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College Students' Attitudes and Knowledge Regarding Infertility

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ABSTRACT

Infertility is defined as the inability to conceive after 12 months or more of regular unprotected sexual intercourse. It is considered a serious reproductive health problem that is increasing in recent days. However, it is not given much attention. This study aims to find out and compare the knowledge and attitudes of college students by gender towards infertility using descriptive and inferential statistical methods.

A cross-sectional survey was conducted among 165 college students studying at the Bachelor in Education at Mahendra Ratna Campus, Kathmandu. Data were collected using a structured questionnaire. Chi-square tests, and other inferential statistics were used to explore the relationships and differences between the variables.

The majority of respondents were female (73.9%) and unmarried (87.3%). All respondents had heard of infertility, but misconceptions still persisted, with 38.5% of women and 20.9% of men believing that infertility is only a female problem. The majority (85.5%) believed that infertility can be treated. There is some disparity in misconceptions and attitudes according to gender. Religious and cultural influences were evident, with 33.3% non-Hindus and 20.6% Hindus having a modest association between religion and cultural or religious influences on infertility treatment ($\chi 2 = 11.886$, $p = 0.018$, phi = 0.268), but no statistically significant association between gender and misconceptions toward infertility ($\chi^2 = 7.418$ and p-value = 0.060).

Despite a general understanding of infertility among college students, misconceptions and gender disparities persist. Further education and public awareness about infertility, including its inclusion in school and university curriculum and public awareness campaigns that emphasize social support are needed to increase education and public awareness about infertility.

College Students' Attitudes and Knowledge Regarding Infertility

Infertility is a reproductive health condition that prevents a person from becoming pregnant. After 12 months or more of consistent, unprotected sexual activity, it is unable to conceive (WHO, 2023). These days, infertility is a growing problem in Nepal. In the past five years, almost 35,000 people have dealt with infertility issues (Poudel, 2023). Lack of knowledge about infertility risk factors and their causes is the main cause of the high infertility rate. To prevent and reduce the prevalence of infertility, it is necessary to assess the knowledge of students and educate them about infertility and risk factors. Despite much research, young people's views and awareness of infertility have not been various; studies have shown that this problem has been on the rise for the past few years. It has been speculated that the current modern lifestyle, diet, and reproductive health may be an important reason for the increase in infertility. Infertility has a great impact on personal life, family life, and social life, so it is important to have good knowledge and understanding about it (Ombelet et al., 2008). A reproductive health condition known as infertility occurs when a woman cannot conceive after a year of unprotected sexual activity. Infertility problems have affected 35,000 people in Nepal over the last five years. Ignorance of risk factors is blamed for the high infertility rate. Assessing students' knowledge and educating them about infertility and risk factors are essential to lowering prevalence. Even in the university level courses in Nepal, the topics related to this issue are not included with such importance, which may lead to a lack of knowledge related to such health problems among higher class students. Since higher class students are of the reproductive age, it is also necessary for them to know that some infertility related problems may also be due to own activities and negligence. Therefore, it is necessary for the government, health care providers, and researchers should emphasize developing appropriate strategies, research, education, and awareness creation of infertility, and it’s potential. Awareness among both married and

unmarried individuals regarding infertility as a medical concern is essential for understanding the etiology of infertility and implementing preventative measures. This heightened awareness can also facilitate accurate diagnosis by infertility experts, thereby enhancing the effectiveness of treatment. The government, health care providers, and researchers should emphasize developing appropriate strategies, research, education, and awareness creation of infertility and its potential causes (Akalewold et al., 2022). Higher educational institutions students in Nepal are ignorant of infertility, which could be the result of carelessness or personal activities. The government, medical professionals, and researchers should concentrate on creating policies, conducting studies, educating the public, and raising awareness of infertility in order to address this. This will aid in determining its cause, putting preventative measures into place, facilitating precise diagnosis, and improving the efficacy of treatment. Very little thorough research on infertility-related topics has been found in Nepal. In my study, previous research has not studied the knowledge and attitudes of college students about infertility. Therefore, this study is important because it also helps to examine the knowledge and attitudes among college students of reproductive age about infertility. This study can also make an important contribution to raising awareness about the problem of infertility that may increase in the future. This study explores college students' knowledge and attitudes towards infertility in university level, highlighting the need for further research to raise awareness about this growing issue.

