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Factors Associated with Fertility Intention among Women during the COVID-19 Pandemic in Government Hospitals of Kaski District, Nepal

Vijay Aryal, Lecturer
Department of Population Studies, Prithvi Narayan Campus, Pokhara

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Corresponding Author:
Vijay Aryal
Email: vijayaryal@pncampus.edu.np

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Tel.: +977-61-576837
Email: research@pncampus.edu.np
URL: www.pncampus.edu.np

ABSTRACT
COVID-19 has affected the reproductive health of women worldwide. Such effects were mainly on the reduction in child-birth, postponement of fertility plans and loss of lives of mothers and children as well as still births. The paper attempts to examine the factors associated with the impact of the pandemic on fertility intentions of women who are preparing to have a child even if they already had one or more children. Patient exit survey during 9 June 2022 to 8 July 2022 was conducted at selected hospitals among women who have visited an Obstetric and Gynaecological specialist at the Out Patient Department for consultation. Among 138 participant women who provided with oral informed consent to participate, 34 were infected with severe acute respiratory syndrome coronavirus-2 (SARS-COV-2). The number of living children, gender of the children and the educational attainment of the mothers have been found to be significantly associated with change in fertility intention of women. A qualitative study is necessary to ascertain on why the number and gender of children is central to changes in fertility intentions at the times of the pandemic as such.

KEYWORDS: COVID-19, fertility intentions, pandemic, patient exit survey

INTRODUCTION

Since the outbreak of the COVID-19 pandemic, the people's livelihood has been affected, especially, in terms of reproductive health such as fertility preference and family planning (Akinyemi et al., 2022; Kahn et al., 2021; Naya et al., 2021; Roy et al., 2021). After the outbreak of the COVID-19 pandemic, people from all over the world, regardless of their ages and other background, were affected in various ways. In Nepal, during the COVID-19 lockdown, the institutional child birth has significantly been

reduced by more than half (KC et al., 2020). There have been cases where the official code of practice devised by the concerned authority in their localities to establish the necessary facilities has affected people's lives. Obviously, these circumstances prompted officials to reconsider the arrangement of serious concerns about the pandemic situations (Sifris & Ludlow, 2021). For example, many people have been forced to alter their normal way of livelihood and reproductive behaviour.

Postponement of the fertility treatment schedules due to the COVID-19 pandemic generated agony among women (Wedner-Ross et al., 2022) and affected women's mental health severely (Gordon & Balsom, 2020) which required those women with appropriate psychotherapy (Kaur et al., 2020). Likewise, COVID-19 has had an impact on the financial and psychological aspects of the fertility seeking populations (Aryal, 2022). However, the determination of medium-term fertility among women did not have any effect on the pandemic (Emery & Koops, 2022).

The pandemic has generated a situation of disproportionate health and social services (Lindberg et al., 2020) on geographical, political as well as a residential basis. Communities that are capable of generating and managing on their own at the community level could have smaller impact as compared to the others. However, the fertility intention of women seeking fertility was affected by the restrictions of medical services created by the pandemic situations (Chu et al., 2022).

COVID-19 tested pregnant women have been found to have a significant prospects of having premature delivery (Elsaddig & Khalil, 2021) and therefore their later stage of pregnancy needs special consideration to overcome potential complications. However, changes in fertility intentions from long term to short term intentions are found to be more likely among childless men and women, especially, who have been running short of time in terms of their active childbearing span getting too short (Wagner et al., 2019).

The situation of limited access to every resource caused many problems for women of reproductive age, who required fertility treatment or simply who were planning to conceive or deliver a healthy child. This paper attempts to explore the determinants of fertility intentions among women of reproductive age during the COVID-19 pandemic.

METHODOLOGY

This study has employed cross-sectional descriptive research design. Patient exit survey at the Out Patient Department (OPD) of the hospital (Pokhara Academy of Health Sciences-PAHS) was conducted during the period from 9 June 2022 to 8 July 2022 for the collection of data. Research participants were the 198 married women of reproductive ages-pregnant or preparing to conceive, who exit the OPD after consultation with the Obstetric and Gynaecological (OBG) specialists. Out of 198 clients contacted, who reported to have fertility intentions, 60 were not willing or did not have sufficient time to participate. Eventually, 138 participants were interviewed for complete information required for the study. Among those interviewed, 34 participants were infected with SARS-COV 2, while 104 were not infected; 103 had fertility intention before the outbreak of the pandemic and 38 of those with fertility intentions changed the intention, especially postponed, due to the impact of COVID-19. Oral (informed) consent was taken from each participant prior to the interview.

