



Association between social support and perceived stress among pregnant women: a cross-sectional investigation

Narayanan Namboothiri G ¹, Athif Mohammed Rafeeq ², Aysha Liyana A P ³, Ayisha S Rassak ⁴, Asitha A ⁵, Askar A

ABSTRACT

Introduction: Pregnancy constitutes a period of increased emotional and psychological demands, during which women may experience varying levels of stress that can affect maternal and fetal outcomes. Social support plays an important role in enhancing coping and promoting maternal well-being; however, evidence from local healthcare settings remains limited. This study aimed to examine the relationship between perceived social support (PSS) and perceived stress (PS) among pregnant women in Malappuram district, Kerala.

Methodology: A hospital-based cross-sectional study was conducted among 200 pregnant women attending antenatal clinics between March and June 2025. Data were collected using a structured questionnaire incorporating MSPSS and PSS scales and analysed using SPSS version 26. Associations were assessed using chi-square test and binary logistic regression, with $p < 0.05$ considered statistically significant.

Results: Of the participants, 48% reported moderate perceived social support, while 62% had moderate stress levels. A statistically significant association was observed between perceived social support and perceived stress ($\chi^2 = 24.52$, $p < 0.001$). Higher PSS was significantly associated with occasional social interactions (OR = 3.12; 95% CI: 1.29–7.52) and presence of a caregiver (OR = 2.54; 95% CI: 1.21–5.32). Higher PS was significantly associated with support from family members (OR = 2.41; 95% CI: 1.10–5.25) and friends/others (OR = 2.86; 95% CI: 1.02–8.01), as well as rare social interactions (OR = 3.85; 95% CI: 1.45–10.19).

Conclusion: PSS was significantly associated with PS among pregnant women. Incorporating routine psychosocial assessment and strengthening partner and family support within antenatal care services may help reduce stress and improve maternal well-being.

Keywords: Pregnancy, Perceived social support, Perceived stress, Maternal mental health, Antenatal care, Social support, Psychosocial factors, Maternal well-being

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1*Corresponding: Narayanan Namboothiri G Associate professor, Doctor, Department of Community Medicine, MES Medical College, Perinthalmanna, Kerala, India, E-mail: narayanang1990@gmail.com, ORCID id: <https://orcid.org/0009-0006-9889-0524>; 2.3.4.5.6 Athif Mohammed Rafeeq, Aysha Liyana A P, Ayisha S Rassak, Asitha A, Askar A⁶, Intern, MES Medical College, Perinthalmanna, Kerala, India; Address for Correspondence: Narayanan Namboothiri G, Associate Professor, Doctor, Department of Community Medicine, MES Medical College, Perinthalmanna, Kerala, 679338, Phone: 9446984241, E-mail: narayanang1990@gmail.com

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INTRODUCTION

Pregnancy denotes a dynamic physiological and psychological transition that may predispose women to varying degrees of emotional stress.⁽¹⁻²⁾ Matters concerning to maternal health, fetal well-being, financial responsibilities, and evolving family roles often contribute to increased stress levels during this period.^(2,3) Additionally, hormonal changes and exposure to life stressors may also impact psychological responses, which can affect materno-fetal outcomes, including low birth weight, preterm labor, PROM, and postpartum mental health disturbances.⁽³⁻⁶⁾

Social support plays a pivotal role in shaping maternal psychological well-being throughout pregnancy. It encompasses emotional reassurance, informational guidance, and practical assistance obtained from partners, family members, and social networks.⁽⁵⁻⁷⁾ According to the Stress and Coping Theory proposed by Lazarus and Folkman, social support functions as a buffering mechanism that reduces the impact of stress by enhancing coping capacity. Higher perceived social support has shown to be concomitant with improved psychological well-being and better maternal health outcomes, whereas inadequate support has been coupled with antenatal anxiety, depression, and adverse pregnancy experiences.^(4,7-9)