Objectives of the Study

The specific objectives of this study were as follows:

To find out the level of knowledge and attitude of infertility among college students.

To compare the gender wise attitude towards infertility among college students.

Research Hypothesis

On the basis of above stated objectives the following research hypothesis were formulated:

College students possess a moderate to limited understanding of infertility

College students possess greater awareness of the causes of infertility than of its treatments.

Infertility is viewed more sympathetically and intelligently by female college students than by male students.

Research Methods

This study was based on a cross-sectional survey design based on quantitative data. Mahendra Ratna Campus Tahachal was selected as the study area as a constituent campus offering bachelor in education large no. students in Kathmandu district. There are a total no. of 282 students enrolled in the third and fourth years of the B.Ed program in Population Education at Mahendra Ratna Campus, Tahachal. The sample population of this study, selected from these students, includes 165 undergraduate students in Population education. The sample size of 165 was determined by targeting a 95% confidence level with a 5% margin of error of the using Yamane's formula sample size (n) = N / (1 + Ne2). To ensure that each student has an equal opportunity to participate, a simple random sampling technique was applied, which enhances the reliability and generalizability of the findings.

In this paper dependent variables are Knowledge levels and Attitude toward infertility. (Awareness, understanding of infertility causes, treatments, societal support, lifestyle impacts and cultural/religious influence) and independent variables are demographic factors of the respondents. (Age, gender, marital status, religion). The collected data was categorized as per the needs, and unnecessary data was removed. And try to make it errorless.

The required data were entered into SPSS, and descriptive analysis was done by tabulating the main demographic characteristics of the respondents, such as age, gender, marital status, religion, knowledge, and attitude towards infertility. Inferential tests were conducted to find out the relationship between the variables. SPSS software was used to conduct a chi-square test to examine the relationships between categorical variables such as misconceptions about gender and infertility, such as religious status and socio-cultural influences on infertility. This study seems at how attitudes and knowledge about infertility relate to demographic variables like age, gender, marital status, and religion. Using SPSS, the data was categorized and analyzed. To investigate the connection between categorical variables and infertility, chi-square and inferential tests were performed.

Results

The results of this study conducted on a sample of 165 college students regarding their knowledge and attitude of infertility are presented in this section. The data related to demographics, level of knowledge and attitude towards infertility are presented in tables, interpreted and analyzed using numbers, percentages and various statistical methods.

Table 1.

Demographic indicators of the Respondents

Variables	Categories	Frequency	Percentage (%)
Age	20–29 years	165	100.0 (Mean age 22.6 years)
Gender	Female	122	73.9
	Male	43	26.1
Religion	Hindu	126	76.4
	Buddhist	29	17.6
	Islam	6	3.6
	Kirant	4	2.4
Marital Status	Unmarried	144	87.3
	Married	21	12.7

This data presents the details of the demographic status like: age, gender, religion and marital status of the respondents related to infertility. The age of the participants ranged between 20–29 years, with a mean age of 22.6 years. By gender, 73.9% of the respondents

were female while 26.1% were male. By religion, the majority of the respondents were Hindu (76.4%). Furthermore, 17.6% were Buddhist, 3.6% were Muslim, and 2.4% were Kirat. In terms of marital status, the majority of the respondents were single (87.3%) while only 12.7% were married. This data shows that mainly young, single and Hindu participants participated in the study.

Table 2.

Knowledge of Infertility

Variables	**Categories**	**Female (%)**	**Male (%)**	**Total (%)**
Meaning of Infertility	Not having children	36.1	44.2	38.2
	Infertility is a problem for both men and women	56.6	46.5	53.9
	A kind of disease in females	4.9	9.3	6.1
	I don't know	2.5	0.0	1.8
Causes of Infertility	Age at marriage	71.9	43.6	52.1
	Contraceptive use	39.6	28.2	29.7
	Alcohol and tobacco consumption	35.4	46.2	31.5
	Obesity	26.0	2.6	15.8
	STDs	39.6	51.3	35.2
	Hormonal changes/PCOs	59.4	46.2	45.5
	Stress and busy life	20.8	46.2	23.0
Infertility Can Be Treated	Yes	90.2	72.1	85.5
	I don't know	9.8	27.9	12.7
Treatments of Infertility	Medication	60.5	62.8	63.5
	IVF (In Vitro Fertilization)	46.2	34.9	44.9
	IUI (Intrauterine Insemination)	21.0	9.3	18.6
	Fertility drugs	33.6	27.9	33.3
	Hormone replacement therapy	37.0	27.9	35.9
	Traditional treatments (Dhami/Jhankri, Bhakal)	18.5	9.3	16.7
	Lifestyle change	41.2	32.6	40.4
Infertility Diagnosed Period	6 months	28.7	41.9	31.5
	12 months	45.1	30.2	41.2
	18 months	19.7	20.9	18.8
	24 months	6.5	7.0	6.1
Importance of educating about infertility	Starting from school education	70.5	58.1	67.3

