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Factors associated with pregnancy-related anxiety among pregnant women attending antenatal care at public health institutions in Dessie Town, Northeast Ethiopia, 2023: an institution-based cross-sectional study

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ABSTRACT

Introduction Pregnancy is intended to be a time of emotional well-being; however, for many women, it becomes a period filled with disbelief, worry, sadness, anxiety, stress and even depression. Mental health, despite being a crucial aspect of reproductive health, is often neglected. Anxiety during pregnancy has been associated with depression and various negative pregnancy outcomes.

Objective This study aims to assess the magnitude of pregnancy-related anxiety (PRA) and its associated factors among pregnant women attending antenatal care (ANC) at public health institutions in Dessie town, Northeast Ethiopia.

Participant The study involved 367 pregnant women who were attending their ANC visits.

Study design and setting An institution-based cross-sectional study was carried out in Dessie town, Northeast Ethiopia, from 1 May to 30 July 2023. A systematic random sampling technique was employed. A standardised, pretested and interviewer-administered questionnaire was used to collect data. The data were entered into EpiData V.4.6 and exported to the Statistical Package for the Social Science V.25. Both bivariable and multivariable logistic regression analyses were conducted to identify variables significantly associated with PRA. The adjusted OR (AOR) with its 95% CI at a p value of ≤0.05 was used to determine statistical association.

Result A total of 367 pregnant women participated. The mean age of the participants was 29.5 (±5.5) years. The overall magnitude of PRA was 39.5% (95% CI (34.5, 44.7)). Being unmarried (adjusted odds ratio (AOR): 2.648, 95% CI (1.429, 4.908)), living in an urban residence (AOR: 2.1, 95% CI (1.205, 3.661)), experiencing unplanned and unwanted pregnancy (AOR: 2.794, 95% CI (1.229, 6.351)), having poor social support (AOR: 3.434, 95% CI (1.709, 6.899)) and having a history of infertility (AOR: 3.325, 95% CI (1.498, 7.379)) were significantly associated with PRA.

Conclusions The results of this study revealed a high level of PRA in the study area, highlighting the importance for healthcare providers to address this issue and offer screening and counselling during routine ANC visits. This is especially crucial for unmarried women, for those living in urban areas, as well as those with limited social support and a history of infertility. It is essential to take proactive steps to enhance social support networks, and partners and families should be educated on how to provide emotional and social support. Strengthening family planning services and psychological support is also vital in empowering women to prevent unplanned and undesired pregnancies that can contribute to their anxiety levels.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The study used established and validated instruments like the Pregnancy-Related Anxiety (PRA) Questionnaire-Revised, the Patient Health Questionnaire-9 and the Oslo Social Support Scale-3, enhancing the reliability and validity of the data.
⇒ The study was conducted by well-trained data collectors and supervisors.
⇒ The study relied on self-reported data, which may be subject to recall bias, social desirability bias or other forms of measurement error.
⇒ The cross-sectional nature of the study prevents establishing causal relationships between factors and PRA.

INTRODUCTION

Pregnancy is not only a time of immense joy for a woman but also a period of significant physical and mental stress. Even in healthy women, pregnancy can induce considerable anxiety due to the inherent uncertainties.[1] Pregnancy-related anxiety (PRA) is characterised by anxiety linked to pregnancy, including labour and delivery.[2] It encompasses worries

or distress specific to pregnancy, such as concerns about the health of the developing child, changes in appearance, labour and birth, as well as future parenting challenges.[3] In contrast, generalised anxiety disorder manifests as uncontrollable worries stemming from issues unrelated to pregnancy, such as personal health, the well-being of loved ones, job-related matters and financial concerns.[4] Anxiety, depression and stress during pregnancy are risk factors for adverse outcomes for both mothers and children. These negative outcomes highlight the importance of adequately assessing PRA to identify women who experience particularly high levels of anxiety during pregnancy.[5]

