


Fertility Awareness, Knowledge, Attitude, and Practices among Nursing Students of a Tertiary Care Hospital of East Sikkim

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ABSTRACT

Background: Sikkim has an alarming fertility rate of 1.1 as compared to the rest of the national average of 2.0. This might increase in the future as people don't want to talk about fertility issues openly. Nursing students are the future of nursing care. Nurses play an important role in imparting knowledge regarding fertility among the general public. This study was done to assess fertility awareness, knowledge, attitude, and practices among nursing students of a tertiary care hospital in Sikkim.

Materials and methods: It was a cross-sectional study conducted among nursing students of a tertiary teaching hospital in East Sikkim. A total of 349 students who gave consent to participate in the study were asked to fill a predesigned, pretested, semi-structured, self-administered multiple response questionnaires with a fixed list of questions in a standard sequence. Based on the responses their knowledge, attitude, and practices were assessed.

Results: Among the 349 participants, although 80% of the participants were aware of their fertile days, only about half of them had adequate knowledge. Although the actual level of knowledge was low, it was interesting to observe that more than 90% of participants had a positive attitude. Many participants had a false perception of practical fertility issues.

Conclusion: Fertility-related knowledge was low among nursing students in Sikkim. Fertility-related issues should be included in the training curriculum for the nursing students.

Keywords: Fertility, India, Knowledge–attitude–practices, Nursing student, Sikkim.

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INTRODUCTION

Infertility is a worldwide problem affecting 8–12 percent of couples (50–80 million) during their reproductive lives (WHO, 1991).¹ The WHO estimates the overall prevalence of primary infertility in India to be between 3.9 and 16.8%.² Infertility has stigmatized women from time immemorial. Women who are deemed to be infertile are often excluded from religious practices and face many such social difficulties. In fact, the ease with which women can be labeled infertile or resist the label, the experiences of childless women, and the process of seeking solutions for infertility all go beyond the biological fact of reproductive impairment.³ Further, a male factor of infertility is a taboo subject and is less often discussed in society. This constrains the relationship of the couples resulting in divorces. Even if the couple seeks treatment, women are often blamed for infertility and she alone is expected to undergo the diagnostic procedures to know the cause of infertility.

Moreover, people in developing countries, when faced with infertility resort to folk medicine and tantric practices, and avail the help of quacks instead of seeking medical attention. The prohibitive cost and inadequate availability of health services pertaining to infertility have further aggravated the situation.⁴

Sikkim has an alarming fertility rate of 1.1 (children per women) as compared to the rest of the national average of 2.0 (children per women) vide National Family Health Survey-5 (19–21). This problem is going to increase in the future, as, unlike other diseases, it is a health problem that people don't want to talk about openly. The total fertility rate of Sikkim is decreasing drastically, and hence, the ignorance of the subject cannot be taken lightly anymore. Uncertainty on various aspects of fertility among people leads to the flourishing business of fertility clinics.

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Nurses are an important part of the healthcare system in India. Their role includes health promotion and lifestyle education. Nurses working in healthcare settings are well placed to promote awareness about factors that influence fertility to help people of reproductive age achieve their reproductive goals. Nurses are a very important link in imparting knowledge regarding fertility among the general public.⁵ Female patients often feel more comfortable to discuss such issues with the nurses rather than with anybody else.⁶

Nursing students are the future of nursing care. The knowledge they acquire during their training is the foundation of future nursing care provided to the society. However, it is not known whether the nursing students have adequate knowledge about fertility or if they believe that it is their role to discuss fertility with their patients and people coming across them.

Hence, it becomes important to understand the perception of nursing students regarding infertility and its management in order to be able to provide more effective solutions and also to help in spreading the knowledge regarding fertility issues so that they can change the attitude of common folks regarding fertility issues. Furthermore, negative attitudes and inaccurate knowledge of fertility among nursing students who are the future of nursing care can pose substantial barriers to the spread of knowledge of fertility among the general public.

