

A Descriptive Study to Assess the Determinants of Pregnancy Loss During 1st and 2nd Trimester of Pregnancy Among Miscarriage Mothers Admitted in Selected Hospitals at Bagalkot, Karnataka

Miss Jyoti Datta Jadhav^{1*}, Dr. Kamala K.N², Dr. Deelip Somaninga Natekar³

¹M. Sc Nursing Final Year, Shri B.V.V.S Sajjalashree Institute of Nursing Sciences, Bagalkot, Karnataka

²Professor, Department of Obstetrics and Gynaecological Nursing, Shri B.V.V.S Sajjalashree Institute of Nursing Sciences, Bagalkot, Karnataka

³Principal, (Ph.D. In Nursing), Shri B.V.V.S Sajjalashree Institute of Nursing Sciences, Bagalkot, Karnataka

DOI: <https://doi.org/10.36347/sjams.2026.v14i05.026>

| Received: 01.04.2026 | Accepted: 14.05.2026 | Published: 18.05.2026

*Corresponding author: Miss Jyoti Datta Jadhav

M. Sc Nursing Final Year, Shri B.V.V.S Sajjalashree Institute of Nursing Sciences, Bagalkot, Karnataka

Abstract

Original Research Article

Background: A pregnancy loss or miscarriage is today one of the most common adverse pregnancy outcomes. Miscarriage, the loss of a pregnancy before 24 weeks or <500 g fetal weight, is influenced by various socio-demographic, medical, environmental, lifestyle, and psychological factors. **Method:** A descriptive observational study with 100 miscarriage mothers selected via convenient sampling from Best kuntoji hospital, Hsk hospital and Government Hospital at Bagalkote. Data collected via structured and semi-structured questionnaires; analyzed using descriptive statistics, t-tests, and chi-square tests. **Results:** Percentage wise distribution of data reveals that the highest percentage of miscarriage mother's In General factors (48%). In Environmental factors were (30 %). In Medical factors, were (30%). In Obstetrical factors were (33%). In Social factors were (85%). In Lifestyle factors were (89%). And in Psychological factors were (28%). Chi square test is used to find out the association between Determinants of pregnancy loss during 1st trimester and 2nd trimester with selected socio-demographic variables

➤ The finding showed that there is significant association between Determinants of pregnancy loss during 1st trimester with selected socio-demographic variables such as in General factor, age, environmental factor, Type of family, Educational status, Occupation, Family income. Medical factor, Type of family and Occupation. Obstetrical factor, Educational status and Occupation. Social factor, Occupation. life style factor, Type of family and Occupation.

➤ The finding showed that there is significant association between Determinants of pregnancy loss during 2nd trimester with selected socio-demographic variables such as in Medical factor, Religion, Type of family and Occupation. Obstetrical factor, Type of family and Occupation. Social factor Age. Thus the research hypothesis was accepted.

Conclusion: Determinants of pregnancy loss were higher in the 1st trimester. Social, lifestyle, and psychological factors play a major role, highlighting the need for early preventive measures. The overall study findings revealed that the percentage of determinates of pregnancy loss during 1st trimester was comparatively higher than percentage of determinates of pregnancy loss during 2nd trimester.

Keywords: Miscarriage mothers, First trimester, second trimester.

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Pregnancy loss, commonly referred to as miscarriage, is defined as the spontaneous loss of pregnancy before fetal viability and remains a significant global public health concern. It affects a considerable proportion of pregnancies worldwide and has profound physical, emotional, and social consequences for women and their families. Globally, it is estimated that a substantial number of pregnancies end in miscarriage, with higher prevalence reported in low- and middle-

income countries due to limited access to quality maternal healthcare services. [1]

In India, pregnancy loss continues to be a major reproductive health issue, with varying prevalence across different regions and population groups.[2]

Pregnancy loss is a multifactorial condition influenced by a wide range of determinants including socio-demographic, medical, obstetrical, environmental, lifestyle, social, and psychological factors. Maternal age

Citation: Jyoti Datta Jadhav, Kamala K.N, Deelip Somaninga Natekar. A Descriptive Study to Assess the Determinants of Pregnancy Loss During 1st and 2nd Trimester of Pregnancy Among Miscarriage Mothers Admitted in Selected Hospitals at Bagalkot, Karnataka. Sch J App Med Sci, 2026 May 14(5): 802-807.

has been identified as one of the most important risk factors, with increased risk observed among both younger and advanced maternal age groups. [3]

Additionally, chronic medical conditions such as hypertension, diabetes, and hormonal imbalances contribute significantly to adverse pregnancy outcomes. Obstetrical factors such as previous history of miscarriage, parity, and complications during pregnancy also play a crucial role in determining pregnancy outcomes.[4]

