husbands and extended families, such as parents or in-laws. The condition of living with a large family can have a positive or negative impact on the psychological condition of pregnant women. Although in general, living with family can provide physical assistance and social support, in practice it does not always work optimally.

Living with a large family can trigger stress if there are differences of opinion, lack of privacy, and excessive demands on pregnant women. Pregnant women can feel pressured by family norms or expectations, especially related to how to get pregnant, diet, and preparation for childbirth. This condition can increase the psychological burden of the mother even though the pregnancy is at a non-risky age.

Research by Utami and Rahmawati (2019) stated that pregnant women who live with extended families have a higher risk of stress than pregnant women who live only with their husbands, especially if communication and emotional support in the family are poor.

In addition, research by Fitriani et al., (2021) It shows that anxiety and stress in pregnant women are often caused by fear of childbirth, changes in maternal roles, and lack of information about pregnancy and childbirth. This explains why pregnant women of non-risk age can still experience high stress, especially if it is not balanced with adequate education and assistance during pregnancy.

High stress during pregnancy has the potential to have a negative impact on both mother and fetus. Pratiwi's research (2020) states that unmanaged stress can increase the risk of sleep disorders, fatigue, excessive anxiety, and potentially continue into prenatal depression. In addition, stress can also affect the mother's physiological conditions, such as an increase in the hormone cortisol, which risks impacting the growth and development of the fetus.

The results of the next study showed that pregnant women who were in the risk age group, namely <20 years and >35 years, mostly experienced low stress, namely 14 respondents (15.0%). Theoretically, pregnancy at a risky age is often associated with an increased risk of pregnancy complications as well as psychological disorders. However, the findings in this study suggest that age is at risk of having low stress. This indicates that the psychological condition of pregnant women can be influenced by various other factors outside of age.

Low stress levels in pregnant women of at-risk age can be associated with maternal mental readiness and emotional maturity, especially in the age group of >35 years. At this age, mothers generally have more mature life experiences as well as better psychological readiness to deal with physical and emotional changes during pregnancy. Research by Yulia, Bachri, and Prima (2025) shows that maternal readiness to undergo pregnancy is closely related to more stable mental health conditions. Previous pregnancy experiences also play a role in forming a more adaptive coping mechanism, so that mothers are able to manage stress better. This is in line with a national study by Budiarti et al. (2025) which states that pregnant women with previous pregnancy experience and good mental readiness tend to have lower psychological disorders than pregnant women who are inexperienced. Meanwhile, in pregnant women aged <20 years, low stress can be influenced by strong family support, especially from parents and nuclear families. This support provides a sense of security and comfort for mothers in undergoing pregnancy, so that it can reduce anxiety and psychological stress.

According to the researchers' assumptions, in addition to age factors and environmental support, routine and quality antenatal services also play a role in reducing stress for pregnant women. Regular pregnancy check-ups provide an opportunity for mothers to obtain correct information about pregnancy conditions, submit complaints, and get explanations and reassurances from health workers. In accordance with the research, Rahayu et al. (2019) explained that adaptive coping mechanisms and access to good health services can help pregnant women manage stress effectively. This can increase the mother's confidence and reduce excessive worry during pregnancy. This can boost the mother's confidence and reduce excessive worry during pregnancy.

The findings of this study are in line with the opinion of Sulistyawati (2018) who states that stress during pregnancy is a multifactorial condition influenced by the interaction of biological, psychological, and social factors. Research by Wahyuni and Lestari (2019) also stated that pregnant women of at-risk age who have good mental readiness and environmental support tend to experience lower levels of stress.

Based on the results of the study, it can be concluded that the low stress in pregnant women of at-risk age in this study is inseparable from the role of emotional maturity, family support, good coping mechanisms, and adequate antenatal services. Thus, pregnancy at a risk age does not always have a negative impact on the mother's psychological state, as long as those supporting factors can be met.

The Relationship between Family Support and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Based on the results of the analysis of family support data with stress in pregnant women using the Spearman rank test showing a value (p-value) = 0.000<0.05, it was concluded that there was a significant relationship between family support and stress in pregnant women in the Limboto Health Center Working Area. The value of the correlation coefficient obtained was r = -0.471**, which shows that the relationship between the two variables is at a moderate level of relationship with a negative direction (opposite direction) which means that the higher the family support received by pregnant women, the lower the stress experienced. This indicates that family support has an important role in maintaining the mother's mental health during pregnancy.