Semi-structured questionnaires were prepared on the factors associated with COVID-19 among women with fertility intentions based on the WHO guidelines (WHO, 2020). Data obtained were analysed using the IBM SPSS Statistics (Version 23) predictive analytics software. The background characteristics have been presented in

frequencies and percentages. Similarly, a chi-square test has been employed for selected variables.

RESULTS

The socio-demographic characteristics are summarised in Table 1. The participants of the research were the currently married women of reproductive ages, who have either had at least one live birth or have a plan to bear a child sooner or later. The data revealed that the majority of the participants were aged between 20 and 30 years. More than half of the participants had given birth to their first child before reaching the age of 20 years. However, the average age of the participant women was 23.62 years, while their average age at first conception was 21.51 years. Likewise, nearly one-third of the participants had no child born and were preparing for their first child, while more than two-third already had at least one child. Among those who had at least two children with them, 36.4 per cent (not shown in table) had both male and female children and still want another one. Here, a participant having a male and a female child means if a woman has at least two children, she might have a son and a daughter or a son and two or more daughters or a daughter and two or more sons. Likewise, the male and female categories indicate that a woman had at least a son and at least a daughter respectively. The gender aspect of the family leadership indicates that 46.4 per cent participants represented female-headed families, while 53.6 per cent belonged to the families lead by a male member.

The socio-economic characteristics of the participants demonstrate the diverse nature of the samples selected. Regarding the educational attainment of the participants, almost one in six received school education below secondary level, one-fourth had secondary or above, whereas 18.1 per cent did not have formal education. Every two among five were employed at the time of the survey and the remaining ones were homemakers or simply not employed. Among the employed, they were working as agricultural workers, non-agricultural workers, and school teachers at local schools, manual workers as daily wage labourers and domestic workers as cleaning assistants at other peoples' homes. The majority of the participants (75.4%) were from nuclear families and only one-fourth participants represented a joint family (Table 1).

Ethnicity comprised of higher caste, Janajati, Dalit and others. The higher caste group included Brahmin and Chhetri, while Gurung, Magar, Rai, Limbu and Newar represented Janajati group. Likewise, Dalit included Kami, Damai, Sarki, Pode and the others category of caste/ethnicity covered the remaining caste groups not included among the above groups, such as Muslims, and the Terai castes. Of the selected participants, more than sixty per cent were from higher caste groups, Janajati groups included one in every four, Dalit community woman was one in ten and a very negligible proportion among others included a Muslim and a Terai caste woman. In terms of their religious affiliation, 60.1 per cent women were Hindus, 28.3 per cent were Buddhists and 11.6 per cent were in others group comprising Muslims, Kirants and Christians. The monthly income of Rs. 36,500 was considered as the threshold for a family, which is the equivalent value of the reference figures of the per capita GDP for Nepal for the year 2021 estimated by the Asian Development Bank (Asian Development Bank, 2022). The average income of the participants with an income (inclusive of their spouse's income, if any) less than this income value was Rs. 32,100 with the standard deviation value of 2,340. This proportion (58.7%) was higher than the proportion of participants earning Rs. 36,500 or more (41.3%) per month. The average income of the participants with monthly earnings of Rs. 36,500 or more was Rs. 41,900 (SD=3,350). The majority of them represented rural areas (65.9%). The major source of information on the COVID-19

pandemic, as revealed by the participants, was social media (89.9%) followed by audio-visual media (73.2%), peer groups (31.9%), local health personnel (21.0%) and print media being the least popular (17.4%) among the participants (Table 1).

Table 1
Background Characteristics of Women who had Fertility Intentions

Demographic Characteristics	**(N, row %) or (mean, SD)**	
Age	**23.62**	**4.5**
<20 years	18.31	1.2
20-30 years	22.47	2.1
>30 years and above	30.98	0.6
Age of mother at first child	**21.51**	**1.7**
20 years or Less	18.7	1.1
Above 20 years	22.1	2.0
No of living children		
No child	44	31.9
One child	72	52.2
Two children	17	12.3
Three or more children	5	3.6
Gender of the child (N=94)		
Male	41	43.6
Female	45	47.9
Male and Female	8	8.5
Gender of family head		
Female	64	46.4
Male	74	53.6
Socio-economic Characteristics	**(N, row %) or (mean, SD)**	
Education		
No formal education	25	18.1
Below Secondary level	81	58.7
Secondary or above	31	23.2
Occupation		
Employed	54	39.1
unemployed/home-maker	84	60.9
Family type		
Nuclear	104	75.4
Joint	34	24.6
Ethnicity		
Higher	85	61.6
Janajati	36	26.1
Dalit	15	10.9
Others	2	1.4
Monthly income (with spouse' income)		
Less than Rs. 36,500	32,100	2,340
Rs. 36,500 or more	41,900	3,350
Place of residence		
Rural	91	65.9
Urban	47	34.1
Exposure to information (Multiple responses possible)		
Print media	24	17.4

Audio-visual media	101	73.2
Social media	124	89.9
Peer groups	44	31.9
Local health personnel/s	29	21.0

Note. The total number of the participants is N=138, except otherwise stated for certain category/ies.

