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Knowledge and Belief towards Infertility among Undergraduate Students of Selected Colleges of Pokhara Metropolitan City

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ABSTRACT

Introduction: Infertility is the global public health problem with adverse social and economic consequences. World Health Organization states that infertility affects 1 in every 10 couples worldwide. This study was carried out with an objective to find out the level of knowledge and belief regarding infertility among undergraduate students.

Methods: This was a cross-sectional and quantitative study, carried out among 420 undergraduate students of 7 selected colleges of Pokhara Metropolitan city from July to September 2019. Study populations were selected through simple random sampling method. Data collection was carried out using self-administered questionnaire.

Results: Study revealed that 51.9% students had good level of knowledge with the female students having greater knowledge (57%) than male (48%). The study found that students' knowledge score related to infertility was significantly associated with gender ($p<0.05$) and parental advices ($p<0.05$).

Conclusions: More than half of the participants had good level of knowledge. Female students were more knowledgeable than male students. Less than half of the participants had ever attended on sexual and reproductive training programs.

Keywords: *Infertility, Undergraduates, Belief, Risk factors*

INTRODUCTION

Infertility is the disorder of the reproductive system; defined by the failure to achieve clinical pregnancy after 12 months or more of regular unprotected sexual intercourse.[1] Infertility is a global public health problem that affects 1 in every 10 couples.[2] Sexually Transmitted Infection (STI),[3] pesticides[4] and unsafe abortion[5] remain common causes of infertility in Nepal.

Infertility is a cause of distress among married couple.[6] Infertility also has adverse negative social, psychological and economic consequences. Stigma, isolation, decrease in self-respect and sexual insufficiency are the other associated consequences of infertility.[4,7-8] The evolution of technology has brought new chemical factors which can potentially damage reproductive tissues. There are various lifestyle and biological risk factors of infertility. The practice of delaying motherhood to achieve own professional target is increasing. Since most of the infertility risk factors (IRFs) are modifiable, studies reveal that knowledge level play key role to decrease incidence of infertility.[9-10] Literatures report that there is lack of knowledge among students even on the basic concepts of infertility such as age-related factors or fertile time of women's menstrual cycle.[10] In this context, this study was carried out to find out the level of awareness and belief regarding infertility among undergraduates.

METHODS

This study was cross-sectional descriptive study conducted among 420 undergraduate students of 7 colleges of Pokhara metropolitan city. Firstly, all the colleges were divided into four faculties: management, health science, engineering and forestry. Then, two colleges from each faculty were selected using simple random sampling. Two academic years from each college were selected using simple random sampling. Students of each year were selected using proportionate sampling. Each student was selected using systematic random sampling. Structured questionnaire was used and author's permission was obtained. Ethical approval was obtained from NHRC. Confidentiality was maintained throughout the study. Pretesting was performed in 10% of the students and required modifications were made on tool. Data were entered in Epi data and analyzed by using SPSS. Normality of data was observed using histogram, Q-Q plots and Shaphiro-Wilk test. The associations were tested by Chi-square test and t test.

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RESULTS

Table 1: Socio-demographic characteristics of population

Variables	Frequency (n)	Percentage (%)
Age (in years)		
18-21	323	76.9
22-26	97	23.1
Mean age= 20.59±1.345		
Sex		
Male	231	55
Female	189	45
Religion		
Hindu	382	91.2
Buddhist	24	5.7
Christian	6	1.4
Muslim	7	1.7
Ethnicity		
Brahmin	234	56.1
Chettri	77	18.5
Janjati	94	22.5
Dalit	12	2.9
Educational level		
First Year	133	31.7
Second Year	147	35
Third Year	94	22.4
Fourth Year	46	11
Marital status		
Married	20	4.8
Unmarried	400	95.2
Faculty		
Forestry	105	25
Health Science	105	25
Management	105	25
Engineering	105	25

As depicted in table 1, participants' age ranged from 18 to 26 with majority (i.e. 76.9%) were of 18-22 years (mean age 20.59±1.345 years). Majority (91.2%) of participants were Hindus and Brahmin (56.1%). More than one third (35%) participants were studying in second year followed by first year (31.7%), third year (22.4%) and fourth year students (11.0%). Majority (78.6%) students lived in nuclear family. Majority (95.6%) of the students were unmarried.

