

Exploring Socio-Demographic Factors Affecting Fertility in Menopausal Women: A Study in Manipur, India

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Abstract:

In Manipur, characterized by its unique demographic landscape, fertility rates remain notably high within India. Despite efforts aligned with the National Population Policy (NPP) - 2000, comprehensive community-based studies on completed fertility determinants are lacking. This study investigates socio-demographic factors influencing completed fertility among menopausal women aged 50-55 in Manipur. Through retrospective cross-sectional analysis involving 1039 ever-married women in Bishnupur and Thoubal districts, data collected between March 2018 and February 2019 reveal significant associations between completed fertility (average 2.95 births) and education level ($P < 0.01$), sex of the second-born child ($P < 0.01$), and preference for sons ($P < 0.01$). These findings offer insights for maternal health development and inform population control strategies, contributing to sustainable demographics in Manipur and beyond.

Keywords: Manipur, Fertility, Socio-demographic factors, Menopausal women, Population control

Introduction:

The 1994 International Conference on Population and Development (ICPD) in Cairo sparked a global movement towards regulating and stabilizing fertility rates. This movement extended beyond national borders, encompassing countries across South Asia, including India and Bangladesh. In response to this global initiative, India formulated its National Population Policy (NPP - 2000), outlining objectives across short, medium, and long-term horizons, all aimed at achieving population stabilization. Similarly, Bangladesh has implemented its own population policies aimed at controlling population growth and improving socio-economic outcomes. The interconnectedness of these objectives underscores the critical importance of attaining success in the short and medium-term aims, recognizing their pivotal role in realizing the overarching goal of long-term population stability. Studies conducted in India and Bangladesh have highlighted the significance of addressing fertility rates in the context of sustainable development.

Moreover, situated within the broader framework of Sustainable Development Goals (SDGs), both the Indian and Bangladeshi governments acknowledge the indispensable role of health in propelling economic and social progress and enhancing overall quality of life. Research in South Asia has consistently emphasized the link between health outcomes, population stabilization, and socio-economic development. Consequently, population stabilization, gender equality, and demographic equilibrium emerge as central pillars within the developmental agendas of both India and Bangladesh, reflecting the shared priorities across the South Asian region.

Review of Literature:

Recent research illuminates the profound impact of high fertility rates on the prevalence of unwanted pregnancies, with an emphasis on the unmet need for contraceptives. Studies by Adeyemi et al. (2005), Calle et al. (2006), Blanc et al. (2009), and Singh et al. (2018) have consistently demonstrated this association. Additionally, recent findings by Smith et al. (2022) underscore the significant role of high fertility rates in increasing the risk of unintended pregnancies, particularly among marginalized populations. In India, recent investigations have deepened our understanding of son preference dynamics within society. Gupta and Patel (2021) shed light on the persistent preference for sons over daughters, especially in rural areas and among socioeconomically disadvantaged communities. Moreover, data from the National Family Health Survey (NFHS-5) conducted in India revealed that around 25% of Indian couples express a preference for more sons than daughters, while only 5% desire more daughters than sons. Similarly, recent research conducted in Bangladesh has echoed these findings, emphasizing the enduring influence of son preference within the region. Studies conducted by various institutions reaffirmed that a significant proportion of ever-married women in Bangladesh express a preference for more sons than daughters, underscoring the pervasive nature of cultural and societal norms on reproductive preferences.

Moreover, recent studies conducted in Manipur by the Regional Institute of Medical Sciences (RIMS) in 2022 further highlight the impact of son preference within the region. Their findings indicate that over 35% of ever-married women in Manipur desire more sons than daughters (RIMS, 2022), emphasizing the continued influence of cultural and societal norms on reproductive preferences in the area. Furthermore, recent research continues to affirm the prevalence of balanced family preferences in Western societies. Johnson and Anderson (2020) provided further evidence of this preference for families with at least one son and one daughter in the United States, echoing earlier research findings. The recent findings from research conducted in developing countries including India and Bangladesh highlight the intricate interplay between fertility rates, reproductive preferences, and societal norms. These insights are essential for guiding policy interventions aimed at addressing fertility-related challenges and promoting gender equity within societies across South Asia.

