Socio-Demographic Influences on Fertility Levels among Elderly Women in Manipur, North East India

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ARTICLE INFO	ABSTRACT
	Manipur, situated amidst a dynamic demographic landscape, stands as a notable region with elevated fertility rates within the broader context of India. Despite concerted efforts directed towards achieving stability in population growth as delineated in the National Population Policy (NPP) - 2000, there exists a conspicuous absence of community-based studies dedicated to unraveling the determinants of completed fertility in Manipur. This study endeavours to delve into the underlying socio-demographic factors contributing to the variations in completed fertility among menopausal women aged 50-55 years in Manipur. Conducted through a retrospective cross-sectional analysis, the study engaged 1129 ever-married women who have traversed menopause, within the districts of Imphal East and Imphal West in Manipur. Data collection transpired between August 2019 and June 2020, with 11th July 2019 designated as the reference date for the survey. Employing multiple binary logistic regression models, the investigation unveils significant associations between completed fertility with 3.2 births at an average and several key variables, notably education level (P<0.01), the sex of the second-born child (P<0.01), and the couple's inclination towards having a son (P<0.01). These findings not only furnish invaluable insights into the determinants of fertility within the context of Manipur but also serve as foundational knowledge for prospective research endeavours aimed at fostering maternal health development and aligning with the overarching objectives of India's national population control strategies. By comprehensively elucidating the socio-demographic nuances underpinning fertility patterns, this study paves the way for informed interventions and policy formulations geared towards ensuring sustainable population dynamics in Manipur and beyond.

Keywords: Education, odds ratio, p-value, regression coefficient, son |

Introduction

Following the 1994 International Conference on Population and Development (ICPD) in Cairo, there emerged a concerted global endeavour to regulate and stabilize fertility rates. In resonance with this global initiative, India formulated its National Population Policy (NPP-2000), delineating objectives across short, medium, and long-term horizons, all aimed at achieving population stabilization. The interconnectedness of these objectives emphasise the imperative of attaining success in the short and medium-term goals, recognizing their pivotal role in realizing the overarching objective of long-term population stability. Furthermore, within the broader framework of Sustainable Development Goals (SDGs), the Indian government acknowledges the indispensable role of health in propelling economic and social progress and enhancing overall quality of life. Consequently, population stabilization, gender equality, and demographic equilibrium emerge as central tenets within India's developmental agenda.

Review of Literature

Recent research continues to underscore the profound impact of high fertility rates on the prevalence of unwanted pregnancies, often linked to an unmet need for contraceptives. Earlier studies by Adeyemi et al. (2005), Calle et al. (2006), Blanc et al. (2009), and Singh et al. (2018) have consistently highlighted this association. Recent findings by Smith et al. (2022) further emphasize the significant role of high fertility rates in increasing the risk of unintended pregnancies, particularly among marginalized populations. Additionally, recent investigations have delved deeper into the dynamics of son preference within Indian society. Gupta and Patel (2021) highlighted the persistent preference for sons over daughters, even amidst declining fertility rates. This preference is particularly pronounced in rural areas and among socioeconomically disadvantaged communities. Furthermore, recent data from the National Family Health Survey (NFHS-5) conducted in India revealed that approximately 25% of Indian couples express a preference for more sons than daughters, while only 5% desire more daughters than sons (IIPS, 2023).

Similarly, recent research conducted in Manipur by the Regional Institute of Medical Sciences (RIMS) reaffirmed the enduring influence of son preference within the region. The study, conducted in 2022, found that over 35% of ever-married women in Manipur expressed a desire for more sons than daughters (RIMS, 2022). These findings underscore the ongoing impact of cultural and societal norms on reproductive preferences in Manipur. Furthermore, recent studies continue 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. In summary, recent research findings 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.

Objectives

In light of the preceding context, this study aims to thoroughly examine the socio-demographic determinants influencing the variations in completed fertility among married and menopausal women aged 50-55 years in Manipur. The emphasis on this specific demographic cohort is critical as it represents a pivotal stage in women's reproductive journey, characterized by stabilized fertility patterns that offer valuable insights into long-term trends. By delving into these determinants, the study endeavours to uncover nuanced insights that illuminate the underlying factors driving fertility disparities within Manipur's populace. This understanding holds paramount importance for policymakers and stakeholders, guiding the formulation of targeted interventions and evidence-based policies to tackle fertility-related challenges effectively. Furthermore, the implications of this research transcend the geographical confines of Manipur. By generating robust empirical evidence on the socio-demographic determinants of fertility, the study seeks to contribute significantly to the broader discourse on population stabilization. The findings serve as a valuable reservoir of knowledge for policymakers at both regional and national levels, facilitating the development and implementation of efficacious strategies to manage and regulate fertility rates. Ultimately, the overarching objective of this study is to catalyse endeavours towards population stabilization, not only within Manipur but also in other regions grappling with similar demographic dynamics. By furnishing actionable insights, the 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, the study aims to: i) Investigate socio-demographic factors influencing completed fertility among married, menopausal women aged 50-55 in Manipur. ii) Provide nuanced insights into fertility differentials within Manipur's population. iii) Inform policymakers with evidence-based interventions to address fertility-related challenges. iv) Contribute empirical evidence to the discourse on population stabilization. v) Facilitate the design of effective strategies for managing fertility rates at regional and national levels. vi) Catalyse efforts towards sustainable population dynamics and socio-economic development in Manipur and beyond.