Within the Indian sociocultural context, family structure and interpersonal relationships substantially influence the antenatal experience. In Kerala, unique demographic patterns, high antenatal service utilization, and shifting family dynamics necessitate focused evaluation of psychosocial determinants of maternal health.⁽¹⁰⁻¹²⁾ Malappuram district of Kerala represents a high relevance setting for examining these factors owing to its high maternal population load. It is the most populous district in Kerala, constituting nearly 13% of the state population, thereby contributing significantly to the total number of pregnancies in the state. The high population density (>1,158 per square kilometre) may affect the availability and dynamics of social support networks. In addition, a high sex ratio (1102 females per 1000 males) and a predominantly rural population (~60%) may impact family

structure, support systems, and stress experiences during pregnancy. Notably, Malappuram reports the highest number of births and pregnancies per annum in Kerala. Furthermore, the region is characterized by frequent male out-migration for employment, mixed urban and semi-urban populations, and a transition from joint to nuclear family structures, both of which may determine the availability and perception of social support among pregnant women. Despite high utilization of antenatal services, psychosocial aspects of maternal health often receive insufficient attention in routine care.⁽¹³⁻¹⁵⁾ Considering these demographic and sociocultural characteristics and the limited availability of region-specific evidence, the present study was pursued to assess the relationship between perceived social support and perceived stress among pregnant women and to examine the association of selected sociodemographic factors with these variables.

2. METHODOLOGY

The present hospital-based cross-sectional study was conducted in selected healthcare facilities in Malappuram district, Kerala. The study was carried out at the District Hospital, Perinthalmanna, Community Health Centre, Mankada, and MES Medical College, Perinthalmanna. Data collection was undertaken over a three-month period from March 2025 to June 2025.

The study included pregnant women aged 18 years and above attending antenatal clinics at the District Hospital, Community Health Centre, and MES Medical College, who were in any trimester of pregnancy and willing to provide informed consent. Pregnant women who were unable to communicate or complete the questionnaire due to physical or cognitive limitations, those with diagnosed psychiatric illness, and those requiring emergency care for pregnancy-related complications at the time of data collection were excluded from the study.

The sample size was calculated based on a previous study by Zyrek et al.,⁽¹⁰⁾ which reported that 69% of pregnant women had good perceived social support. Using the formula $n = 4pq/d^2$, where $p = 69$, $q = 31$, and absolute error (d) = 4, the calculated sample size was 133. To improve the reliability of the



study and account for possible non-response, the final sample size was increased to 200 participants. A convenience sampling technique was employed, wherein eligible pregnant women attending antenatal clinics at the selected study settings during the study period were approached consecutively and included in the study after obtaining informed consent until the required sample size was achieved. Although this approach facilitated feasibility within the study setting, it may limit the generalizability of the findings beyond similar healthcare contexts.

Data were collected from 200 pregnant women attending antenatal clinics at the District Hospital, Community Health Centre, and MES Medical College using a convenient sampling method after obtaining informed consent. Information was obtained through a structured questionnaire administered in a confidential setting. The questionnaire consisted of three sections: the first included sociodemographic details such as age, education, occupation, marital status, parity, gestational age, family type, residence, and access to antenatal care. The second section assessed perceived social support using the Multidimensional Scale of Perceived Social Support (MSPSS), a 12-item validated tool measuring support from family, friends, and significant others; mean scores were interpreted as low (1.0–2.9), moderate (3.0–5.0), and high (5.1–7.0) perceived support. The third section evaluated stress using the 10-item Perceived Stress Scale; scores were categorized as low stress (0–13), moderate stress (14–26), and high stress (27–40). Both instruments are validated scales widely used to assess social support and perceived stress.^(10–13)

The collected data were broken down into percentages and cross-tabulated for several variables. Version 26 of the SPSS software was used for the analysis. The relationship between perceived social support and perceived stress was assessed using a chi-square test. Associations with selected sociodemographic factors were examined using the chi-square test, and a p-value of <0.05 was considered statistically significant. Fisher's exact test was used when expected cell counts were <5. In

addition, binary logistic regression analysis was performed to identify independent predictors of perceived stress and perceived social support after adjusting for potential confounding variables. Adjusted odds ratios with corresponding confidence intervals were reported. Data completeness was ensured at the point of collection by immediate verification of responses. Questionnaires with substantial missing information were excluded from analysis, while minor missing values were handled using case-wise deletion during statistical analysis. The study achieved a high response rate, with all eligible participants approached during the study period consenting to participate. The study achieved a high response rate, with 200 out of 215 eligible participants consenting to participate (response rate: 93.0%).