The data in this table shows the knowledge, understanding and perception of infertility among women and men regarding the meaning, causes, treatment methods and the time of diagnosis of infertility. Regarding the meaning of infertility, 36.1% of women said "not having children" while 44.2% of men accepted it. The percentage of those who consider infertility a problem for both women and men is 56.6% among women and 46.5% among men. However, the percentage of men who consider it "a disease only in women" is 9.3% among men and 4.9% among women. The main cause of infertility is the age of marriage, which is stated by 71.9% of women and 43.6% among men. The opinion that "hormonal changes/PCOS" is 59.4% among women and 46.2% among men. "Long-term stress and busy lifestyle" was mentioned by 46.2% of men, while this figure is only 20.8% among women. Among other reasons, obesity was considered a problem by 26% of women and 2.6% of men. 90.2% of women and 72.1% of men believed that infertility treatment was possible. Medicine received the highest recognition among treatments (63.5%).

Similarly, IVF was considered effective by 46.2% of women and 34.9% of men. In addition, lifestyle changes were also accepted by 41.2% of women and 32.6% of men. When infertility is diagnosed, 45.1% of women and 30.2% of men believe that infertility is diagnosed within 12 months. However, 28.7% of women and 41.9% of men know within 6 months. A majority of women (70.5%) and 58.1% of men believe that infertility education should start in school. This indicates that women are more likely to include infertility education in school curriculum to educate young people about infertility (70.5%), as well as through social awareness programs (32.6%). These findings highlight the need for a comprehensive educational approach. This data shows that women and men have different understandings of the meaning, causes, and treatments of infertility. Women appear to be more aware of various aspects of infertility, while men appear to be somewhat cover behind.

Table 3.

Attitudes toward Infertility

Variables	Categories	Female (%)	Male (%)	Total (%)	Chi-Square (χ^2)	p-value
Gender* Misconceptions About Infertility	It only affects women	38.5	20.9	33.9	7.418	0.060
	Infertility is easily treated	15.6	30.2	19.4		
Gender* Infertility is a Female Problem	Strongly agree	5.7	11.6	7.3	3.788	0.435
	Neither agree nor disagree	41.0	27.9	37.6		
		Hindu (%)		Non-Hindu (%)		
Religious * Cultural Influence	Strongly influence	20.6		33.3	11.886	0.018* (Phi=0.268)
	Moderately influence	15.9		28.2		

This data shows how much the misconceptions and perceptions related to infertility differ with gender and religious-cultural influences. The misconception that "infertility only affects women" is 38.5% among women and 20.9% among men. When the chi square test was performed to see whether the difference in percentages in this fact is statistically significant, Chi-Square (χ^2) = 7.418 and p-value = 0.060 were obtained, which is above 0. 05, so although the percentage difference is seen, it is not statistically significant. Similarly, 15.6% of women and 30.2% of men seem to agree that "infertility can be easily treated." 5.7% of women and 11.6% of men seem to "strongly agree" with the belief that "infertility is only a problem for women." However, those who said "neither agree nor disagree" are 41.0% among women and 27.9% among men. When looking at whether this perception is statistically significant, the chi square test (χ^2) = 3.788 and p-value = 0.435 are obtained, which indicates that there is no significant difference based on gender.