It is with this in mind that the aim of this study was to assess the knowledge, attitudes, and practices of fertility issues among nursing students of a teaching hospital in East Sikkim.

MATERIALS AND METHODS

It was a cross-sectional study conducted between December 2019 and February 2020. The study was approved by the Institutional Ethics Committee. All the four-year nursing students were approached for participation in their respective lecture halls. Prior to the conduct of the interview, pre-testing of the questionnaire was done among 10 nursing students.

The nature and purpose of the study were explained to them, and informed consent was obtained. Participant's confidentiality was assured and guaranteed. The nursing students who gave consent to participate were requested to fill a pre-designed, pretested, semi-structured, self-administered multiple response questionnaires with a fixed list of questions in a standard sequence. The questions were both closed and open-ended and included information about participants' demographic background, their knowledge, attitude, and practices of fertility-related issues. Of the 400 nursing students, 349 students consented to participate in the study (with a response rate) and filled out the questionnaires.

From the percentage of women experiencing infertility with high fertility awareness from a previous study (12.7%), with an absolute precision of 4%, it is determined that a minimum sample size of 266 will be required to obtain a 95% confidence level that <30% of women attending general practice could identify the fertile window of the menstrual cycle.⁷

Initially, the collected data was thoroughly screened and entered into MS Excel for analysis. The data were analyzed and presented in percentages and proportions.

RESULTS

Invitations were sent to all the 400 nursing students to participate, of which 349 (87.25%) returned the questionnaire. Most of the participating nursing students were below 20 years of age (70.20%) and all of them were female. The majority of them belonged to the nuclear families (81.38%), urban areas (60.46%), and upper-middle class (58.45%). Fifty-nine percent of the participants were Hindu by religion, and 58.17% of participants were Nepali by ethnicity (Table 1).

Among the 349 participants, only 33 (9.46%) participants stated that they had sex before, and for the majority of them, the age of first sex was between 16 and 20 years (84.85%), and the number of lifetime sexual partners was one (87.88%). Seventy percent of students had a normal menstrual cycle (26–35 days), for 14.90% person it was prolonged, and for 11.17% it was short. Twenty-two participants had used contraceptives before, and only 5.16% of the participants were ever concerned to become pregnant (Table 1).

Table 1: Sociodemographic profiles and background characteristics of the participating nursing students (n = 349)

Particulars	n	%
Age		
≤20	245	70.20
>20	104	29.80
Gender		
Female	349	100
Male	0	0
Year of study		
1st year	100	28.65
2nd year	82	23.50
3rd year	86	24.64
4th year	81	23.21
Family type		
Nuclear	284	81.38
Joint	65	18.62
Religion		
Hindu	206	59.03
Muslim	10	2.87
Christian	33	9.46
Others	100	28.65
Community		
Nepali	203	58.17
Bhutia	31	8.88
Lepcha	23	6.59
Others	91	26.07
Residence		
Urban	211	60.46
Rural	135	38.68
Not disclosed	3	0.86
Socioeconomic status		
Low	2	0.57
Lower middle	132	37.82
Upper middle	204	58.45
High	4	1.15
Not disclosed	7	2.01
Ever had sex before?		
Yes	33	9.46
No	315	90.26
Not disclosed	1	0.29
Age of first sex? (n = 33)		
≤15	1	3.03
16–20	28	84.85
21–25	4	12.12
≥26	0	0.00
No of lifetime sexual partners? (n = 33)		

(Contd....)

Table 1: (Contd...)