Prior to participation, all respondents were informed about the purpose of the study and assured that their responses would remain confidential and anonymous. Participation was entirely voluntary, and written informed consent was obtained from each participant. The study was conducted in accordance with the principles of the Helsinki Declaration. Ethical approval was obtained from the Institutional Ethics Committee of the MES Medical College, Perinthalmanna, Kerala, India with reference number STUDENT/IEC/4/2025.

3. RESULTS

3.1. Sociodemographic features (n=200)

As depicted in **Table 1**, the majority of participants were aged 25–30 years (46.5%) and were multigravida (58.5%). Most women were in the second trimester (39.5%) and reported regular antenatal care (78.5%). A higher proportion were unemployed (63.5%), belonged to nuclear families (59.5%), and resided in rural areas (55.5%). Most pregnancies were planned (70.5%), and the majority had no pregnancy-related complications (76.5%) or chronic illnesses (86.5%). The husband was the main source of support for 51.5% of participants, and 48.5% reported occasional social interactions, while 68.5% had a caregiver present during pregnancy.

**Table 1. Sociodemographic characteristics of the study participants (n = 200)**

S. No	Variable	Category	Frequency	Percentage
1	Age	18–24 years	67	33.5%
		25–30 years	93	46.5%
		>30 years	40	20.0%
2	Gestational age	First trimester	45	22.5%
		Second trimester	79	39.5%
		Third trimester	76	38.0%
3	Gravida	Primigravida	83	41.5%
		Multigravida	117	58.5%
4	No. of living children	None	83	41.5%
		One	71	35.5%
		Two or more	46	23.0%
5	Antenatal care	Regular	157	78.5%
		Irregular	43	21.5%
6	Education level	Up to secondary school	63	31.5%
		Higher secondary	77	38.5%
		Graduate and above	60	30.0%
7	Employment	Employed	73	36.5%
		Unemployed	127	63.5%
8	Type of family	Nuclear	119	59.5%
		Joint/extended	81	40.5%
9	Residence	Urban	89	44.5%
		Rural	111	55.5%
10	Planned pregnancy	Planned	141	70.5%
		Unplanned	59	29.5%
11	Pregnancy-related complications	Present	47	23.5%
		Absent	153	76.5%
12	Chronic illnesses	Present	27	13.5%
		Absent	173	86.5%
13	Source of support	Husband	103	51.5%
		Family members	73	36.5%

		Friends/others	24	12.0%
14	Frequency of social interactions	Rare	37	18.5%
		Occasional	97	48.5%
		Frequent	66	33.0%
15	Presence of caregiver	Yes	137	68.5%
		No	63	31.5%

3.2. Perceived social support and perceived stress among pregnant women (n=200)

Among the 200 pregnant women included in the study, nearly half (48%) reported moderate perceived social support, while 30% experienced high support and 22% reported

low support. With respect to perceived stress, the majority of participants (62%) had moderate stress levels, whereas 21% reported high stress and 17% had low stress as illustrated in figure 1 and 2.

Figure 1. Pie chart showing the distribution of perceived social support (PSS) among pregnant women (n = 200)

Perceived social support among pregnant women (n=200)

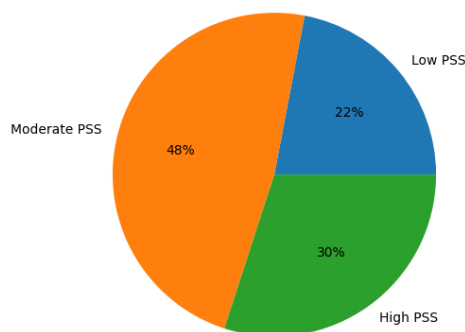
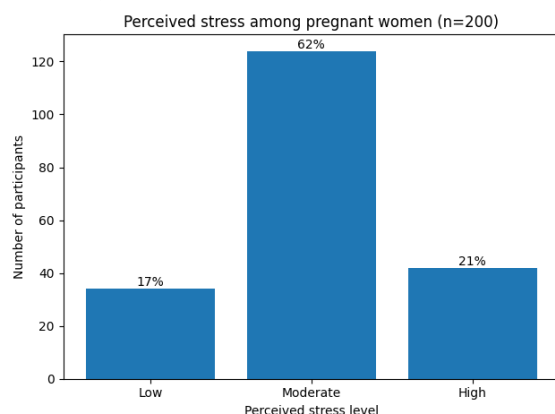