Globally, 11.4%[6] to 63%[7] of women experience anxiety during pregnancy. In Africa, its prevalence ranges from 11.4%[6] to 44.9%[8]; in Ethiopia, it varies from 32.7% to 43.9%.[9 10] Overall, 1 in 12 children and youth in Ethiopia have general anxiety.[11]

PRA is a significant public health concern and negatively impacts maternal, fetal, neonatal and child health during the antenatal and postpartum periods; thus, it is a strong predictor of adverse birth outcomes, neuroendocrine changes during pregnancy and postnatal anxiety and depression.[12–14]

Women who experience depressive and anxious symptoms throughout their third trimester are more likely to have oligohydramnios, intrauterine growth restriction, diminished placental perfusion and preterm labour.[14] Pregnancy anxiety is a key predictor of various adverse labour outcomes, such as prolonged labour, preterm labour, low birth weight, unplanned caesarean section[13] and preterm birth,[15] and it also increases the rate of instrumental delivery.[16]

Additionally, the presence of anxiety during the antenatal period negatively impacts the postpartum period and child development. It significantly contributes to activity limitations and participation restrictions, including mobility, self-care, daily activities and societal engagement.[6] It affects maternal-fetal bonding and leads to inadequate maternal nursing care,[17] including a reduced likelihood of breastfeeding and lower adherence to immunisation schedules, which in turn results in child growth restrictions, severe malnutrition, diarrhoea and long-term effects on a child's emotional, cognitive and behavioural development.[17 18]

Although PRA is the most prevalent mental health problem, it remains a neglected concern, particularly in developing countries. Its disabling effects extend beyond mothers, impacting their offspring and families.[19]

Because prevention is the best medicine, understanding the prevalence and associated variables of PRA is essential for preventing the short- and long-term effects of PRA on the health of mothers and children. Although limited studies have been conducted in Ethiopia, to the best of researchers' knowledge, no studies have focused on PRA in the study area. Additionally, PRA can vary significantly across different countries due to various factors such as cultural attitudes, healthcare access, quality of care, social support systems and economic conditions. Consequently, this institution-based cross-sectional study aims to evaluate the magnitude of PRA and its associated factors among women accessing antenatal care (ANC) in public healthcare facilities in Dessie town, Northeast Ethiopia.

The research question for this study was: what is the magnitude of PRA among pregnant women attending ANC at public health institutions in Dessie town, Northeast Ethiopia, and what factors are associated with it?

METHODS

Study setting

This research was carried out at public health institutions, Dessie town, Northeast Ethiopia. Dessie is a town in north-central Ethiopia, located in the South Wollo Zone of the Amhara regional state. It is 401 km far from Addis Ababa (the capital city of Ethiopia) and 480 km from Bahir Dar (the capital city of the Amhara Regional State). Based on the 2007 national census conducted by the Central Statistical Agency of Ethiopia, Dessie had a total population of 151 174, of whom 72 932 were men and 78 242 were women; 120 095 people, or 79.44%, were urban inhabitants, while the rest of the population, 31 079, were in the rural kebeles around Dessie. Regarding governmental healthcare facilities, Dessie town has one comprehensive specialised hospital, one primary hospital and six health centres. All these public health institutions were included in this study.

Study design and period

From 1 May to 30 July 2023, an institution-based cross-sectional study was undertaken.

Participants

The source population included pregnant women who attended ANC at public health institutions in Dessie town, while the study population consisted of pregnant women who attended ANC at public health institutions in Dessie town during the data collection period.

Inclusion and exclusion criteria

During the data collection period, all pregnant women attending ANC at public health institutions in Dessie town were included in the study. Women who were seriously ill (could not respond to the interview), as well as pregnant women under the age of 18 years, were excluded from the study since participation in the study requires family agreement.