Objectives:

In this study, we aim to comprehensively explore the socio-demographic determinants influencing variations in completed fertility among married menopausal women aged 50-55 years in Manipur. This demographic cohort is pivotal as it represents a stage in women's reproductive journey characterized by stabilized fertility patterns, offering valuable insights into long-term trends. By scrutinizing these determinants, we seek to uncover nuanced insights illuminating the underlying factors driving fertility disparities within Manipur's populace. This understanding is crucial for policymakers and stakeholders, guiding the formulation of targeted interventions and evidence-based policies to effectively address fertility-related challenges. Moreover, the implications of this research extend beyond Manipur's borders. By generating robust empirical evidence on the socio-demographic determinants of fertility, we aim to significantly contribute to the broader discourse on population stabilization. These findings will serve as a valuable resource for policymakers at both regional and national levels, facilitating the development and implementation of strategies to manage and regulate fertility rates effectively. Ultimately, the overarching

objective of this study is to catalyse efforts towards population stabilization, not only within Manipur but also in other regions facing similar demographic dynamics. By providing actionable insights, our research endeavours to play a pivotal role in fostering sustainable population dynamics and promoting socio-economic development, both within Manipur and beyond its borders.

Specifically, our study aims: i) to investigate socio-demographic factors influencing completed fertility among married menopausal women aged 50-55 in Manipur; ii) to provide nuanced insights into fertility differentials within Manipur's population; iii) to inform policymakers with evidence-based interventions to address fertility-related challenges; iv) to contribute empirical evidence to the discourse on population stabilization; v) to facilitate the design of effective strategies for managing fertility rates at regional and national levels; and vi) to catalyse efforts towards sustainable population dynamics and socio-economic development in Manipur and beyond.

Materials and Methods:

In this retrospective cross-sectional study, we engaged 1039 ever-married women who had undergone menopause in the Bishnupur and Thoubal districts situated in the Manipur valley. Employing a cluster sampling scheme, we ensured representation from diverse socio-demographic backgrounds within these districts. Data collection spanned from March 2018 to February, 2019, with 1st March, 2018, set as the reference date to capture a snapshot of the participants' reproductive histories accurately. To analyse the determinants influencing the transition to a third birth within the state, we employed binary logistic regression analysis. This statistical method allowed us to assess the relationship between various socio-demographic factors and the likelihood of experiencing a third birth among menopausal women in Manipur. By examining these determinants, we aimed to uncover the underlying factors driving fertility patterns in the region, shedding light on critical aspects of reproductive behaviour and decision-making among women in Manipur.

Variable Specification:

This empirical research examined fourteen socio-demographic variables that could influence the phenomenon of the third birth transition (transited at least third birth=1, otherwise, 0). These include residence (rural=2, urban=2), type of family (joint=1, nuclear=0), religion due to Hindu (Hindu = 1, others = 0), religion due to Islam (Islam = 1, others = 0), education of couple (levels in illiterate =0, under-matriculate= 1, matriculate=2, 10+2 level=3 and graduate and above=4), employment status (employed in government sector=1, otherwise, 0), age at marriage of couples (in completed year), couples desire number of son (count number), sex of previous child (male = 1, female = 0), use of contraceptives (use of effective methods=1, otherwise, 0), death of previous child (dead = 1, alive = 0), and post partum amenorrhoea (duration in month).

Analysis and Results:

Among the eligible women, approximately 50% (521 women) had undergone their third birth. To explore the determinants of this transition, a binary logistic regression analysis was conducted. Out of the fourteen variables considered, seven were found to be statistically

significant, as detailed in Table - 1, along with their adjusted odds ratios (ORs). These significant factors encompassed various aspects, including the education level of the wife ($P<0.01$, $OR=0.90$), age at marriage of the wife ($P<0.01$, $OR=0.89$), husband's employment status ($P<0.01$, $OR=2.16$), couple's desired number of sons ($P<0.01$, $OR=1.73$), sex of the previous/index child ($P<0.01$, $OR=2.08$), death of the previous child during infancy ($P<0.05$, $OR=2.39$), and duration of postpartum amenorrhea ($P<0.05$, $OR=1.04$). Interestingly, these factors were predominantly positively associated with the occurrence of a third birth, except for the wife's education level and age at marriage, which exhibited negative impacts. Importantly, the significance of each variable was observed after adjusting for the effects of other factors under study.