Figure 2. Bar diagram showing the distribution of perceived stress (PS) among pregnant women (n = 200)



3.3. Association between perceived social support and perceived stress among pregnant women (n=200)

Among women with low perceived social support, 45.5% experienced high stress, 45.5% had moderate stress, and 9.1% reported low stress. Among those with moderate social support, 70.8% had moderate stress, 14.6% had low stress, and 14.6% had high stress. Among women with high perceived social

support, 60.0% had moderate stress, 26.7% had low stress, and 13.3% had high stress. A statistically significant association was observed between perceived social support and perceived stress ($\chi^2 = 24.52$, $p < 0.001$) as mentioned in **Table-2**.

Table 2. Association between perceived social support and perceived stress among pregnant women (n = 200)

Perceived social support	Low stress n (%)	Moderate stress n (%)	High stress n (%)	Total	Significance
Low support	04 (9.1)	20 (45.5)	20 (45.5)	44	Fischer exact value: 24.52
Moderate support	14 (14.6)	68 (70.8)	14 (14.6)	96	P value: <0.001
High support	16 (26.7)	36 (60.0)	08 (13.3)	60	
Total	34	124	42	200	

3.4. Association between perceived social support (PSS) and factors (n = 200)

A statistically significant association was observed between perceived social support and several factors. Lower PSS was more common among women aged above 30 years (40.0%) compared to those aged 18–24 years (14.9%) and 25–30 years (19.4%). Higher PSS was reported among primigravida women (85.5%) and those with no living children (88.0%). Unemployed women (82.7%) and

those residing in rural areas (85.6%) demonstrated higher PSS compared to their counterparts. Women with pregnancy-related complications also showed higher support (91.5%) than those without complications (73.9%). In addition, participants who reported their husband as the primary source of support (86.4%), those with occasional (83.5%) or frequent (84.8%) social interactions, and those with the presence of a caregiver (83.9%) reported higher PSS as outlined in **Table-3**.

Table 3. Association between perceived social support (PSS) and factors (n = 200)

Variable	Category	Low PSS n (%) (n=44)	Moderate + High PSS n (%) (n=156)	χ^2	p-value
Age	18–24 years	10 (14.9)	57 (85.1)	9.88	0.007
	25–30 years	18 (19.4)	75 (80.6)		
	>30 years	16 (40.0)	24 (60.0)		
Gravida	Primigravida	12 (14.5)	71 (85.5)	4.70	0.030
	Multigravida	32 (27.4)	85 (72.6)		
No. of living children	None	10 (12.0)	73 (88.0)	9.63	0.008
	One	18 (25.4)	53 (74.6)		
	Two or more	16 (34.8)	30 (65.2)		
Employment	Employed	22 (30.1)	51 (69.9)	4.43	0.035
	Unemployed	22 (17.3)	105 (82.7)		
Residence	Urban	28 (31.5)	61 (68.5)	8.36	0.003
	Rural	16 (14.4)	95 (85.6)		
Pregnancy-related complications	Present	4 (8.5)	43 (91.5)	6.51*	0.010*

	Absent	40 (26.1)	113 (73.9)		
Source of support	Husband	14 (13.6)	89 (86.4)	8.85	0.011
	Family members	22 (30.1)	51 (69.9)		
	Friends/others	8 (33.3)	16 (66.7)		
Frequency of social interactions	Rare	18 (48.6)	19 (51.4)	18.27	0.001
	Occasional	16 (16.5)	81 (83.5)		
	Frequent	10 (15.2)	56 (84.8)		
Presence of caregiver	Yes	22 (16.1)	115 (83.9)	8.94	0.002
	No	22 (34.9)	41 (65.1)		