Environmental exposures, including occupational hazards and exposure to harmful chemicals, have been linked to increased risk of miscarriage, particularly among working women (Jafari *et al.*, 2022). [5]

Lifestyle factors such as poor nutrition, excessive caffeine intake, and lack of physical activity further contribute to pregnancy loss. [6]

Moreover, emerging evidence suggests that psychological factors, including stress, anxiety, and emotional disturbances, significantly influence maternal health and pregnancy outcomes. Social determinants such as family support, marital relationships, and socioeconomic status also affect maternal well-being and pregnancy outcomes.[7]

Studies have highlighted that lack of social support and increased psychosocial stress are associated with higher rates of miscarriage. [8]

Despite the growing body of literature, there is limited research comparing the determinants of pregnancy loss between the first and second trimesters, particularly in the Indian context. Understanding trimester-specific differences is essential for developing targeted interventions and improving maternal health outcomes. [9]

Therefore, the present study aims to assess and compare the determinants of pregnancy loss during the first and second trimester among miscarriage mothers.

MATERIALS AND METHODS

Study Design:

A Observational descriptive study design was adopted to assess the determinants of pregnancy loss among miscarriage mothers. This design was appropriate to evaluate and compare multiple factors influencing pregnancy loss at a single point in time.

Study Setting:

The research was carried out in the OBG units of Best Kuntoji Hospital, District Government Hospital and HSK Hospital and research Centre, Bagalkote, Karnataka.

Study Population:

The study population consisted of women who experienced pregnancy loss (miscarriage) during the first and second trimester and were available at the selected Hospitals during the data collection. They were selected using non probability purposive sampling technique.

Sample Size:

The sample size included in the study was 100 miscarriage mothers with first and Second trimester of pregnancy loss.

Sampling Technique: A non-probability purposive sampling technique was used to collect data.

Inclusion Criteria

- Women who experienced miscarriage in the first or second trimester
- Women willing to participate in the study
- Women available during the data collection period

Exclusion Criteria

- Women with induced abortion
- Women who were critically ill and unable to respond
- Women not willing to participate

Data Collection Tool:

Data were collected by interview schedule, by using a structured questionnaire to collect socio-demographic data, and A semi structured questionnaire to assess the determinants of pregnancy loss among Miscarriage mothers.

Variable under study:

Determinants of pregnancy loss which includes obstetrical factors, medical factors, environmental factors and lifestyle factors.

Sociodemographic Variables:

age, religion, type of family, family monthly income, education status, occupation status of mother, place of residence, gestational age, parity, age at marriage, dietary intake (veg and mixed), family history of miscarriage

Statistical analysis:

The obtained data were statistically examined in terms of the objectives of the study using inductive statistics. A master sheet was prepared with responses given by the study participants. Frequencies and Percentage was used for the analysis of demographic data. The mean and standard deviation was used as inferential statistics. The Chi Square test was used to determine association between determinants during 1st and 2nd trimester of pregnancy loss with selected demographic and obstetric variables among mothers with miscarriage.

Ethical Approval: A certificate of ethical permission was obtained from ethical committee of the institution and written consent was taken from each participant.

RESULT

Socio-demographic variables (Part I)

In this study, A large proportion (41%) belonged to the 25–29 years age group, followed by 33% in the 20–24 years group. Most participants (63%) were from rural areas. In terms of religion, nearly half (48%) were Hindus, while the remaining participants included Muslims (21%), Christians (11%), and others (20%). Slightly more than half (51%) belonged to nuclear families, with the rest living in joint families. In education, the majority of participants had attained secondary education (38%), followed by higher secondary (21%) and degree (18%), while only a small percentage (6%) had non-formal education. Nearly half of the participants (47%) were homemakers, and others were engaged in private (28%) and government jobs (10%). Most participants belonged to the middle-income group, with 38% earning 10,001–15,000 and 37%

earning 15,001–20,000 per month. With respect to dietary habits, more than half of the participants (52%) followed a mixed diet, while 27% were eggitarian and 21% were vegetarian.

Obstetrical Variables (Part II)

In this study the majority of pregnancy losses occurred during the first trimester (62%), while 38% occurred in the second trimester. With regard to gravida, slightly more than half of the participants (51%) were multigravida, and 49% were primigravida, showing an almost equal distribution. In terms of parity, most mothers were multiparous (52%), followed by primipara (35%) and grand multipara (13%). Regarding the type of pregnancy loss, complete abortion (26%) was the most common, followed closely by inevitable (25%) and missed abortion (24%), while incomplete (18%) and septic abortion (7%) were less frequent. Overall, first trimester losses and multigravida mothers were more predominant in the study group.