Table 2: Distribution of participants on knowledge about basic facts of infertility

Variables	Frequency (n=420)	Percentage (%)
Do you wish to have a baby in future?		
Yes	412	98.1
No	8	1.9
Most fertile time of women's menstrual cycle (n-412)		
Beginning	29	7.1
Mid-cycle	256	62.4
End-of-cycle	60	14.6
Don't Know	65	15.9
Age of marked decline in women's Fertility (in years)		
After 25-34	27	6.6
After 35-39	53	12.9
After 40-44	99	24.1
After 45-60	205	50
Don't Know	26	6.3
If women get pregnant once, could they have a problem to get pregnant again?		
Yes	177	43.6
No	229	56.4
Responsible for infertility		
Male	11	2.7
Female	18	4.4
Both	382	92.9

Majority (98.1%) participants had wished to give birth to a baby in future. Majority (62.4 %) participants had correctly answered that most fertile time of women's menstrual cycle is mid-cycle. Only few (12.9%) of participants had knowledge about age range of marked decrease in women's fertility. Majority(92.9%) of the participants answered that infertility is the issue of both male and female.

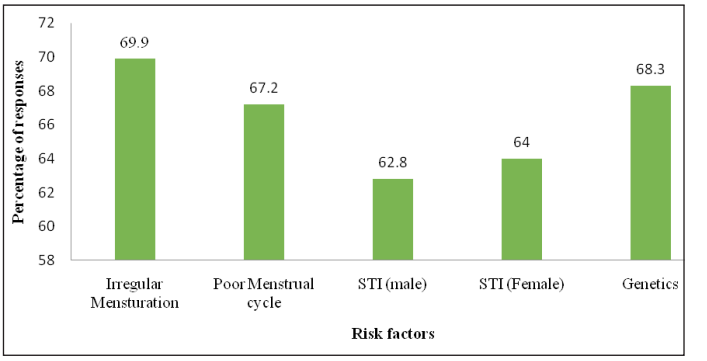

Figure 1: Bar Diagram showing knowledge on biological risk factors of infertility

Of the studied population, 69.9% were aware about irregular menstruation followed by 68.3% were aware about Genetics as the factors for infertility. About 63 percent male students and

64 % female students were aware about Sexually Transmitted Infections (STIs) as related factor for infertility.

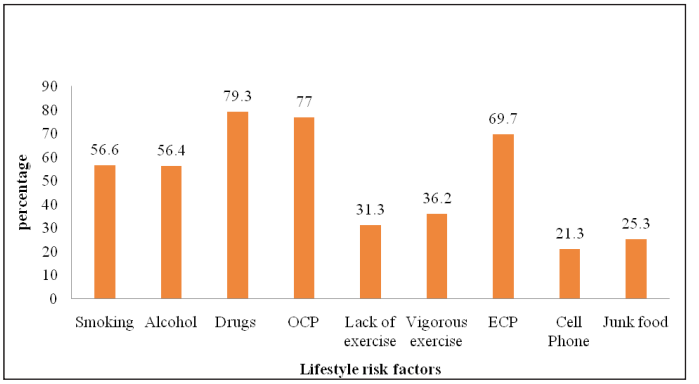

Figure 2 : Bar diagram showing knowledge on lifestyle risk factors of infertility

As shown in figure, majority of the participants (79.3%) were aware about drugs, 77 percent participants stated oral contraceptive pills as risk factor for infertility. Less than one-third of the participants stated that lack of exercise (31.3%), vigorous exercise (36.2%), use of cell phone (21.3%) and junk food (25.3%) as the risk factors of infertility.