These results are in line with the theory of health psychology which states that social support, especially from the family, is a protective factor against stress and anxiety during pregnancy. The support provided by the family, such as emotional support, information, instrumentals, and appreciation, can help the mother feel calmer and able to deal with physical and psychological changes during pregnancy (Friedman, 2010). Thus, family support plays a protective role against stressors that pregnant women may experience.

The findings of this study are consistent with research conducted by Wulandari & Pratiwi (2021) which found that family support was significantly related to stress levels in pregnant women. Mothers who received high support from their families experienced lower stress than mothers who received low family support. Good family support can increase security, confidence, and reduce emotional burden during pregnancy.

Adequate family support can help pregnant women in dealing with various physical and psychological changes that occur during pregnancy. The involvement of the husband in accompanying the pregnancy examination, helping with housework, and providing attention and affection can reduce the mother's anxiety. Conversely, a lack of support can lead to feelings of loneliness, helplessness, and increased risk of stress and even prenatal depression (Anggraini & Dewi, 2022).

Research by Yazia and Suryani (2023) shows that family support has a significant relationship with pregnant women's stress levels, where pregnant women who receive good family support tend to experience lower stress. Family support not only affects stress reduction, but also on the overall well-being of the mother and fetus. Mothers who receive emotional support tend to have better sleep patterns, more stable blood pressure, and lower levels of anxiety. In addition, family support can strengthen the bond between mother and fetus, as well as increase maternal readiness to face the delivery process.

Social support factors also play an important role in the stress level of pregnant women. Research by Rahayu and Lestari (2019) states that pregnant women who lack emotional support from their husbands and families have a higher risk of experiencing severe stress, regardless of the safe gestational age. Low emotional support can worsen the mother's perception of the physical and psychological changes experienced during pregnancy.

According to Sari et al., (2023), the social support provided by the family has a direct effect on the decrease of the stress hormone (cortisol) during pregnancy. This proves that social support not only has a psychological impact, but also a physiological impact. Therefore, the family approach in antenatal services is very important to optimize the health of the mother and fetus.

In the cultural context in Gorontalo Regency, family support usually involves not only the husband, but also the parents and in-laws. In this study, as many as (55.9%) pregnant women lived with their husbands and some others with their parents. Such a family structure allows for closer social interaction, but in some cases it can also be a source of stress in the event of conflicts or differences of opinion related to pregnancy.

Based on the significant correlation results, it can be concluded that family support has a real relationship with stress in pregnant women. Therefore, health workers need to improve family health education programs, emphasizing the importance of the involvement of husbands and other family members in supporting mothers during pregnancy. Programs such as pregnant women classes can be modified to involve couples and families as active participants.

In addition, psychological counseling for pregnant women with low family support needs to be carried out regularly, especially for those facing economic stress or unplanned pregnancies. With adequate emotional support and information, stress can be minimized, so that the pregnancy can proceed more physically and mentally.

Based on the results of this study, it can be assumed that family support has an important influence in reducing stress in pregnant women. The stronger the support provided, the less risk the mother experiences excessive stress.

The Relationship of Parity with Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Based on the results of the analysis of parity data with stress in mothers using the Spearman rank test showing a value (p-value) = 0.000<0.05, it was concluded that there was a significant relationship between parity and stress in pregnant women in the Limboto Health Center Working Area. The value of the correlation coefficient obtained was r = 0.404**, which shows that the relationship between the two variables is at a moderate level of relationship with a positive direction (unidirectional) which means that the higher the parity (the more pregnancy experience the mother has), the stress experienced tends to increase.

Parity is the number of children that have been born alive by a mother. In general, mothers with high parity are expected to have more experience in dealing with pregnancy, so they can manage stress better compared to primigravida mothers (first pregnancy) (Fitriani et al., 2021).

These findings are inversely proportional to the research conducted by Lestari & Nugraha (2020) which found that there was no significant association between parity and stress levels in third trimester pregnant women. Other factors such as social support, economic conditions, and psychological readiness play more role than the amount of pregnancy experience itself. This suggests that pregnancy stress is multidimensional and not only influenced by reproductive experiences.

According to Yulia et al., (2025) Multipara mothers tend to face additional pressures due to responsibilities towards previous children, which can trigger stress and anxiety. On the other hand, primipara are also at risk of experiencing anxiety due to their lack of experience dealing with pregnancy and childbirth. Family support has proven to be an important protective factor. Emotional, instrumental, and informational support provided by families can reduce psychological distress and improve the well-being of pregnant women. These findings are in line with the theory House about social support as well as stress and coping theory from Lazarus & Folkman, which emphasizes the importance of support in coping with stress.