Table 4 presents the binary logistic regression analysis of factors associated with perceived social support. Binary logistic regression analysis showed that younger age (18–24 years: OR = 3.12; 95% CI: 1.28–7.62), primigravida status (OR = 2.19; 95% CI: 1.08–4.45), no living children (OR = 3.08; 95% CI: 1.32–7.20), unemployment (OR = 2.05; 95% CI: 1.01–4.15), rural residence (OR = 2.67; 95% CI:

1.29–5.52), and presence of pregnancy-related complications (OR = 3.45; 95% CI: 1.32–9.02) were significantly associated with higher perceived social support. Additionally, occasional social interactions (OR = 3.12; 95% CI: 1.29–7.52) and presence of a caregiver (OR = 2.54; 95% CI: 1.21–5.32) were also significant factors.

Table 4: Binary logistic regression analysis of factors associated with perceived social support (PSS) (n = 200)

Variable	Category	Adjusted OR	95% CI	p-value
Age	18–24 years	3.12	1.28–7.62	0.012
	25–30 years	2.41	1.05–5.53	0.037
	>30 years	Reference		
Gravida	Primigravida	2.19	1.08–4.45	0.029
	Multigravida	Reference		
No. of living children	None	3.08	1.32–7.20	0.009
	One	1.72	0.78–3.81	0.180
	Two or more	Reference		
Employment	Unemployed	2.05	1.01–4.15	0.046
	Employed	Reference		
Residence	Rural	2.67	1.29–5.52	0.008

	Urban	Reference		
Pregnancy-related complications	Present	3.45	1.32–9.02	0.011
	Absent	Reference		
Source of support	Husband	Reference		
	Family members	2.38	1.12–5.05	0.024
	Friends/others	2.74	1.01–7.43	0.048
Frequency of social interactions	Occasional	3.12	1.29–7.52	0.011
	Rare	0.68	0.28–1.63	0.380
	Frequent	Reference		
Presence of caregiver	Yes	2.54	1.21–5.32	0.014
	No	Reference		

3.5 Association between perceived stress (PS) and factors (n = 200)

A statistically significant association was observed between perceived stress and several factors as demonstrated in **Table 5**. Among women aged 18–24 years, 91.0% reported moderate to high stress compared to 60.0% among those aged above 30 years. Primigravida women had 90.4% moderate to high stress compared to 77.8% among multigravida. Participants with irregular antenatal care had 95.3% moderate to high stress compared to 79.6% among those with

regular care. Moderate to high stress was reported by 93.2% of employed women and 93.6% of those with pregnancy-related complications. Women with chronic illnesses had 96.3% moderate to high stress compared to 80.9% among those without. Among participants, 89.0% (family) and 91.7% (friends/others) reported moderate to high stress compared to 76.7% among those supported by husbands. Additionally, 94.6% (rare) and 87.6% (occasional) reported moderate to high stress compared to 69.7% with frequent social interactions.

Table 5. Association between perceived stress (PS) and factors (n = 200)

Variable	Category	Low PS n (%)	Moderate + High PS n (%)	χ^2	p-value
Age	18–24 years	06 (9.0)	61 (91.0)	19.18	<0.001
	25–30 years	12 (12.9)	81 (87.1)		
	>30 years	16 (40.0)	24 (60.0)		
Gravida	Primigravida	8 (9.6)	75 (90.4)	5.45	0.019
	Multigravida	26 (22.2)	91 (77.8)		

Antenatal care	Regular	32 (20.4)	125 (79.6)	5.92*	0.015*
	Irregular	02 (4.7)	41 (95.3)		
Employment	Employed	05 (6.8)	68 (93.2)	8.39	0.003
	Unemployed	29 (22.8)	98 (77.2)		
Pregnancy-related complications	Present	03 (6.4)	44 (93.6)	4.90*	0.026*
	Absent	31 (20.3)	122 (79.7)		
Chronic illnesses	Present	01 (3.7)	26 (96.3)	3.91*	0.048*
	Absent	33 (19.1)	140 (80.9)		
Source of support	Husband	24 (23.3)	79 (76.7)	6.06*	0.048*
	Family members	8 (11.0)	65 (89.0)		
	Friends/others	02 (8.3)	22 (91.7)		
Frequency of social interactions	Rare	02 (5.4)	35 (94.6)	13.28*	0.001*
	Occasional	12 (12.4)	85 (87.6)		
	Frequent	20 (30.3)	46 (69.7)		