Table 3: Belief towards religious factors as a cause of infertility

Variables	Characteristics	Frequency (n)	Percentage (%)
God's Will	Yes	54	13.1
	No	336	81.8
	Don't Know	21	5.1
Black magic	Yes	24	5.9
	No	363	88.8
	Don't Know	22	5.4

Majority of the participants (81.8% and 88.8%) did not believe on God's will and black magic as a cause of infertility respectively. However, some of them had a belief that the religious factors are linked with infertility.

Table 4: Information related factors

Variables	Frequency (n)	Percentage (%)
Received parents' advice on infertility risk factors		
Yes	125	30.6
No	283	69.4
Attended Sexual and Reproductive Health (SRH) awareness programs		
Yes	145	35.4
No	265	64.5

Table 4 shows that 30.6 % of the participants had received parent's advice on infertility risk factors and (35.5%) attended SRH related awareness programs.

Table 5: Belief related to infertility(n=420)

Variables	Characteristics	Frequency	Percentage (%)
If a woman cannot have a baby, do you think her partner has a reason to separate from her?	Yes	35	8.4
	No	383	91.6
If a man cannot have a baby, do you think his partner has a reason to separate from her?	Yes	29	7.0
	No	388	93.0
If a couple cannot have a baby but want it, do you think they should adopt?	Yes	400	95.5
	No	17	4.1
Do you think it is acceptable to have a baby with the help of surrogate mother?	Yes	251	60.0
	No	167	40.0

More than four-fifth (91.6%) of participants did not believe infertility as a reason to get separated from their partners Majority (95.5%) participants favored adoption as a good option for infertile couple. Majority (60%) participants thought that it was acceptable to them to have a baby with the help of surrogate mother.

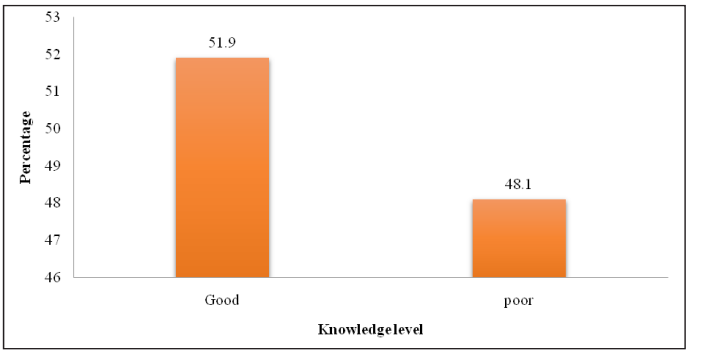

Figure 3: Distribution of participants on level of knowledge in infertility

As indicated in figure 3, almost 52 percent participants had good knowledge and about 48 percent had poor knowledge.

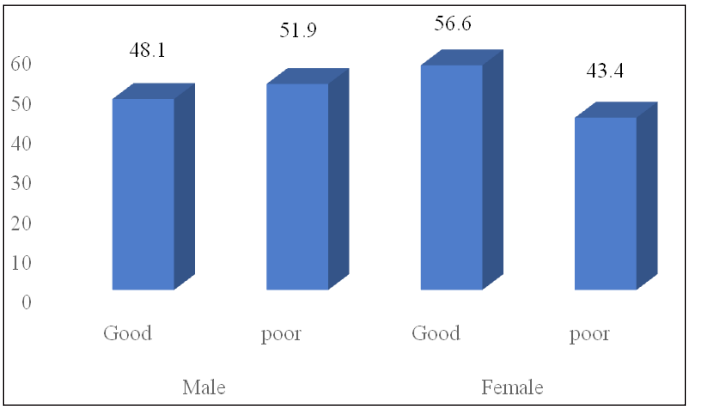

Figure 4: Bar graph showing knowledge level of male students and female students

Figure 4 illustrates that female students were more knowledgeable (56.6%) about infertility than male students (48.1%).