PART III

Table: Comparison of Determinants of Pregnancy Loss Between 1st and 2nd Trimester

Sl. No	Factors	No. of Questions	First Trimester (%)	Second Trimester (%)
1	General factors	6	27%	21%
2	Environmental factors	4	17%	13%
3	Medical factors	5	21%	13%
4	Obstetrical factors	10	21%	13%
5	Social factors	3	56%	29%
6	Lifestyle factors	4	56%	33%
7	Psychological factors	2	18%	10%

The table shows the comparison of various determinants of pregnancy loss between the first and second trimesters. Most factors were more prevalent in the first trimester compared to the second trimester. General, medical, and obstetrical factors showed moderate influence, with higher percentages in the first trimester. Social and lifestyle factors had the highest

contribution, particularly in the first trimester (56% each), followed by the second trimester. Environmental and psychological factors showed comparatively lower percentages. Overall, the findings indicate that multiple determinants contribute to pregnancy loss, with a greater impact observed during the first trimester.

Table: Comparison of Determinants of Pregnancy Loss Between First and Second Trimester of pregnancy among miscarriage mothers

Sl. No	Factors	First Trimester (Mean ± SD)	Second Trimester (Mean ± SD)	t-value	p-value	Interpretation
1	General factors	10.5 ± 0.95	8.16 ± 1.10	-1.6039	0.1119	Not Significant
2	Environmental factors	14 ± 0.81	10.25 ± 0.94	-1.2857	0.2015	Not Significant
3	Medical factors	10.6 ± 1.07	7 ± 1.29	-0.4541	0.6507	Not Significant
4	Obstetrical factors	11 ± 2.4	7.6 ± 1.8	-0.8755	0.3834	Not Significant
5	Social factors	44.3 ± 0.7	23 ± 0.7	2.757	0.0069	Significant*
6	Lifestyle factors	36.75 ± 0.7	21.5 ± 0.6	-1.0254	0.3075	Not Significant
7	Psychological factors	13.5 ± 0.69	7.5 ± 0.6	-13.844	0.0001	Highly Significant*

The above table shows the comparison of determinants of pregnancy loss between the first and second trimesters using t-test analysis. The mean scores for all factors were higher in the first trimester compared to the second trimester. However, general, environmental, medical, obstetrical, and lifestyle factors did not show statistically significant differences ($p > 0.05$).

In contrast, social factors ($p = 0.0069$) and psychological factors ($p = 0.0001$) showed statistically significant differences, indicating a stronger association with pregnancy loss, particularly during the first trimester. This suggests that social and psychological determinants play a more important role in influencing pregnancy loss compared to other factors.

Table: Association Between Determinants of Pregnancy Loss and Socio-Demographic Variables (Chi-square Test) First Trimester

Factors	Significant Variables	p-value	Interpretation
General factors	Age	0.0461	Significant
Environmental factors	Type of family, educational status, Occupation, Family income	<0.05	Significant
Medical factors	Type of family, Occupation	<0.05	Significant
Obstetrical factors	Educational status, Occupation	<0.05	Significant
Social factors	Occupation	0.0436	Significant
Lifestyle factors	Type of family, Occupation	<0.05	Significant
Psychological factors	None	>0.05	Not Significant

Second Trimester

Factors	Significant Variables	p-value	Interpretation
General factors	None	>0.05	Not Significant
Environmental factors	None	>0.05	Not Significant
Medical factors	Religion, Type of family, Occupation	<0.05	Significant
Obstetrical factors	Type of family, Occupation	<0.05	Significant
Social factors	Age	0.00368	Significant
Lifestyle factors	None	>0.05	Not Significant
Psychological factors	None	>0.05	Not Significant

The above table summarizes the association between determinants of pregnancy loss and selected socio-demographic variables using the Chi-square test. In the first trimester, significant associations were observed with several variables, particularly age (general factors), and type of family, education, occupation, and income (environmental factors). Occupation showed consistent significance across multiple factors, indicating its strong influence on pregnancy loss during the first trimester. Psychological factors did not show any significant association.

In the second trimester, Significant relationships were found mainly in medical factors (religion, type of family, and occupation), obstetrical factors (type of family and occupation), and social factors (age). Most other variables did not show significant associations. Overall, the findings indicate that socio-demographic variables have a stronger influence on determinants of pregnancy loss in the first trimester compared to the second trimester, supporting the study hypothesis (H2).

DISCUSSION

The finding of this study discusses the major findings and review them in relation to findings from the results of other studies.