*Fischer exact test

Binary logistic regression analysis showed that younger age (18–24 years: OR = 5.48; 95% CI: 2.12–14.14; 25–30 years: OR = 4.20; 95% CI: 1.75–10.08), primigravida status (OR = 2.78; 95% CI: 1.32–5.85), irregular antenatal care (OR = 3.96; 95% CI: 1.55–10.12), employment (OR = 3.52; 95% CI: 1.51–8.20), and presence of pregnancy-related complications (OR = 2.94; 95% CI: 1.10–7.82) were significantly associated with higher perceived stress.

Additionally, support from family members (OR = 2.41; 95% CI: 1.10–5.25) and friends/others (OR = 2.86; 95% CI: 1.02–8.01), as well as rare (OR = 3.85; 95% CI: 1.45–10.19) and occasional social interactions (OR = 2.36; 95% CI: 1.08–5.14), were also associated with higher stress, while chronic illness was not significant (OR = 2.62; 95% CI: 0.92–7.41) as indicated in **Table – 6**.

Table 6: Binary logistic regression analysis of factors associated with perceived stress (PS) (n = 200)

Variable	Category	Adjusted OR	95% CI	p-value
Age	18–24 years	5.48	2.12–14.14	<0.001
	25–30 years	4.20	1.75–10.08	0.001
	>30 years	Reference		
Gravida	Primigravida	2.78	1.32–5.85	0.007
	Multigravida	Reference		
Antenatal care	Irregular	3.96	1.55–10.12	0.004
	Regular	Reference		
Employment	Employed	3.52	1.51–8.20	0.003
	Unemployed	Reference		
Pregnancy-related complications	Present	2.94	1.10–7.82	0.031
	Absent	Reference		
Chronic illnesses	Present	2.62	0.92–7.41	0.072
	Absent	Reference		
Source of support	Husband	Reference		
	Family members	2.41	1.10–5.25	0.028
	Friends/others	2.86	1.02–8.01	0.046
Frequency of social interactions	Rare	3.85	1.45–10.19	0.007
	Occasional	2.36	1.08–5.14	0.031
	Frequent	Reference		



4. DISCUSSION

The present findings showing an inverse association between perceived social support and perceived stress are in agreement with previous studies. Bedaso et al.⁽¹⁶⁾ reported a lower prevalence of inadequate support (7.1%) compared to 22% in the present study, while also identifying financial difficulty (AOR = 3.1) and depressive symptoms (AOR = 8.5) as key determinants, revealing broader psychosocial challenges. Similarly, Solivan et al.⁽¹⁷⁾ highlighted a strong correlation between stress measures ($p = 0.71$, $p < 0.01$) and a negative association with partner support ($r = -0.46$), which agrees with the significant association observed in the present study ($\chi^2 = 24.52$, $p < 0.001$). Abdi et al.⁽¹⁸⁾ further reported significant associations between social support and pregnancy-related stress ($\beta = 0.155$, $p = 0.046$), while Iranzad et al.⁽¹⁹⁾ observed lower stress levels among women with favourable support, with only 11.1% reporting poor support, contrasting with higher levels in the current study. Likewise, Bahrami et al.⁽²⁰⁾ established a significant negative effect of stress on social support ($\beta = -0.429$, $p < 0.001$). These findings jointly highlight that inadequate social support is consistently linked with higher stress across settings. From a practical perspective, these results emphasize the need for integrating psychosocial screening into routine antenatal care, strengthening partner and family involvement, and promoting supportive social networks to reduce maternal stress. Differences between studies may be attributed to variations in sociodemographic factors, cultural and family structures, healthcare access, and methodological differences including study settings and measurement tools.