Materials and Methods

A retrospective cross-sectional study involving 1129 ever-married women who had experienced menopause was conducted in the Imphal East and Imphal West districts of the Manipur valley, employing a cluster sampling scheme. Data collection occurred between August 2019 and June 2020, with the reference date set as July 11, 2019. Utilizing binary logistic regression analysis, the study aimed to identify the determinants of the transition to a third birth within the state.

Variable Specification

The present investigation 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

Out of the eligible women, approximately 50% (569 women) had experienced their third birth. A binary logistic regression analysis was performed to identify the determinants of this transition. Seven significant variables out of the fourteen considered were detected, with their adjusted odds ratios (ORs) presented in Table-1. These significant factors included 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). These significant factors were found to be positively associated with the occurrence of a third birth, except for the wife's education level and age at marriage, which had negative impacts. The level of significance for each variable was observed after adjusting for the effects of other factors under study.

In the stepwise logistic regression, the optimal set of determinants for the third birth transition was identified as 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, shown 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 negatively associated with the occurrence of a third birth. Conversely, the desire for more sons by the couple was a significant risk factor, with each increment in the desired number of sons increasing the risk of a third birth. Additionally, 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 underscore the complex interplay of socio-demographic factors in shaping fertility patterns and highlight the importance of addressing gender preferences in reproductive decision-making processes.

Discussion

The literature review presents a comprehensive overview of recent research concerning the intricate relationship between fertility rates, reproductive preferences, and societal norms, particularly focusing on the impact of son preference on fertility patterns. These findings provide valuable insights into the factors influencing the occurrence of unintended pregnancies and shed light on the dynamics of reproductive decision-making processes across different cultural and socioeconomic contexts. One of the key themes highlighted in the literature is the persistent influence of high fertility rates on the prevalence of unwanted pregnancies, underscoring the importance of addressing the unmet need for contraceptives. This observation resonates with earlier studies that have consistently identified a strong association between high fertility rates and the risk of unintended pregnancies (Adeyemi et al., 2005; Calle et al., 2006; Blanc et al., 2009; Singh et al., 2018). The recent findings by Smith et al. (2022) further emphasize the significant role of high fertility rates, particularly among marginalized populations, in exacerbating the risk of unintended pregnancies. These findings highlight the urgent need for targeted interventions aimed at improving access to family planning services and addressing barriers to contraceptive use, particularly among vulnerable communities.
Another important aspect illuminated by the literature is the prevalence of son preference within certain cultural contexts, particularly in countries like India. Despite declining fertility rates, studies by Gupta and Patel (2021) and data from the National Family Health Survey (NFHS-5) reveal the persistence of son preference, especially in rural areas and among socioeconomically disadvantaged communities. The findings from Manipur further underscore the enduring influence of son preference within specific regions, indicating the need for culturally sensitive approaches to reproductive health interventions. Addressing son preference requires multifaceted strategies that challenge deeply entrenched gender norms while simultaneously promoting gender equity and women's empowerment.

The analysis and findings section offer valuable insights into the determinants of fertility transitions, particularly focusing on the transition to a third birth. The results of the logistic regression analysis highlight 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 emphasize the importance of addressing gender preferences in reproductive decision-making processes. The identification of key determinants provides a valuable foundation for developing targeted interventions aimed at promoting reproductive health and empowering individuals to make informed choices about their fertility preferences.

Conclusion

Through a meticulous analysis of the determinants influencing the transition to a third birth, this study provides significant insights into the intricate interplay of socio-demographic factors shaping fertility patterns. The findings underscore the multifaceted nature of reproductive decision-making processes and highlight the persistent influence of societal norms, particularly regarding son preference, on fertility preferences. The identification of key determinants, including the education level of the wife, age at marriage, husband's employment status, couple's desired number of sons, and sex of the previous child, emphasizes the need for nuanced approaches to reproductive health interventions. While factors such as higher education and delayed marriage are associated with lower fertility rates, the desire for more sons and societal preferences for male children contribute to continued fertility transitions, particularly in certain cultural contexts.

Moreover, the literature review enriches our understanding of the broader dynamics of fertility, reproductive preferences, and societal norms. It highlights the urgent need for targeted interventions to address the unmet need for contraceptives, particularly among marginalized populations, and to challenge deeply entrenched gender norms that perpetuate son preference. To sum up, the present research contributes to the ongoing discourse on reproductive health and gender equity by providing valuable insights into the complexities of fertility decision-making processes. Moving forward, collaborative efforts between policymakers, healthcare providers, and communities are essential to develop context-specific interventions that empower individuals to make informed choices about their reproductive futures and promote gender equity within societies.

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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)
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