Sample size and sampling technique

The sample size was determined using a single population proportion formula with the following assumptions: a 43.9% proportion of PRA conducted in Debre Markos Town, northwest Ethiopia,[10] a 95% CI and a 5% margin of error.

$$n = \frac{(Z\frac{\alpha}{2})^2 \times p(1-p)}{d^2} = \frac{(1.96)^2 \times 0.439(1-0.439)}{(0.05)^2} = 378$$

where n=required sample size, α=level of significance, z=standard normal distribution curve value for 95% CI (1.96), p=proportion of PRA and d=margin of error. Finally, by adding a 5% non-response rate, the minimum adequate sample size was 396.

Sampling technique

In this study, all eight public health institutions (six health centres and two hospitals) were involved, and by using the average monthly case flow of ANC from all public health facilities, a proportional allocation of the total sample size was calculated to determine the required sample size from all public health facilities. Finally, the determined samples were selected by a systematic sampling technique. The skip interval (K) for each institution was determined by dividing the estimated average number of women who received antenatal follow-up at each public health facility during the study period by the proportionally allocated sample size of each institution, which was K=2.5 (approximately 3) for all health institutions. The first case was selected randomly using a lottery method. Then, every third unit was taken to obtain the required sample size from each health facility.

Variables

The dependent variable of this study is PRA, whereas the independent variables are categorised under sociodemographic factors, including age, occupational status, educational level, marital status, religion, residence, family size and husband's education and occupation. Among the obstetrical and gynaecological factors, gravidity, gestational age, number of ANC visits, current pregnancy status, previous pregnancy complications, history of episiotomy and history of caesarean delivery were included, and depression, social support, history of mental problems, family history of mental problems and intimate partner violence were investigated. Medical illness, smoking status and alcohol use were also included.

Operational definitions

Pregnancy-related anxiety

Based on the research of Abegaz *et al* and Wall *et al*, pregnant women who scored ≥13 out of a total of 30 points on the PRA Questionnaire-Revised (PRAQ-R) were considered to have PRA.[2 10]

Depression

Pregnant women who received a score of 5 or higher on the Patient Health Questionnaire-9 were considered to have depression.[20]

Intimate partner violence

Pregnant women were considered to have screened positive if they answered 'yes' to any one of the types of sexual, psychological, physical or any combination of these three coercive acts used against adult and adolescent women, regardless of the legal status of the relationship with the current intimate partner.[21]

Social support

The Oslo Social Support Scale-3 score ranges from 3 to 14, with scores ranging from 3 to 8 indicating poor support, scores ranging from 9 to 11 indicating moderate support and scores ranging from 12 to 14 indicating strong support.[22]

Data collection tools and procedures

A structured, pretested and interviewer-administered questionnaire tool was used to collect the data. The questionnaire was prepared by reviewing different literature[10 20 21] and contextualising it to the local situation. Sociodemographic factors, obstetrical and gynaecological factors, medical and behavioural factors, psychosocial factors and the PRAQ-R were included in the questionnaire tool.

We used the PRAQ-R to determine the outcome variable. The rationale for using PRAQ-R is that it is straightforward to understand, and it can effectively estimate the prevalence of PRA because it covers various anxiety domains related to pregnancy, including fears about childbirth, worries about fetal health and changes in personal physical appearance. It consists of 10 items. Each item was scored on a 4-point Likert scale from 0 to 3, with an overall score of 30 points. Four data collectors with a BSc in Midwifery and two supervisors with an MSc in Clinical Midwifery collected the data.

Data quality assurance

The questionnaire was initially written in English, then translated into Amharic (the local language) by a professional translator and then back into English to ensure consistency. The tool's grammar, order, appropriateness and efficiency were tested on 5% of pregnancies by the supervisors to ensure completeness, in women who had ANC outside the study setting (at Kombolcha Hospital). The principal investigator trained the data collectors and supervisors for 1 day on how to gather and store data as well as the overall goal of the research. The questionnaire was reviewed for completeness daily by the supervisors during the actual data collection period.