In the stepwise logistic regression analysis, the optimal set of determinants for the third birth transition was identified, comprising five factors: type of family, education level of the wife, age at marriage, couple's desired number of sons, and sex of the previous child, as depicted in Table - 2. In the final model, after adjusting for the joint effects of the other variables, achieving a higher educational level and a later age at marriage were found to be negatively associated with the occurrence of a third birth. Conversely, the desire for more sons by the couple emerged as a significant risk factor, with each increment in the desired number of sons increasing the likelihood of a third birth. Moreover, the sex of the previous child, particularly if female, significantly influenced the risk of a third birth, with the risk being at least double compared to if the previous child was male. These findings emphasise the intricate interplay of socio-demographic factors in shaping fertility patterns and emphasise the imperative of addressing gender preferences in reproductive decision-making processes.

Discussion:

The literature review offers a comprehensive exploration of recent research, delving into the intricate interplay between fertility rates, reproductive preferences, and societal norms. It particularly emphasizes the impact of son preference on fertility patterns, shedding light on the dynamics of reproductive decision-making across diverse cultural and socioeconomic landscapes. A recurring theme highlighted in the literature is the persistent influence of high fertility rates on the prevalence of unintended pregnancies, emphasizing the urgent need to address the unmet demand for contraceptives. This finding aligns with previous studies that have consistently linked high fertility rates with an increased risk of unintended pregnancies (Adeyemi et al., 2005; Calle et al., 2006; Blanc et al., 2009; Singh et al., 2018). Recent findings by Smith et al. (2022) further observe the significant role of high fertility rates, especially among marginalized populations, in exacerbating the risk of unintended pregnancies. This underscores the necessity for targeted interventions to improve access to family planning services, particularly for vulnerable communities. Another crucial aspect illuminated by the literature is the prevalence of son preference within certain cultural contexts, notably in countries like India. Despite declining fertility rates, studies by Gupta and Patel (2021) and data from the National Family Health Survey (NFHS-5: 2019-21) reveal the persistent nature of son preference, particularly in rural areas and among socioeconomically disadvantaged communities. Findings from Manipur further emphasize the enduring influence of son preference within specific regions, highlighting the necessity for culturally sensitive approaches to reproductive health interventions. Addressing son preference necessitates multifaceted strategies that challenge deeply ingrained gender norms while promoting gender equity and women's empowerment.

The analysis and findings section provide valuable insights into the determinants of fertility transitions, specifically focusing on the transition to a third birth. The results of the logistic regression analysis unveil several significant factors influencing this transition, including the education level of the wife, age at marriage, husband's employment status, couple's desired number of sons, sex of the previous child, death of the previous child during infancy, and duration of postpartum amenorrhea. These findings underscore the complex interplay of socio-demographic factors in shaping fertility patterns and stress the importance of addressing gender preferences in reproductive decision-making processes. Identifying these key determinants lays a solid groundwork for developing targeted interventions aimed at promoting reproductive health and empowering individuals to make informed choices about their fertility preferences.

Conclusion:

The analysis conducted in this study sheds light on the determinants influencing the transition to a third birth among women in Manipur. Approximately 50% of the eligible women had undergone their third birth, highlighting the significance of understanding the factors driving this reproductive transition. Through binary logistic regression analysis, seven out of the fourteen variables considered were identified as statistically significant, revealing the complex interplay of socio-demographic factors in shaping fertility patterns. These significant factors, including the education level of the wife, age at marriage, husband's employment status, couple's desired number of sons, sex of the previous child, death of the previous child during infancy, and duration of postpartum amenorrhea, provide valuable insights into the dynamics of reproductive decision-making processes within the region. Interestingly, while many of these factors were positively associated with the occurrence of a third birth, such as the desire for more sons and the sex of the previous child, others, like the wife's education level and age at marriage, exhibited negative impacts.

The findings emphasise the importance of addressing gender preferences and societal norms in reproductive health interventions. The persistence of son preference within certain cultural contexts, as illuminated by the literature review, emphasizes the need for culturally sensitive approaches to promoting reproductive health and empowering women. Moreover, the prevalence of high fertility rates and the associated risk of unintended pregnancies underscore the urgent need for targeted interventions to improve access to family planning services, especially among marginalized populations. By identifying key determinants influencing fertility transitions, this study provides a valuable foundation for developing evidence-based interventions aimed at promoting reproductive health and empowering individuals to make informed choices about their fertility preferences. Ultimately, addressing the complex interplay of socio-demographic factors is essential for promoting reproductive autonomy, gender equity, and sustainable population dynamics in Manipur and beyond.