The nominal variables are expressed in frequencies and row percentages, while the ratio or interval variables have mean and standard deviation.

Source: (Aryal, 2022)

The factors associated with the socio-demographic characteristics were analysed with respect to three groups of the participants, which include COVID infected, having fertility intentions before the outbreak of COVID-19 and among those who changed their fertility intentions due to the pandemic. Among the participants who were infected with the virus, the variables, number of living children, occupation of the participants, income of the participants including their spouse' and the place of residence were found significant. Similarly, fertility intention of the participant women prior to the pandemic was significantly associated with the age of mothers at their first child born, gender of children, education, monthly income and the place of residence. However, the number of living children, occupation, family type, and ethnicity showed no association. The change in fertility intention of the participant women had a significant association with the number of living children, their gender and the educational attainment of the mothers. The other variables such as occupation, type of family, ethnic background, income and the place of residence did not reveal any significant association with the change in fertility intentions (Table 2).

Table 2

Socio-Demographic Characteristics of Women Tested Positive With COVID-19 Virus, Their Fertility Intentions Prior to the Pandemic and Change in Fertility Intentions

Variables	Infected with COVID (n=34)	Had fertility intention prior to COVID (n=103)	Fertility intention changed (n=38)
Age of mothers at first child	**χ^2=0.275 (*p*=0.600)**	**χ^2=0.336 (*p*=0.012)**	**χ^2=0.302 (*p*=0.583)**
20 years or less	22 (28.6%)	56 (54.4%)	22 (57.9%)
Above 20 years	12 (19.7%)	47 (45.6%)	16 (42.1%)
No of living children	**[a]F=2.762 (*p*=0.001)**	**χ^2=3.652 (*p*=0.311)**	**[a]F=7.225 (*p*=0.032)**
No child	9 (20.5%)	29 (28.2%)	16 (42.1%)
One child	15 (20.8%)	57 (55.3%)	15 (39.5%)
Two children	6 (35.3%)	14 (13.6%)	6 (15.8%)
Three or more children	0 (0.0%)	3 (2.9%)	1 (2.6%)
Gender of children	**χ^2=0.739 (=0.864)**	**χ^2=7.063 (*p*=0.001)**	**χ^2=7.368 (*p*=0.016)**
Male	10 (43.5%)	35 (47.3%)	8 (36.4%)
Female	12 (52.2%)	35 (47.3%)	13 (59.1%)
Male and Female	1 (4.3%)	4 (5.4%)	1 (4.5%)
Education	**χ^2=2.124 (*p*=0.346)**	**χ^2=4.889 (*p*=0.017)**	**χ^2=3.501 (*p*=0.014)**

No formal education	9 (26.5%)	23 (22.3%)	5 (13.2%)
Below Secondary level	18 (52.9%)	57 (55.4%)	25 (65.8%)
Secondary or above	7 (20.6%)	23 (22.3%)	8 (21.1%)
Occupation	**χ^2=0.471 (*p*=0.002)**	**χ^2=0.078 (*p*=0.790)**	**χ^2=0.611 (*p*=0.434)**
Employed	15 (44.1%)	41 (39.8%)	17 (44.7%)
Unemployed/home-maker	19 (55.9%)	62 (60.2%)	21 (55.3%)
Family type	**χ^2=0.554 (*p*=0.457)**	**χ^2=8.384 (*p*=0.054)**	**χ^2=0.000 (*p*=0.996)**
Nuclear	24 (70.6%)	84 (81.6%)	31 (81.6%)
Joint	10 (29.4%)	19 (18.4%)	7 (18.4%)
Ethnicity	**χ^2=5.365 (*p*=0.147)**	**χ^2=1.186 (*p*=0.756)**	**χ^2=5.7 (*p*=0.129)**
Higher	16 (47.1%)	62 (60.2%)	21 (55.3%)
Janajati	13 (38.2%)	28 (27.2%)	9 (23.7%)
Dalit	5 (14.7%)	12 (11.6%)	8 (21.1%)
Others	0 (0%)	1 (1.0%)	0 (0%)
Monthly income (including spouse')	**χ^2=0.616 (*p*=0.032)**	**χ^2=3.136 (*p*=0.007)**	**χ^2=0.073 (*p*=0.787)**
Less than Rs. 36,500	18 (52.9%)	56 (54.4%)	20 (52.6%)
Rs. 36,500 or more	16 (47.1%)	47 (45.6%)	18 (47.4%)
Place of residence	**χ^2=0.351 (*p*=0.004)**	**χ^2=10.692 (*p*=0.001)**	**χ^2=1.08 (*p*=0.298)**
Rural	21 (61.8%)	60 (58.3%)	20 (52.6%)
Urban	13 (38.2%)	43 (41.7%)	18 (47.4%)