Data processing and analysis

The data were carefully reviewed for correctness before being entered into EpiData V.4.6 and exported to the Statistical Package for the Social Sciences V.25. Data coding and recording were completed. The data were examined for mistakes, outliers, missing observations and inconsistencies. Before bivariable analysis, the results of the univariable analysis (descriptive results) are presented as frequencies and percentages. The χ^2 test results were confirmed. The Hosmer-Lemeshow test was used to assess the model's fitness. The presence of multicollinearity among variables associated with the PRA was investigated. Variables with p values <0.2 in the bivariable analysis were included in the multivariable regression analysis. The adjusted OR (AOR) with its 95% CI and a p value of 0.05 indicates a significant association in the multivariable

Table 1 Sociodemographic characteristics of pregnant women attending ANC at public health institutions in Dessie town, Northeast Ethiopia, 2023 (n=367)

Variables	Category	Frequency (n)	Per cent (%)
Age	18–25	99	27
	26–35	219	59.6
	>35	49	13.4
Educational status	No formal education	159	43.3
	Primary (1–8)	92	25.1
	Secondary (9–12)	58	15.8
	College and above	58	15.8
Residence	Urban	272	74.1
	Rural	95	25.9
Husband education, n=260	No formal education	92	35.4
	Primary school	40	30.8
	Secondary school	80	15.4
	College and above	48	18.4
Family size	≤4	286	77.9
	>4	81	22.1

ANC, antenatal care.

logistic regression model. Text, tables and charts were used to present the analysed data.

Patient and public involvement

Patients and the public were not involved in the design, conduct or the dissemination of the study's findings.

RESULTS

Sociodemographic characteristics of the study participants

About 367 pregnant women participated, yielding a 95% response rate. All participants were aged between 18 and 35 years. The average age of participants was 29.5 (±5.5) years. Regarding educational status, the majority had no formal education, while only 58 participants (15.8%) had attained a college education or higher. Approximately 260 participants (70.8%) were married, and 149 (40.6%) were housewives. Concerning spouse education, one-fourth (25.1%) had completed primary school, and around 140 individuals (38.1%) were employed in either governmental or private sectors. More than half of the participants (286, 77.9%) had a family size of four or fewer (table 1).

Participants' obstetrical and gynaecological features

The majority of pregnant women (261, 71.1%) were multigravida, and most participants (175, 47.7%) were in the second trimester. On the other hand, the majority of respondents' current pregnancy status (226, 61.6%) was planned and wanted, while approximately 44 (12%) reported their current pregnancy status as unplanned and unwanted. More than half of the participants (220, 59.9%) had fewer than four ANC visits, whereas the remaining (147, 41.1%) had more than four visits. Among those multigravida women, approximately 93 (35.6%) had experienced previous pregnancy complications, with abortion being the most frequently mentioned, followed by pregnancy-induced hypertension and stillbirth. Among these pregnant women, approximately 108 (41.4%) and 66 (25.3%) had a history of episiotomy and caesarean section, respectively. Among the respondents, approximately 42 (11.4%) had suffered from infertility (table 2).

Table 2 Obstetrics and gynaecological characteristics of pregnant women who underwent ANC at the public health institutions in Dessie town, Northeast Ethiopia, 2023 (n=367)

Variables	Category	Frequency (n)	Per cent (%)
Gestational age	First trimester	42	11.4
	Second trimester	175	47.7
	Third trimester	150	40.9
Gravidity	Primigravida	106	28.9
	Multigravida	261	71.1
Status of pregnancy	Planned and wanted	226	61.6
	Unplanned but wanted	97	26.4
	Unplanned and unwanted	44	12
Number of ANC	<4	220	59.9
	≥4	147	40.1
History of pregnancy complication, n=261	Yes	93	35.6
	No	274	64.4
Type of complication, n=93	Abortion	51	54.8
	PIH	30	32.2
	Stillbirth	12	13.0
History of episiotomy, n=261	Yes	108	41.4
	No	153	58.6
History of caesarean section, n=261	Yes	66	25.3
	No	195	74.7
History of infertility	Yes	42	11.4
	No	325	88.6

ANC, antenatal care; PIH, pregnancy-induced hypertension.