The present study identified significant differences in social and psychological determinants between first and second trimester pregnancy loss. This finding aligns with previous studies indicating that psychological stress and social conditions significantly impact pregnancy outcomes (Cumming *et al.*, 2007). [9]

The association between occupation and pregnancy loss observed in this study is consistent with

findings from population-based studies, which highlight increased miscarriage risk among working women due to physical strain and stress (Kim *et al.*, 2023; KoreaMed study, 2023). [10]

Medical factors such as family type and occupation showing significant associations are supported by earlier research indicating that socio-environmental conditions influence maternal health and pregnancy outcomes (Adeniran *et al.*, 2022; Rajan *et al.*, 2023). [8]

Interestingly, several sociodemographic variables were not significantly associated with psychological factors, which is consistent with studies conducted in Pakistan and India showing that psychological distress may be influenced more by personal and situational factors rather than demographic characteristics (Khan Z, Rehman R, Khan A *et al.*, 2018;). [11]

The study also highlights trimester-specific variations, supporting evidence from NFHS-based studies in India that determinants of pregnancy loss vary across different stages of pregnancy (Das *et al.*, 2024). [2]

The findings of the present study are consistent and supported by a study conducted by Cumming GP, Klein S, Bolsover D, Lee AJ, Alexander DA, Maclean M, *et al.*, in Scotland, UK. A population-level study reported that 55% of women exhibited depression symptoms, and up to 27% experienced perinatal grief, with over 18% reporting moderate anxiety after spontaneous abortion. [9]

The findings of the present study are consistent and supported with the study conducted by Ghosh R,

Sharma AK, Gupta R the Environmental Factors Significant associations, Type of Family ($p = 0.0344$) Educational Status ($p = 0.0289$), Occupation ($p = 0.0016$), Family Income ($p = 0.0373$), Limited education and low income can restrict awareness of environmental risks (e.g., passive smoking, long travel). Nuclear families may lack physical and emotional support. [12]

The findings of the present study are consistent and supported by the study conducted by Lopez M, Chen Y, and Gupta N, a study assessed dietary habits, income, and education in relation to depressive symptoms. It reported that food habits (specific dietary patterns) showed no significant association with depression in multivariate models. [13]

The findings of the present study are consistent and supported by the study conducted by Sargisson RJ, De Groot JIM, Steg L. In European countries ($n = 11,820$), researchers assessed whether sociodemographic variables—age, income, education, urbanization level, gender, and political orientation—predicted environmental values (altruistic, biospheric, and egoistic). The findings showed that sociodemographic factors were generally not related to environmental values, with only gender and political orientation showing weak but statistically significant links; other variables, including age and income, were non-significant. The authors concluded that demographic variables are not suitable proxies for environmental values. [14]

The findings of the present study are consistent and supported by the study conducted by Khan Z, Rehman R, Khan A. in Pakistan (2018) investigated lifestyle factors and socio-demographic characteristics among women with a history of miscarriage in Pakistan. The study found that none of the variables—age, residence, religion, family type, education, occupation, income, or dietary habits—were statistically significantly associated with lifestyle patterns affecting miscarriage risk (all P -values > 0.05). [11]

CONCLUSION

The present study concluded that pregnancy loss among first and second trimester miscarriage mothers is influenced by multiple determinants including sociodemographic, obstetrical, medical, environmental, lifestyle, social, and psychological factors. The study findings revealed significant differences in social and psychological determinants between first and second trimester miscarriage mothers, indicating that emotional status and social support play an important role in pregnancy outcomes. Significant associations were also found between selected sociodemographic variables such as age, occupation, educational status, religion, type of family, and family income with various determinants of pregnancy loss. The study highlights the importance of early identification of high-risk mothers,

strengthening antenatal care services, psychological counseling, health education, and supportive maternal healthcare interventions to reduce pregnancy loss and improve maternal well-being and reproductive health outcomes.

ACKNOWLEDGEMENTS

I thank the anonymous referees for their useful suggestions. The heart is full and the words are few to express my sincere gratitude towards those helping hands.

CONTRIBUTION OF AUTHORS

Research concept- Miss Jyoti Datta Jadhav, Dr. Kamala K.N.

Research design- Miss Jyoti Datta Jadhav, Dr. Kamala K.N.

Supervision- Miss Jyoti Datta Jadhav, Dr. Deelip Somaninga Natekar.

Materials- Miss Jyoti Datta Jadhav.

Data Collection: Miss Jyoti Datta Jadhav.

Data analysis and Interpretation- Miss Jyoti Datta Jadhav.

Literature search- Miss Jyoti Datta Jadhav.

Writing article- Miss Jyoti Datta Jadhav.