Similarly, in terms of religious-cultural influence, 20.6% in the Hindu community said that cultural influence "has a moderate impact" while 33.3% in the non-Hindu community said that it "has a moderate impact". When looking at the statistical relationship between religious background and the difference in the perspective towards infertility, the chi square test shows Chi-Square (χ^2) = 11.886, and p-value = 0.018, which shows that cultural influence differs significantly according to religious community. When looking at the how strong of this relationship calculate the phi value, the (phi value = 0. 268) value shows that there is a modest relationship. What is clear from this is that misconceptions about infertility vary based on gender and religious-cultural influences. Although misconceptions are particularly prevalent among women, cultural influences are relatively greater in non-Hindu communities**.**

Discussion

This study sheds light on the knowledge and attitudes of Nepali college students towards infertility, highlighting both the high level of awareness and prevalent misconceptions about reproductive health issues. The research found that almost all participants had heard of infertility. Findings from chi-square tests and cross-tabulation analyses shed light on the relationship between gender and various aspects of infertility, such as misconceptions, causes, and treatment options. Although there were some differences between female and male respondents in the relationship between gender and misconceptions about infertility, the chi-square test, especially considering the belief that it is primarily a women's issue, did not reveal any statistically significant differences ($\chi2 = 7.418$, $p = 0.060$). This merely reflects gender stereotyped thinking, which has also been documented in other studies. For example, a study by Akalewold et al. (2022) found in Ethiopia that similar misconceptions exist, especially in societies where reproductive health issues are stigmatized. Despite high awareness, a significant proportion of respondents (38.2%) still associate

infertility, specifically the inability to have children. Women blamed age at marriage, hormonal changes, and obesity on physical factors, while men blamed stress, alcohol abuse, sexually transmitted diseases, and sexually transmitted infections. This result suggests that there are gender-based differences in the biological and non-biological causes of infertility. Most college students understand that infertility affects both men and women, according to the data, which shows that their knowledge of the condition ranges from basic to moderate. Nonetheless, there were clear gender differences, with 56.6% of women acknowledging that infertility affects both sexes. This suggests that women were more exposed to reproductive health education or invested in reproductive health issues, which is in line with findings from other studies (Ali et al., 2011; Tabong & Adongo, 2013). But a sizable percentage of those surveyed had misconceptions. 6.1% of respondents thought infertility was a condition that only affected women. This misconception, which reflects enduring gender biases in perceptions of reproductive health, was slightly more common among men (9.3%) than women (4.9%). These results are consistent with earlier studies showing that, according to societal and cultural narratives, women are frequently blamed for infertility (Dudgeon & Inhorn, 2004).

Gender differences in attitudes were also discernible. Interestingly, the result was not statistically significant ($p = 0.060$) even though more women (38.5%) than men (20.9%) agreed with the misconception that infertility only affects women. However, this is significant because it reflects deeply rooted social norms that attribute a disproportionate amount of the blame for infertility to women, a conclusion supported by multiple international studies (Inhorn, 2003). Infertility is also easily treatable, according to 30.2% of men and 15.6% of women. This could be a sign of optimism or ignorance regarding the intricacy, expense, and psychological effects of infertility treatments. Although a higher percentage of men (11.6%) strongly agreed with the statement than women (5.7%), the belief

that infertility is exclusively a female problem was not statistically significant across genders ($p = 0.435$). These ideas highlight ingrained gender biases and the necessity of educational initiatives that cater to both men and women.

The majority of participants (85.5%) thought that infertility could be cured, with more women (90.2%) than men (72.1%) holding this opinion. But there was only a moderate level of knowledge about particular treatment options like hormone therapy, IVF, and IUI. For example, 37% of women and 27.9% of men were aware of hormone replacement therapy, whereas 46.2% of women and 34.9% of men recognized IVF as a treatment option. Similar to earlier research highlighting gaps in young people's knowledge of assisted reproductive technologies, these findings indicate a limited but growing understanding of the medical treatments available for infertility (Boivin et al., 2007). Particularly concerning is the 18.5% of women who report continuing to believe in traditional treatments like those provided by Dhami/Jhankri or Bhakal. This implies that traditional healing methods continue to be effective, particularly in areas where cultural beliefs are still strongly ingrained or where reproductive health education is inadequate (Donkor & Sandall, 2007). Similarly, infertility treatment with drugs and modern techniques such as IVF and lifestyle changes is considered to be highly effective. However, there is some difference in the choice of treatment options between men and women. Poudel (2023) also found that the increasing demand for assisted reproductive technologies (ART) such as IVF and IUI in Nepal reflects the growing awareness of the social importance of infertility. In many ways, this indicates a lower awareness of infertility compared to men. This highlights the need for more comprehensive education on the causes and wider implications of infertility. The influence of gender and marital status on knowledge and attitudes towards infertility was also evident in the study. Female participants and married individuals were found to have significantly higher awareness and more positive attitudes towards infertility. These results are consistent with the

findings by Ombelet et al. (2008), who observed that women and those with direct experience or proximity to infertility had a more empathetic perspective and a greater understanding of its emotional and social implications.