Medical and behavioural factors

Of the total study participants, 120 (32.7%) had a history of medical illness. Among them, 58 (48.3%) had hypertension, approximately 40 (33.4%) had diabetes and the remaining 7 (5.8%) had a confirmed case of upper respiratory tract infection. Regarding HIV status, 15 (12.5%) patients were reactive and on antiretroviral drugs. In terms of behavioural characteristics, 29 (7.9%) consumed

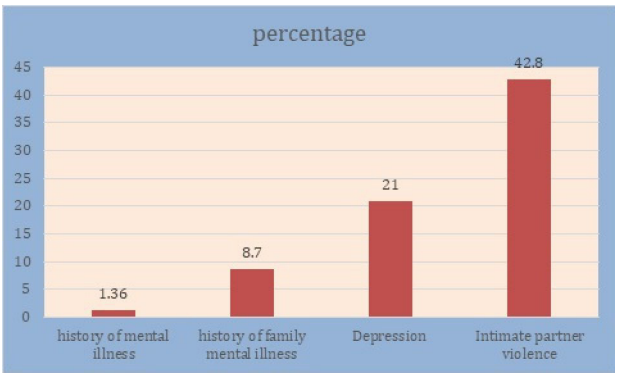

Figure 1 Psychosocial factors of pregnant women attending antenatal care at public health institutions in Dessie town, Northeast Ethiopia, 2023, (n=367)

alcohol, with the majority (20, 68.9%) drinking once a month. Among all respondents, only three participants smoked cigarettes.

Psychosocial factors

Concerning social support, more than half of the participants (202, 55%) had inadequate social support, approximately 84 (22.9%) had high social support and the remaining (81, 22.1%) had moderate social support. Regarding depression, 77 (21%) of the participants were depressed, while 157 (42.8%) were victims of intimate partner violence (figure 1).

The magnitude of PRA

The PRAQ-R was used to assess the level of PRA in this study. Pregnant women who scored 13 out of a total score of 30 were identified as having PRA. A total of 145 responses scored 13 or higher, resulting in an overall magnitude of PRA of 39.5% (95% CI (34.5, 44.7)).

Factors associated with PRA

Bivariable and multivariable logistic regression analyses were conducted, with variables having a p value ≤0.2 in the bivariable logistic regression considered for multivariable logistic regression analysis. The variables meeting these criteria included residence, marital status, intimate partner violence, depression, current pregnancy status, history of caesarean birth, number of pregnancies, history of infertility and family history of mental illness.

At a p value of ≤0.05, the factors associated with PRA in the multivariable logistic regression model were marital status, place of residence, current pregnancy status, infertility history and social support (table 3).

Respondents living in urban areas were 2.1 times more likely to experience PRA compared with those in rural regions (AOR: 2.1, 95% CI (1.205, 3.661)). Similarly, single individuals were 2.6 times more likely to feel anxious during pregnancy than their married counterparts (AOR: 2.648, 95% CI (1.429, 4.908)). Furthermore, participants whose current pregnancy was unplanned or unwanted were 2.7 times more likely to experience PRA than those whose pregnancies were planned or desired (AOR: 2.794, 95% CI (1.229, 6.351)). Additionally, individuals with weak social support were 3.4 times more likely to become anxious during pregnancy than those with strong social support (AOR: 3.434, 95% CI (1.709, 6.899)). Finally, respondents who were infertile were 3.3 times more likely than their counterparts to experience PRA (AOR: 3.325, 95% CI (1.498, 7.379)).