Research by Sartini and Dewi (2022) states that one of the factors that contribute to stress in high-parity pregnant women is the presence of trauma from previous births. A difficult labor experience, intense pain, complications, or fear-inducing events can leave long-term psychological repercussions. This trauma can reappear in the form of anxiety and stress as the mother faces her next pregnancy.

Previous labor experiences, especially those that were negative or traumatic, have a significant relationship with pregnant women's stress levels. Mothers with high parity tend to have more childbirth experience, so the chances of experiencing psychological trauma are also greater (Sartini & Dewi, 2022).

This is in line with research Velga & Suryani, (2022) Trauma during pregnancy is influenced by several factors, such as miscarriage, giving birth to a deformed baby and the experience of childbirth pain can lead to the formation of traumatic emotions, such as mothers worried that something will happen that threatens their life. The occurrence of such fear will excessively inhibit and interfere with the mother's mental immunity. According to the researcher's assumption that there is a relationship between traumatic experiences and stress

in pregnant women in facing childbirth in mothers with high parity. This is because the mother's unpleasant experience in the past is related to psychological aspects that cause the mother to experience stress.

According to Wati et al., (2022), repeated pregnancy experiences can provide confidence, but they can also cause emotional and physical exhaustion, especially when the distance between pregnancies is too close or if the family's economic conditions are unstable. Thus, high parity is not always synonymous with low stress, depending on the social context and support available.

Research conducted by Nurhayati and Wahyuni (2022) states that multi-term pregnant women have the potential to experience stress due to the increased burden of roles and responsibilities in the family, especially in caring for children beforehand. These physical and psychological burdens can trigger stress if not balanced with adequate family support.

On the other hand, research by Rahmawati, Lestari, and Pratiwi (2023) found that primigravida pregnant women tend to experience higher anxiety and stress due to their lack of experience in dealing with pregnancy and childbirth. Ignorance and concern about the labor process and changes during pregnancy are stress-triggering factors in primigravida pregnant women.

According to the researchers' assumption, high stress in pregnant women is also related to physical complaints that often arise during pregnancy, such as morning sickness and cravings. In mothers with high parity, this condition is often felt more severe because mothers are still required to carry out daily activities and take care of their children. This is in line with research by Wulandari and Handayani (2019) stating that complaints of nausea and vomiting during pregnancy have a relationship with increased stress and fatigue in pregnant women.

In addition, research by Astuti et al. (2020) showed that pregnant women who experienced morning sickness with moderate to severe intensity tended to have higher levels of stress than pregnant women who did not experience these complaints. Uncomfortable physical conditions can affect mood, decrease sleep quality, and reduce the mother's ability to manage stress, especially in mothers with high parity who have a greater burden of responsibility.

In the context of the Gorontalo community, the social value of pregnancy and the number of children is still quite strong. Some expectant mothers may experience social pressure to have more children, while others feel anxious due to increased parenting responsibilities. Cultural factors like these can reinforce the link between parity and stress. This cultural value is influenced by the strong family ties, customary values, and religious teachings embraced by the Gorontalo people. According to the researchers' assumptions, the culture of the Gorontalo society which views many children as positive values contributes to the high multigravity parity, which can increase the risk of stress in pregnant women.

The Relationship between Maternal Knowledge and Stress in Pregnant Women in the Working Area of the Limboto Health Center, Gorontalo Regency

Based on the results of the analysis of parity data with stress in mothers using the Spearman rank test showing a value (p-value) = 0.000<0.05, it was concluded that there was a significant relationship between maternal knowledge and stress in pregnant women in the Limboto Health Center Working Area. The value of the correlation coefficient obtained was r = -0.610**, which shows that the relationship between the two variables is at a level of strong relationship with the negative direction (opposite direction) which means that the higher the knowledge of pregnant women, the lower the stress experienced.

Based on the results of the frequency distribution, the majority of respondents had good knowledge (36.6%), this finding shows that most pregnant women have an adequate understanding of pregnancy and personal health.

The results of this study are compared to the research conducted by Handayani et al., (2021) who found that pregnant women's high knowledge of childbirth risks can actually increase concern, especially in primigravida mothers. Knowledge that is not accompanied by coping skills (self-adjustment strategies) can cause stress due to anxiety about uncertainties. Pregnant women with a high level of knowledge tend to have greater awareness of the risks and complications of pregnancy.

According to Sahrain et al., (2025) The level of education of the mother has a great influence on the physical and mental health of the mother. In line with the statement made by Rangkuti & Harahap (2020) in their research that if a pregnant woman has more knowledge about the high risk of pregnancy, then it is likely that the mother will consider preventing, avoiding, or overcoming problems regarding some of the risks of pregnancy.