The impact of religious and cultural background on attitudes toward infertility was arguably the most statistically significant finding. Compared to Hindu respondents, non-Hindu respondents were more likely to believe that cultural beliefs affect infertility ($p = 0.018$, $\varphi = 0.268$). Despite being small, the relationship highlights how religious and cultural narratives influence how people view health and illness, including infertility (Stephenson & Wagner, 1993). Due to stigma and a delay in seeking medical attention, infertility may be viewed in some cultures as a curse or a form of divine retribution (Tabong & Adongo, 2013). Analysis of religion and cultural influence showed that there was a significant difference ($\chi^2 = 11.886$, $p = 0.018$). Cultural influence was more pronounced among Hindus (33.3%) compared to non-Hindus (20.6%). Women (70.5%) were more likely than men (58.1%) to support the notion that infertility education should start in schools, with the majority of students (67.3%) agreeing. This indicates that young people generally understand the value of early reproductive health education. Dispelling myths, lowering stigma, and fostering gender-equitable attitudes toward fertility could all be achieved by incorporating infertility education into school curricula (Bunting et al., 2013). This suggests that religion also plays an important role in shaping perceptions of infertility. The majority of respondents agreed that education on infertility should be provided to young people at the school level. This highlights the importance and relevance of infertility education.

Conclusion

This study concluded that despite a general understanding of infertility among college students, misconceptions and gender disparities persist. Women generally demonstrated high awareness and moderate levels of understanding of infertility as a common issue. Men were

more likely to attribute infertility to external factors such as stress, alcohol and tobacco use, while women emphasized biological causes such as hormonal changes and age at marriage. Religious and cultural influences play a significant role in shaping perceptions of infertility, especially among non-Hindu students. Given that gender and religious and social status have a substantial impact on perceptions related to infertility, targeted educational initiatives are needed. In particular, in a country like Nepal, including infertility topics prominently in the formal curriculum of school and university education can play a significant role in developing knowledge and understanding of infertility. In addition, reproductive health campaigns should focus on dispelling misconceptions about infertility and reducing the stigma associated with infertility. These campaigns should also emphasize the importance of social support. It is also important to explore in the future how social, cultural, and religious influences influence perceptions of infertility across different demographic groups.

This study investigated college students' attitudes and knowledge about infertility, revealing both persistent misconceptions and encouraging awareness levels. Infertility is treatable, according to the majority of students (85.5%), with female participants demonstrating noticeably greater awareness than male participants. However, there was only a moderate level of knowledge regarding particular treatment modalities like hormone therapies, IVF, and IUI. The persistence of traditional beliefs, such as dependence on healers like Dhami/Jhankri, particularly among women, suggests that cultural norms have an impact on how people view health.

Differences by gender were significant. Men were more likely to point to lifestyle and behavioral factors (stress, alcohol use, sexually transmitted diseases) as causes of infertility than women, who tended to identify biological factors (age, obesity, hormonal imbalance). Despite being statistically insignificant, a large number of participants-particularly men-continued to hold the persistent gender bias that infertility primarily affects women. Cultural

and religious factors were also very important. The need for culturally appropriate reproductive health education is highlighted by the statistically significant perception of greater cultural influences on infertility by non-Hindu respondents ($p = 0.018$). It's encouraging to know that most students (67.3%), especially women (70.5%), agreed that infertility education should be included in school curricula. This indicates a recognition of the importance of early awareness in debunking stereotypes and advancing gender-equitable viewpoints.

Finally, while college students show a high level of awareness about infertility, this study highlights the need for further educational efforts to address misconceptions and encourage more supportive social attitudes toward individuals facing infertility challenges. Gender, marital status, social, religious, and cultural perceptions play a significant role in shaping attitudes related to infertility, so special attention should be paid to raising public awareness about infertility to effectively reduce stigma and increase understanding.

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