DISCUSSION

According to this study, the overall magnitude of PRA was 39.5% (95% CI: 34.5, 44.7), as determined by the PRAQ-R. This finding aligns with a study conducted in Debre Markos town (43.9%)[10] and Parakou, Benin (44%).[8] Conversely, this finding was higher in Singapore (29.5%),[23] China (15.04%),[24] Hungary (14.2%),[25] the Eastern province of Saudi Arabia (23.6%),[26] Austria (19.5%),[27] Mettu (32.7%),[9] Tanzania (25%)[2] and Qatar (26.5%),[28] as well as during the second (16.8%) and third (17.2%) trimesters.[29]

This variation may be attributed to the use of different tools for measuring PRA, such as the State-Trait Anxiety Scale, in contrast to the revised PRA questionnaire.[26] Additionally, variations in sociodemographic characteristics such as educational status[24] and place of residence might be contributing factors. In contrast, most participants in this study were urban residents with no formal education, and being illiterate while living in urban areas increased the likelihood of experiencing anxiety.[30]

Another possible reason for this difference could be the variation in participants' duration of pregnancy.[2 24] Satisfaction with marital status and the level of social support might also contribute to the discrepancy observed in a study conducted at Mettu Karl Comprehensive Hospital.[9]

However, this percentage was lower than that reported in studies from Pakistan (49%),[31] Nepal (46.4%)[32] and China (59.07%)[30]. One possible explanation for this variation is the participants' occupation; over 88% of respondents in the Pakistan study[31] were housewives, and being a housewife or unemployed increased the likelihood of experiencing anxiety.[24] Compared with the study conducted in Pakistan, the sample size in this study was smaller (500 vs 367), suggesting that the variation in sample size could significantly influence the observed magnitude of the disease.

Variations in certain obstetrical factors, such as primigravida, and medical conditions, like diabetes mellitus, may account for the discrepancies observed in studies conducted in Nepal and China. Several studies have indicated that individuals who are primiparous with confirmed medical conditions are more likely to have PRA.[24] The method of administering the questionnaire could also contribute to the variation. A self-administered questionnaire was used in a study conducted in China, whereas this study employed an interviewer-administered questionnaire. Since administering questionnaires through interviews may introduce social desirability bias, it could lead to lower reported anxiety levels.

Table 3 Factors associated with PRA among pregnant women attending ANC at the public health institutions in Dessie town, Northeast Ethiopia, 2023

Variables	Categories	PRA		COR 95% CI	AOR 95% CI	P value
		Yes	No			
Educational status	No formal education	63	96	4.102 (1.822, 9.231)	0.877 (0.169, 4.560)	
	Primary (1–8)	52	40	8.125 (3.464, 9.059)	3.357 (0.856, 6.179)	
	Secondary (9–12)	22	36	3.819 (1.5529, 9.542)	2.467 (0.450, 8.530)	
	College and above	8	50	1	1	
Residence	Urban	113	159	1.399 (0.858, 2.282)	2.1 (1.205, 3.661)	0.009
	Rural	32	63	1	1	
Marital status	Married	115	145	1	1	0.002
	Single	30	77	2.036 (1.250, 2.648)	2.648 (1.429, 4.908)	
Number of pregnancies	Primigravida	43	63	1.064 (0.671, 1.686)	1.202 (0.686, 2.107)	
	Multigravida	102	159	1	1	
Status of current pregnancy	Planned and wanted	98	128	1	1	
	Unplanned and unwanted	20	77	0.339 (0.194, 0.593)	0.347 (0.180, 0.667)	0.02
	Unplanned but wanted	27	17	2.074 (1.071, 4.019)	2.794 (1.229, 6.351)	0.014
Ever been infertile	Yes	23	19	2.014 (1.054, 3.850)	3.325 (1.498, 7.379)	0.003
	No	122	203	1	1	
Ever had a caesarean birth	Yes	25	41	0.934 (0.526, 1.659)	1.595 (0.862, 2.950)	
	No	77	118	1	1	
Medical illness reported by physician	Yes	59	61	1.811 (1.162, 2.821)	1.389 (0.77, 2.480)	
	No	86	161	1	1	
Depression	Yes	30	47	0.971 (0.580, 1.626)	0.969 (0.532, 1.768)	
	No	115	175	1	1	
Intimate partner violence	Yes	7	86	1.517 (0.994, 2.316)	1.041 (0.585, 1.855)	
	No	74	136	1	1	

ANC, antenatal care; AOR, adjusted OR; COR, crude odd ratio; PRA, pregnancy-related anxiety.