Critical review- Dr. Kamala K.N, Dr. Deelip Somaninga Natekar.

Article editing- Miss Jyoti Datta Jadhav, Dr. Kamala K.N, Dr. Deelip Somaninga Natekar.

Final approval- Miss Jyoti Datta Jadhav, Dr. Kamala K.N, Dr. Deelip Somaninga Natekar.

REFERENCES

1. Who definition of miscarriage - Google Search [Internet]. Google.com. [cited 2024 Apr 25]. Available from: https://www.google.com/search?q=who+definition+of+miscarriage&oq=who&gs_lcrp=EgZjaHJvbWUqBggAEEUYOzIGCAAQRRg7MgYIARBFgDKyBggCEEUYPTIGCAMQRRg9MgYIBBBFGD0yBggFEEUYOzIGCAYQRRg7MgcIBxAAGI8CMgcICBAAGI8CMgcICRAGI8C0gEIMJg2MWowajeoAhSwAgE&client=ms-android-xiaomi-rvo2b&sourceid=chrome-mobile&ie=UTF-8
2. Das M, Patidar H, Singh M. Understanding trimester-specific miscarriage risk in Indian women: insights from the calendar data of National Family Health Survey (NFHS-5) 2019-21. *BMC Women's Health*. 2024 Jan 23;24(1):63.
3. Sun YF, Zhang J, Xu YM, Cao ZY, Wang YZ, Hao GM, Gao BL. High BMI and insulin resistance are risk factors for spontaneous abortion in patients with polycystic ovary syndrome undergoing assisted reproductive treatment: a systematic review and meta-analysis. *Frontiers in endocrinology*. 2020 Dec 3; 11:592495.
4. Borella F, Marozio L, Bertschy G, Botta G, Bertero L, Cassoni P, Maina A, Cosma S, Benedetto C.

- Placenta-mediated pregnancy complications in women with a history of late fetal loss and placental infarction without thrombophilia: risk of recurrence and efficacy of pharmacological prophylactic interventions. A 10-year retrospective study. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2023 Dec 31;36(1):2183748.
5. Jafari A, Naghshi S, Shahinfar H, Salehi SO, Kiany F, Askari M, Surkan PJ, Azadbakht L. Relationship between maternal caffeine and coffee intake and pregnancy loss: A grading of recommendations assessment, development, and evaluation-assessed, dose-response meta-analysis of observational studies. *Frontiers in Nutrition*. 2022 Aug 9; 9:886224.
 6. Üzelpasaci E, Özçakar L, Özgül S, Gürşen C, Akbayrak T. Low back pain, ultrasonographic muscle thickness measurements and bio psychosocial factors at different trimesters of pregnancy. *Journal of Orthopaedic Science*. 2023 Jul 26.
 7. Rajendran B, Ibrahim SU, Ramasamy S. Maternal and Neonatal Risk Factors Associated with Perinatal Depression—A Prospective Cohort Study. *Indian Journal of Psychological Medicine*. 2024 Jan;46(1):24-31.
 8. Adeniran AS, Fawole AA, Abdul IF, Adesina KT. Pattern and determinants of miscarriage among women in a tertiary hospital in Ilorin, Nigeria. *Niger J Clin Pract*. 2022;25(6):817–823. doi: 10.4103/njcp.njcp_252_21.
 9. Cumming GP, Klein S, Bolsover D, Lee AJ, Alexander DA, Maclean M, et al. The emotional burden of miscarriage for women and their partners: trajectories of anxiety and depression over 13 months. *BJOG*. 2007;114(9):1138-45.
 10. Kim CB, Choe SA, Kim T, Kim MH, Ryu J, Oh JW, Yoon JW. Employment and pregnancy outcomes: a nationwide population-based study in South Korea. *Int J Environ Res Public Health*. 2023;20(3):1836. doi:10.3390/ijerph20031836.
 11. Khan Z, Rehman R, Khan A. Sociodemographic and lifestyle factors among women with miscarriage: A cross-sectional study in Pakistan. *J Obstet Gynaecol Res*. 2018;44(6):1057–64. doi:10.1111/jog.13601.
 12. Ghosh R, Sharma AK, Gupta R. Environmental risk factors in spontaneous abortion: a multicentric case-control study. *J Public Health*. 2019;27(3):225–230.
 13. Lopez M, Chen Y, Gupta N. Lifestyle and socioeconomic correlates of depression in adults: a community-based study. *Lifestyle Med*. 2024;8(1):25–31.
 14. Sargisson RJ, De Groot JIM, Steg L. The relationship between sociodemographics and environmental values across seven European countries. *Front Psychol*. 2020; 11:2253.