Table 6: Association of socio-demographic factors with knowledge regarding infertility

Variable	Characteristics	Good	Poor	Chi-square	df	P-value
Education Level	First Year	61	72	4.896	3	0.128
	Second Year	77	70			
	Third Year	57	37			
	Fourth Year	23	23			
Ethnicity	Brahmin	123	111	3.636	3	0.304
	Chhettri	41	36			
	Janjati	44	50			
	Dalit	9	3			
Faculty	Forestry	57	48	1.564	3	0.668
	Health Science	58	47			
	Management	53	52			
	Engineering	50	55			

The above table shows no any statistical association.

Table 7: Independent t- test of knowledge score in consideration with some variables

Variable	character	n	Mean	SD	t	P-value
Gender	Male	231	11.03	3.96	-2.235	0.026 *
	Female	118	11.91	3.97		
Parents advice	Yes	125	12.30	3.17	2.499	0.015*
	No	283	11.4	3.89		
SRH Programs	Yes	145	12.10	3.41	1.78	0.076
	No	265	11.42	3.81		

(*) indicate significantly different

Table 4 shows that knowledge score differentiated significantly with gender ($p<0.05$) and parents' advice ($p<0.05$).

DISCUSSION

Present study showed that slightly higher proportion of the female students had good knowledge regarding infertility related issues than male students. This finding is consistent with a study conducted in Grenada where female students were identified knowledgeable about infertility than their male counterparts.[11] This could be because male students thought infertility is the issues of female or female maintain more concern about the fertility related issues. Another study found that female university students were concerned having children before they get old.[12] However, this study reported that increase in age and education level were not statistically associated with the knowledge about infertility; which is similar to study conducted by Sanaz et al.[13] and Bhandari et al.[14] The present study showed that faculty wise students did not have significant difference in knowledge level about infertility. Similar observations were reported among Greek medical students.[15] This study found that marital status was not associated with knowledge of fertility which is similar to the observations made by Bhandari et al. in Nepal.[14]

This study found that the knowledge level of the students regarding infertility was good (51.9 %). This proportion is roughly equal (55.86%) to that was reported by Sanaz et al.[13] Majority (98.1%) of the students had desire to give birth to the baby; which was similar to a reference study.[16] In this study, 62 percent students had knowledge about the relationship between infertility and menstruation. This finding is similar to investigations performed by Roucho.[7] A few (12.9%) students had knowledge about age as a factor influencing fertility. This finding is in line with many previous studies.[10,17,4,18,19,20] Many studies revealed that the students wanted to have child during later stages of their life because of their conflicting desire between career and family need.[16,18] Many students answered correctly about infertility as an issue of both male and female which was also supported by previous studies.[19] Nevertheless, it differs from the findings reported in adult population in Pakistan.[20,21]

Parent's advice was significantly associated with the knowledge scores of infertility. No comparable data was found in previous studies. Moreover, attending SRH training program was not significant with the knowledge score of infertility. This findings differed from a study conducted by Digdem et.al.[10] This might be because SRH programs had not targeted infertility as their topic.

Similar to other studies[22], majority (77%) of the students reported that Oral Contraceptive Pills (OCPs) are the risk factors of infertility despite the fact that OCP is one of the popular family planning methods. Very few students identified junk foods and cell phones as risk factors for infertility which differed from other studies.[23] This might be because the relationship could not be explained using plausible statements. About four-fifth students believed that infertility was not the reason to get separated from partners. This perception was somehow similar to the study conducted in Grenada among undergraduates.[19]

CONCLUSION

More than half of the participants had good level of knowledge. Female students were more knowledgeable than male students. Less than half of the participants had ever attended on sexual and reproductive training programs. Effective SRH program for targeted population should be increased to familiarize appropriate knowledge among students.

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