The inverse association between perceived social support and perceived stress observed in the present study is in accordance with findings from previous research. Glazier et al.,⁽⁵⁾ in a community-based sample of 2,052 pregnant women, reported that lower levels of social support were linked with increased stress and emotional distress, which is parallel to the significant association reported in the present study ($\chi^2 = 24.52$, $p < 0.001$). Yu et al.⁽⁶⁾ also indicated that stress across pregnancy is shaped by changing psychological and

behavioural factors. Similarly, Scheyer and Urizar⁽⁷⁾ outlined heightened stress patterns among vulnerable pregnant women and their association with an increased risk of postpartum depression. In addition, Zyrek et al.⁽¹⁰⁾ noted that adequate social support during pregnancy was associated with reduced risk of postpartum depression and better maternal mental health outcomes, supporting the relationship observed in the present study.

The pattern of perceived stress and its associated factors observed in the current study is comparable with earlier reports. Biresaw et al.⁽²¹⁾ reported a lower prevalence of stress (13.7%, 95% CI: 10.4–17.1), whereas higher levels were observed in the present study, though both identified pregnancy-related factors as contributors. Vijayaselvi et al.⁽²²⁾ identified that 65.4% of women had higher stress scores, and Dardouri et al.⁽²³⁾ reported moderate stress in 73.5% and severe stress in 14.5%, with 28% having inadequate social support, which aligns with the predominance of moderate-to-high stress and its association with support in the present study ($\chi^2 = 24.52$, $p < 0.001$). Raghuvver et al.⁽²⁴⁾ reported high social support in 67.6% with higher odds among employed women (AOR=2.92), whereas the present study observed higher support among unemployed women, suggesting contextual variation. Najjarzadeh et al.⁽²⁵⁾ reported high stress in 42% and identified predictors such as urban residence, inadequate support, and pregnancy complications, which are consistent with factors observed in the present study, although additional determinants like violence, sleep disorders, and financial constraints were not assessed. Recent evidence highlights the importance of integrating psychosocial support into routine antenatal care. Reed et al.⁽²⁶⁾ demonstrated that incorporating dedicated maternal mental health services within maternity care improved access to psychological support and enhanced maternal well-being. Similarly, Feyissa et al.⁽²⁷⁾ emphasized that integration of mental health services into perinatal care is feasible but faces challenges such as limited resources, workforce constraints, and stigma, while also offering opportunities for early identification and management of psychological distress. In a



community-based intervention, Akter et al.⁽²⁸⁾ showed that combining psychosocial stimulation, maternal mental health support, and nutritional interventions in rural settings was both acceptable and effective in improving maternal outcomes. Together, these studies suggest that strengthening antenatal services through integrated psychosocial support, community-based approaches, and multidisciplinary care can improve maternal mental health outcomes.

5. CONCLUSION AND RECOMMENDATIONS

The present study demonstrated a significant relationship between perceived social support and perceived stress among pregnant women. Based on these findings, routine screening for stress and social support should be incorporated into antenatal care visits to enable early identification of at-risk women. Healthcare providers should actively involve partners and family members during antenatal counselling sessions to strengthen support systems. In addition, structured psychosocial support interventions, including counselling services and support groups, should be integrated into existing maternal health programs. Policymakers should prioritize the inclusion of mental health components within antenatal care guidelines and ensure the availability of trained personnel for psychosocial assessment and support. Such measures may help reduce maternal stress and improve overall maternal well-being during pregnancy.

6. LIMITATIONS

As a hospital-based cross-sectional study, causal relationships between perceived social support and perceived stress could not be established, limiting the ability to determine the direction of association. The use of

convenience sampling may have introduced selection bias, as participants attending healthcare facilities may differ from those in the community, thereby reducing the generalizability of the findings. The reliance on self-reported questionnaires may have led to recall bias and social desirability bias, potentially resulting in underreporting of stress or overestimation of social support, which can affect the validity of the results. Additionally, the study was conducted in a limited geographic area over a short duration, which may restrict the applicability of the findings to other settings. Other relevant psychological, environmental, and socioeconomic factors influencing stress during pregnancy were not assessed, which may have led to residual confounding.

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