Note. [a] represents the values for Fisher's Exact test when the cells have frequencies less than 5, Chi square test is avoided.
The values for each variable in corresponding columns represent Chi-square values, while p-values in the parentheses.
Source: Field Survey, 2022.

DISCUSSION

The results of this research provide supporting evidence that the change in fertility intentions is associated with the effects of the pandemic with respect to the children women already had and their gender. Fertility intentions of women revealed that the gender of children they had mattered in making decisions on preparing for another child. Women with male children had lower chances of intending further child as compared to a female child. These results are consistent with research results of Pollard and Morgan (2002), (Zimmerman et al., 2022) and (Emery & Koops, 2022) that deal with the gender preference made by the couple being affected by the gender composition of the existing children.

The number of children living with the couple has also been found to play a significant role regarding their fertility intentions. Here, the data revealed that higher the number of children higher the chances of changing or postponing the fertility intentions by the women. This finding is consistent with the findings of Zhuang et al. (2020) and

(Fostik & Galbraith, 2021), which conclude that the number of children women intended was indirectly proportional to the number of children they already had.

Fertility intentions prior to COVID-19 were changed by the women with higher level of educational attainment. Women with less or no education were found to prefer more children. These women indicated towards the health security of a child as more children they have would ensure of having at least a child with them even after the death of some. A study conducted by Channon and Harper (2019) revealed that fertility preferences are declining among educated women, which revealed that among the women with higher education the change in fertility intentions were lower specify that they have intentions to have a child even if they lose some of them at the time of the pandemic as such. This could also be due to the reason that the biological clock (Wagner et al., 2019) might not offer any opportunity in the future to conceive if the pandemic prolongs unpredictably, this condition has also been reported in the populations of low fertility societies as revealed by (Fostik & Galbraith, 2021). However, it has also been found recently that higher the age group and higher the level of education, the couple are less likely to have fertility intentions (Ahinkorah et al., 2021).

The study demonstrates that the socio-demographic factors have been responsible in determining the fertility intentions among women seeking fertility at the time of crisis or uncertainty. The study conducted by (Akinyemi et al., 2022) among Nigerian women have similar results and stated that the fertility intentions have been influenced by "some social consequences of COVID-19" (p. 2). The findings of the study have been consistent with previous studies as fertility intention changes among women can be considered to be caused by the uncertain future due to pandemics or similar situations such as economic recession (Aassve et al., 2021), health and financial situation of a person (Hašková et al., 2019).

ETHICAL CONSIDERATIONS

The ethical clearance and approval was obtained from the Centre for Research and Innovation (CRI), Prithvi Narayan Campus, Pokhara. All participants were informed of the study objectives and oral informed consent was obtained prior to the collection of data. Participants' involvement in the study was entirely voluntary and they were informed of their choice to quit their participation any time if they did not want to continue any more. Confidentiality was maintained in participants' personal information and the data was employed for research purpose only.

STRENGTHS AND LIMITATIONS

This patient exit study offers an assessment on the factors associated with COVID-19 pandemic on fertility intentions of fertility seeking women of reproductive age groups. The semi-structured questionnaire along with female enumerators provided participants with perseverance in responding to study questions on fertility intentions at COVID-19 times.

The study included fertility seeking women who visited the OPD for OBG at the government hospital only. Moreover, the fertility intentions reported by the participant women might have chances of under – or over – reporting their fertility intentions at the pandemic times.

CONCLUSION

COVID-19 pandemic has affected every section of the population worldwide. The findings of the study revealed that the factors that determine the changes in fertility intentions of women preparing for a new baby during the times of the COVID-19

pandemic were the number of children they had so far as well as the places where they lived. Moreover, the gender of the child had also plays an important role in determining change in fertility intentions of women during the times of the pandemic.

Fertility intentions are women's own perceived experiences, which cannot be underestimated with regard to the future population. The present study focuses on the factors that affect fertility intentions of women to change at COVID-19 times and revealed significant association with some socio-demographic variables. A detailed qualitative study seems to be essential on identifying why the number and gender of children has been crucial in having changes in fertility intentions at the critical times of their lives.

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