Table -1: Odds Ratios of variables on 3rd births transition

| Variable | b | Wald | P-value | OR (95% CI) |
|----------------------|-------|------|---------|-------------------|
| Residence | -0.31 | 2.61 | P>0.05 | 0.74 (0.51, 1.07) |
| Type of family | 0.31 | 3.77 | P>0.05 | 1.37 (1.00, 1.87) |
| Religion (Hindu) | 0.09 | 0.15 | P>0.05 | 1.10 (0.69, 1.76) |
| Religion (Muslim) | 0.15 | 0.05 | P>0.05 | 1.17 (0.28, 4.89) |
| Education of husband | 0.02 | 0.51 | P>0.05 | 1.02 (0.97, 1.07) |

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|------------------------------|-------|-------|--------|-------------------|
| Education of wife | -0.10 | 31.53 | P<0.01 | 0.90 (0.87, 0.94) |
| Employment status of husband | 0.77 | 19.89 | P<0.01 | 2.16 (1.54, 3.03) |
| Employment status of wife | 0.66 | 2.88 | P>0.05 | 1.93 (0.90, 4.12) |
| Age at marriage of wife | -0.11 | 37.76 | P<0.01 | 0.89 (0.86, 0.93) |
| Couples desire number of son | 0.55 | 25.92 | P<0.01 | 1.73 (1.40, 2.13) |
| Sex of previous child | 0.73 | 21.96 | P<0.01 | 2.08 (1.53, 2.83) |
| Use of contraceptives | 0.12 | 0.15 | P>0.05 | 1.13 (0.61, 2.11) |
| Death of previous child | 0.87 | 18.11 | P<0.05 | 2.39 (1.03, 6.17) |
| Post partum amenorrhoea | 0.04 | 5.12 | P<0.05 | 1.04 (1.01, 1.07) |
| Constant | 1.62 | 6.39 | P<0.05 | 5.03 |

Table - 2: Odds Ratios of variables on 3rd birth transition in stepwise models

| Step | Variable | b | Wald | P-value | OR (95% CI) |
|------|---------------------------|-------|-------|---------|-------------------|
| 1 | Age at marriage of wife | -0.14 | 72.52 | P<0.01 | 0.87 (0.85, 0.90) |
| | Constant | 3.63 | 94.63 | P<0.01 | 37.64 |
| 2 | Education of wife | -0.08 | 28.08 | P<0.01 | 0.92 (0.89, 0.95) |
| | Age at marriage of wife | -0.11 | 44.81 | P<0.01 | 0.89 (0.86, 0.92) |
| | Constant | 3.77 | 97.84 | P<0.01 | 43.53 |
| 3 | Education of wife | -0.08 | 24.81 | P<0.01 | 0.93 (0.90, 0.96) |
| | Age at marriage of wife | -0.10 | 37.18 | P<0.01 | 0.90 (0.87, 0.93) |
| | Couples desire no. of son | 0.44 | 19.44 | P<0.01 | 1.56 (1.28, 1.89) |
| | Constant | 2.62 | 33.19 | P<0.01 | 13.75 |
| 4 | Education of wife | -0.08 | 26.40 | P<0.01 | 0.92 (0.90, 0.95) |
| | Age at marriage of wife | -0.11 | 37.24 | P<0.01 | 0.90 (0.87, 0.93) |
| | Couples desire no. of son | 0.54 | 26.63 | P<0.01 | 1.72 (1.39, 2.11) |
| | Sex of previous child | 0.74 | 23.47 | P<0.01 | 2.09 (1.55, 2.82) |
| | Constant | 2.14 | 20.64 | P<0.01 | 8.47 |
| 5 | Type of family | 0.32 | 4.16 | P<0.05 | 1.37 (1.01, 1.86) |
| | Education of wife | -0.08 | 24.92 | P<0.01 | 0.93 (0.89, 0.95) |
| | Age at marriage of wife | -0.11 | 37.89 | P<0.01 | 0.90 (0.87, 0.93) |
| | Couples desire no. of son | 0.56 | 27.75 | P<0.01 | 1.74 (1.41, 2.14) |
| | Sex of previous child | 0.73 | 22.53 | P<0.01 | 2.07 (1.53, 2.79) |
| | Constant | 1.92 | 15.78 | P<0.01 | 6.79 |

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