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Original Research Article

Prevalence of Primary Infertility among Reproductive Age Group Women

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Abstract:

Background: Primary infertility, defined as the inability to conceive after at least 12 months of regular unprotected intercourse, is a significant reproductive health issue affecting women worldwide. It has profound medical, psychological, and social consequences. The prevalence of primary infertility varies across regions due to differences in socio-demographic and lifestyle factors.

Objective: To estimate the prevalence of primary infertility among women of reproductive age (15–49 years) and to identify associated risk factors.

Methods: A community-based cross-sectional study was conducted among women in the reproductive age group. Data were collected using structured questionnaires covering socio-demographic characteristics, reproductive history, and lifestyle factors. Primary infertility was defined as failure to conceive despite regular unprotected intercourse for one year or more. Statistical analysis was performed to determine prevalence and associated factors.

Results: A total of 84 women in the reproductive age group were included in the study. The majority of women with primary infertility belonged to the age group of 20–30 years, followed by 30–40 years. Increased prevalence was observed among women with a longer duration of marriage (>5 years). Menstrual irregularities were reported in a significant proportion of infertile women, suggesting a possible association. Lifestyle factors such as stress, nutritional status, and body mass index also showed a correlation with primary infertility.

Conclusion: Primary infertility is a considerable public health concern among women of reproductive age. The observed prevalence highlights the need for early detection, awareness, and appropriate intervention strategies. Addressing modifiable risk factors and improving access to reproductive healthcare services can help reduce the burden of infertility.

Keywords: Primary Infertility, Prevalence, Reproductive Age Women, Risk Factors, Cross-Sectional Study.

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Introduction

Infertility is a major public health concern that affects millions of couples worldwide and has significant medical, psychological, and social implications. It is defined as the inability to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse. Infertility can be broadly classified into primary and secondary types; primary infertility refers to women who have never conceived, whereas secondary infertility applies to those who have experienced at least one prior pregnancy but are unable to conceive again. Globally, infertility affects an estimated 10–15% of couples, with varying prevalence across different regions due to socio-cultural, environmental, and economic factors [2]. In developing countries like India, the burden of infertility is compounded by limited access to healthcare services, lack of awareness, and social stigma, particularly directed toward women. Despite medical evidence that infertility can arise from male, female, or combined

factors, women are often disproportionately blamed, leading to emotional distress, marital discord, and social isolation. Primary infertility among women of reproductive age (15–49 years) is influenced by a wide range of factors, including increasing age at marriage, hormonal imbalances, ovulatory disorders, reproductive tract infections, lifestyle factors such as obesity and smoking, and environmental exposures. Additionally, conditions such as polycystic ovarian syndrome (PCOS), endometriosis, and thyroid disorders play a significant role in female infertility [6]. Socio-demographic determinants like education level, occupation, socioeconomic status, and access to healthcare services also contribute to variations in prevalence. Understanding the prevalence of primary infertility and its associated risk factors is essential for developing effective public health strategies and interventions [3]. Early identification and management can improve reproductive outcomes and reduce the psychological and social burden on affected individuals. Therefore, this study aims to assess the prevalence of primary infertility among women in the reproductive age group and to identify the factors associated with it.

Materials and Methods

Study Design: A cross-sectional study was conducted to assess the prevalence of primary infertility among women of reproductive age. The study was carried out in field practice area of uhtc under department of community medicine, At Darbhanga Medical College and Hospital and Tertiary Care centre, Darbhanga Laheriasarai, Bihar. Study duration is one year.

Study Population: The study included women in the reproductive age group (15–49 years). A total of 84 women who met the inclusion criteria were selected for the study.

Inclusion Criteria

- Women aged 15–49 years
- Married and living with their spouse
- Willing to participate in the study

Exclusion Criteria

- Women with a history of secondary infertility
- Women who were pregnant at the time of data collection
- Women not willing to participate

Sampling Technique: A convenient sampling method was used to select the study participants.

Data Collection Tool and Procedure: Data were collected using a pre-designed and structured questionnaire. The questionnaire included information on socio-demographic characteristics, marital history, reproductive history, menstrual history, and lifestyle factors. Face-to-face interviews were conducted to obtain accurate information.

Operational Definition: Primary infertility was defined as the inability to conceive after at least one year of regular unprotected sexual intercourse.

Sample Size: The total sample size for the study was 84 participants.

Data Analysis: The collected data were entered and analyzed using appropriate statistical methods. Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to summarize the data. The prevalence of primary infertility was calculated as a percentage of the total study population.

Results

A total of 84 women in the reproductive age group (15–49 years) were included in the study.

Socio-Demographic Characteristics: The majority of participants belonged to the age group of 20–30 years, followed by 31–40 years. Most women were homemakers and belonged to middle socioeconomic status. A higher proportion of infertility cases was observed among women with increasing age and longer duration of marriage.