This study revealed that being unmarried was a predisposing factor for PRA. This finding aligns with the study conducted in the Arba Minch Zuria district of southern Ethiopia.[7] One possible explanation is that unmarried pregnant women may experience lower emotional well-being and heightened levels of stress and depression, making them more susceptible to anxiety.[24]

The odds of facing PRA were nearly twice as high among urban residents compared with their rural counterparts. This finding is supported by a study conducted in China.[33] One explanation for this strong correlation could be that urban areas are densely populated and potentially exposed to stress. These elevated stress levels may contribute to or exacerbate anxiety during pregnancy. Furthermore, constant noise, traffic and crowded environments can overwhelm expectant mothers, who may be more sensitive to external stimuli. Despite having better access to medical facilities, mothers in urban areas may encounter an overwhelming amount of contradictory information, leading to confusion and heightened anxiety.[34]

According to this study, participants who had experienced infertility were more likely to be anxious than those who had not. This finding is similar to results from research undertaken in Pakistan.[35] Infertility can be a challenging journey, often marked by multiple unsuccessful attempts to conceive. This can intensify maternal desire regarding the pregnancy, resulting in increased anxiety.[35]

The study also indicated that both unplanned and unwanted pregnancies were significantly linked to PRA. This finding was supported by research conducted in Saudi Arabia and at Mettu Karl Comprehensive Hospital in Southwest Ethiopia.[7 9] Unplanned and unwanted pregnancies can lead individuals to face heightened anxiety as they navigate critical decision-making processes. These individuals must carefully weigh their options, such as continuing the pregnancy, adoption or abortion, which can generate significant stress and distress.[24]

In summary, low social support was a significant predictor of PRA. This finding was consistent with studies conducted in Southwest Ethiopia,[9] South Africa,[36] Qatar[30]

and Bangladesh.[32] Exploring the potential reasoning behind this phenomenon, it can be argued that pregnancy elicits intense emotions, ranging from elation to apprehension and uncertainty. A strong network of social support, whether from close friends, family or a loving partner, can bring peace and happiness. Conversely, in the absence of such support, individuals may feel isolated and overwhelmed by their emotions, leading to elevated levels of anxiety.[37]

The methodological limitations of this study include its cross-sectional design, which captures PRA at a single point in time and does not account for changes over time. Ethical considerations related to the topic may also impact the findings, as discussing anxiety can cause discomfort or distress, affecting participants' willingness to provide honest responses. Additionally, since the study is institution-based, the findings may not represent the broader population. Another methodological limitation is the small sample size, which may restrict statistical power and the ability to detect significant associations.

Conclusions and recommendations

The results of this study revealed a high level of PRA in the study area, with significant associations identified among unmarried individuals, those living in urban settings, those experiencing unplanned and unwanted pregnancies, those lacking strong social support and those with a history of infertility. These findings highlight the importance of addressing these factors in managing PRA.

This study highlights the importance of healthcare providers addressing PRA and offering screening and counselling during routine ANC visits. This is particularly crucial for unmarried women, those living in urban areas, as well as those with limited social support and a history of infertility. Proactive measures should be taken to enhance social support networks for pregnant women by promoting community awareness and facilitating support groups. Additionally, partners and families should be educated on how to provide emotional and social support. Strengthening family planning services and psychological support is vital in empowering women to prevent unplanned and undesired pregnancies that can exacerbate their anxiety levels.

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Patient consent for publication Consent obtained directly from patient(s).

Ethics approval The ethical review committee of the College of Medicine and Health Science acquired ethical clearance on behalf of Wollo University's Institutional Review Board. The Dessie Municipal Health Office provided an official permission letter. After receiving a comprehensive description of the study's purpose, risks and benefits, each participant provided informed consent. Anonymity of patient information was implemented to ensure participant confidentiality and privacy by omitting personal identifiers and employing coding and data lock. The respondents who were apprehensive received appropriate counselling and care from midwives working in the antenatal care room during data collection.

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