Yuliana and Hartati (2022) in their research also emphasized that high knowledge without the support of a good coping mechanism can increase stress because mothers become too focused on the risks that may occur. This confirms that knowledge must be balanced with stress management skills so as not to have the opposite effect.

Most pregnant women obtain pregnancy information through health workers, social media, and personal experiences. These diverse sources of information can lead to different perceptions of pregnancy

risks. If the information obtained is scary or not properly filtered, then mothers with extensive knowledge may experience lower stress (Rahmadani et al., 2023).

In an effort to reduce stress in pregnant women, education-based intervention strategies can be combined with a pregnant women's classroom program that emphasizes proportional risk understanding and relaxation techniques. Thus, the knowledge that mothers have can be a tool to strengthen mental readiness, not to cause anxiety.

The results of this study can be assumed that pregnant women's knowledge when managed properly can be a weapon in preventing stress that can be experienced by pregnant women. Therefore, increasing the knowledge of pregnant women must be carried out gradually, directed, and accompanied by psychological strengthening through counseling and continuous education.

CONCLUSION

The results of this study were from 93 respondents, most of the pregnant women did not work as many as 70 respondents (75.3%), while 23 respondents (24.7%) worked. Furthermore, based on education level, most pregnant women have a high school education of 30 respondents (32.3%), followed by university education as many as 27 respondents (29.0%), junior high school as many as 24 respondents (25.8%), elementary school as many as 11 respondents (11.8%), and a small number of respondents do not attend school as many as 1 respondent (1.1%). Then most pregnant women live with their husbands, which is as many as 52 respondents (55.9%). Other pregnant women live with their husbands and parents, namely 24 respondents (25.8%). Others lived with various family members, including with their husbands and in-laws as many as 5 respondents (5.4%), husbands, parents, and siblings as many as 4 respondents (4.3%), and with their parents or with their husbands and siblings as many as 2 respondents each (2.2%). Meanwhile, a small number of other respondents lived with brothers-in-law, husbands and aunts, husbands, in-laws and brothers-in-law, as well as parents and siblings, as many as 1 respondent each (1.1%). Furthermore, most pregnant women carried out pregnancy checks accompanied by their husbands, namely 54 respondents (58.1%). A small number were accompanied by 2 respondents (2.2%), then pregnant women conducted pregnancy examinations independently, namely 12 respondents (12.9%). Others were accompanied by parents and siblings as many as 11 respondents (11.8%), accompanied by in-laws as many as 3 respondents (3.2%). Then it was found that pregnant women who were not at risk (≥20 to ≤35 years) were 68 respondents (73.1%), while the rest were pregnant women who had a risk age (<20 years or >35 years), which was 25 respondents (26.9%). In addition, pregnant women who had moderate support were 53 respondents (57.0%), pregnant women who had low support were 21 respondents (22.6%), while the rest were pregnant women who had high family support, namely 19 respondents (20.4%). Furthermore, 71 respondents (76.3%) were multigravida pregnant women, while primigravida pregnant women were 22 respondents (23.7%). In addition, 34 respondents (36.6%) were pregnant women who had good knowledge, then 32 respondents (34.4%) were pregnant women who had sufficient knowledge, while the rest were pregnant women who had less knowledge as many as 27 respondents (29%).

The relationship between age and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency, obtained a chi square test value which showed a value (p-value) = 0.027 < 0.05. This shows that there is a significant relationship between age and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency.

The relationship between family support and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency, was obtained by the Spearman Rank statistical test which showed a value (p-value) = 0.000 < 0.05. This shows that there is a significant relationship between family support and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency.

The relationship between parity and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency, was obtained by the Spearman Rank statistical test value which showed a value (p-value) = 0.000 < 0.05. This shows that there is a significant relationship between parity and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency.

The relationship between maternal knowledge and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency, was obtained by the Spearman Rank statistical test which showed a value (p-value) = 0.000 < 0.05. This shows that there is a significant relationship between maternal knowledge and stress in pregnant women in the working area of the Limboto Health Center, Gorontalo Regency.

ADVICE

This research is expected to help the Limboto Health Center to find out the factors related to stress in pregnant women and can pay more attention to the psychological condition of pregnant women.

It is hoped that this research can be used as a form of stress prevention that can be experienced by pregnant women by providing support and knowledge to pregnant women so that it can prevent adverse effects that may occur on mothers and babies.

It is hoped that this research can add information and insight and become a reference for further research, especially factors related to pregnant women's stress, namely maternal knowledge, so it needs to be continued in the form of interventions to improve maternal knowledge in order to reduce stress, interventions that can be carried out in the form of education and stimulation.

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