Reproductive and Medical Factors: Among women with primary infertility, common associated factors included irregular menstrual cycles, history of reproductive tract infections, and hormonal disorders. A few participants also reported conditions such as polycystic ovarian syndrome (PCOS) and thyroid dysfunction.

Lifestyle Factors: Lifestyle-related risk factors such as obesity, poor dietary habits, and stress were found to be more common among women with primary infertility. Limited physical activity was also observed among affected participants.

Duration of Marriage: Primary infertility was more prevalent among women with a duration of marriage exceeding 2–5 years, indicating delayed conception despite regular unprotected intercourse.

Summary

The findings of the study indicate that primary infertility is present among a notable proportion of women in the reproductive age group, with multiple socio-demographic, medical, and lifestyle factors contributing to the condition.

Table 1: Distribution of Participants by Age Group (n = 84)

Age Group (Years)	Frequency (n)	Percentage (%)
15–20	10	11.9%

21–30	38	45.2%
31–40	24	28.6%
41–49	12	14.3%
Total	**84**	**100%**

Table 2: Prevalence of Primary Infertility (n = 84)

Infertility Status	Frequency (n)	Percentage (%)
Primary Infertility	9	10.7%
No Infertility	75	89.3%
Total	**84**	**100%**

Table 3: Distribution by Duration of Marriage

Duration (Years)	Frequency (n)	Percentage (%)
< 2 years	18	21.4%
2–5 years	36	42.9%
> 5 years	30	35.7%
Total	**84**	**100%**

Table 4: Menstrual Pattern among Participants

Menstrual Pattern	Frequency (n)	Percentage (%)
Regular	62	73.8%
Irregular	22	26.2%
Total	**84**	**100%**

Table 5: Associated Risk Factors among Infertile Women (n = 9)

Risk Factors	Frequency (n)	Percentage (%)
Hormonal Disorders (PCOS/Thyroid)	3	33.3%
Reproductive Tract Infections	2	22.2%
Obesity	2	22.2%
Stress	1	11.1%
Others	1	11.1%
Total	**9**	**100%**

Table 6: Socioeconomic Status

Socioeconomic Status	Frequency (n)	Percentage (%)
Low	20	23.8%
Middle	48	57.1%
High	16	19.1%
Total	**84**	**100%**

Discussion

The present study assessed the prevalence of primary infertility among reproductive-age women with a total sample size of 84 participants. The findings indicate that primary infertility continues to be a notable reproductive health concern, affecting a measurable proportion of women within this population [4]. The prevalence observed in this study can be compared with global estimates reported by the World Health Organization, which suggest that infertility affects approximately 10–15% of couples worldwide. Although the relatively small sample size in this study may limit generalizability, the results are broadly consistent with trends reported in similar regional and national studies [4,5]. Several contributing factors may explain the prevalence observed in this study population. Increasing age at marriage and delayed conception attempts are important determinants, as fertility declines with advancing maternal age. In addition, lifestyle-related factors such as poor nutrition, obesity, stress, and lack of physical activity may contribute to infertility. Medical conditions like Polycystic Ovary Syndrome, thyroid disorders, and reproductive tract infections are also recognized as significant causes of primary infertility [6]. Sociodemographic characteristics of the participants may have influenced the findings. Women with higher education levels or those residing in urban settings may delay childbearing due to career or social factors, increasing the risk of infertility. Conversely, in rural populations, limited access to healthcare services, lack of awareness, and untreated infections may play a more significant role [7].

It is also important to consider that infertility is not solely a female issue. Male factor infertility contributes to approximately 30–40% of cases[8]; however, this study focused only on women, which may underestimate the overall burden of infertility among couples [8].

Comparison with other studies reveals variations in prevalence rates, which may be attributed to differences in sample size, study design, and diagnostic criteria. The relatively small sample size (n=84) in this study is a limitation and may affect the precision of prevalence estimates. Additionally, reliance on self-reported data and lack of detailed clinical evaluation may introduce bias. Despite these limitations, the study highlights the importance of early detection and management of infertility. There is a need for increased awareness, improved access to reproductive health services, and integration of infertility care into primary healthcare systems[3]. Counseling services and community-based interventions can also help reduce stigma and encourage timely medical consultation [3].

Conclusion

The present study assessed the prevalence of primary infertility among women in the reproductive age group and identified associated factors. The findings revealed that primary infertility was present in 10.7% of the study population, indicating that it is a notable reproductive health concern. The study showed that primary infertility was more common among women with increasing age and longer duration of marriage. Factors such as irregular menstrual cycles, hormonal disorders, reproductive tract infections, obesity, and stress were found to be associated with infertility. Socioeconomic and lifestyle factors also played a contributing role. primary infertility remains an important public health issue that requires early identification and appropriate management. Increasing awareness, promoting healthy lifestyles, and improving access to reproductive healthcare services are essential steps to reduce the burden of infertility. Timely diagnosis and intervention can enhance reproductive outcomes and improve the overall well-being of affected women.

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