Particulars	n	%
One	29	87.88
Two	0	0.00
Three or more	2	6.06
Not disclosed	2	6.06
Ever previously pregnant? (n = 349)		
Yes	0	0.00
No	269	77.08
N/A	30	8.60
Not disclosed	50	14.33
Your menstrual cycle		
<25 days (short)	39	11.17
26–35 days (normal)	244	69.91
>35 days (prolonged)	52	14.90
Not disclosed	14	4.01
Have you ever used contraception?		
Yes	22	6.30
No	312	89.40
Not disclosed	15	4.30
Ever concerned to become pregnant?		
Yes	18	5.16
No	278	79.66
N/A	30	8.60
Not disclosed	23	6.59

Table 2: Awareness and source of information regarding fertility

Awareness of fertile days (n = 349)	n	%
Yes	284	81.38
No	65	18.62
*Source of knowledge (n = 284)		
Doctors/hospital	98	34.51
Tv/radio	15	5.28
Friends/relatives	70	24.65
Newspaper/magazine	27	9.51
Internet	104	36.62
Others	120	42.25

*Multiple answers allowed for this question

Table 3: Response to fertility awareness questions (n = 284)

Fertility awareness	Correct response		Incorrect response	
	n	%	n	%
Normal menstrual cycle is between 25 and 35 days (T)	212	74.6	72	25.35
Ovulation occurs about 14 days prior to menses (T)	209	73.6	75	26.41
Ovulation is preceded by clear mucoid vaginal discharge (T)	169	59.5	115	40.49
Intercourse needs to occur prior to ovulation to become pregnant (T)	121	42.6	163	57.39
Basal body temperature rises after ovulation (T)	150	52.8	134	47.18
Alternate day coitus for 5–6 days around ovulation increases the chance of pregnancy (T)	120	42.3	164	57.75
Quality and number of egg decreases as a woman gets older (T)	211	74.3	73	25.70
Folic acid should be started prior to pregnancy (T)	109	38.4	175	61.62

*Correct answers to the questions are given in bracket, T = true, F = false

To the question “Are you aware of your fertile days?” heard or described, 284 (81.38%) participants responded that they were aware of it. Of these, 34.51% responded that they heard it from Doctors/Hospitals, 36.62% from Internet, 24.65% from friends/relatives, 9.51% from magazines/newspapers, and 5.28% from TV/Radio. Uptown, 42.25% of students heard it from their textbooks/lectures (Table 2).

To assess the in-depth and actual level of knowledge, we asked eight sets of knowledge questions to the students who were aware of their fertile days (Table 3). To find out the actual summarized level of knowledge, each question was first scored, and then the total of each respondent’s score ranged from 0 to 8 (0–100%). The total score for each participant was calculated and then respondents were classified as; inadequate and adequate or good knowledge. Hence, respondents who scored more than 50% were considered as “adequate or good knowledge” and those who scored 0–50% were considered as “inadequate knowledge”. Based on this summary index (n = 284), 54.93% of nursing students had adequate/good knowledge (score: >4) and 45.07% had inadequate knowledge (score: ≤4).

Participants those who were aware of their fertility days were asked to identify factors adversely affecting women’s ability to become pregnant. Only 26.06% answered correctly that increasing the age of men adversely affects a women’s ability to become pregnant, and only about 39.09% answered correctly that extreme exercise has an adverse effect on a women’s ability to become pregnant. The majority of them had a false belief that increasing the age of men and extreme exercise have no effect on a women’s ability to become pregnant (Table 4).

Perception about fertility was assessed using a set of 6 questions (Table 5). Approximately 80% of nursing students had a false perception that coitus several times in a day increases the chances of pregnancy. Majority of them had a false perception that certain sex positions have good chances of achieving pregnancy (94%), lying on back for several hours after coitus increases the chances of pregnancy (85.21%), and that a good diet prior to coitus increases chances of pregnancy (78.52%).

To determine attitude about fertility, seven attitude items were asked, and participants gave their responses in a 5-point Likert scale ranging from points 1 (strongly agree) to 5 (strongly disagree). For the purpose of analysis, each item was recoded to a dichotomous “agree–disagree” variable. Scores between 1 and 2 for an item were considered as agreement, and scores between 4 and 5 as disagreement or a stigmatizing response. A score of 3 was interpreted as “neither agree nor disagree” and was conservatively categorized as disagreement. To find out the actual summarized



Table 4: Response to factors adversely affecting a women's ability to become pregnant

<i>Factors adversely affecting women's ability to become pregnant</i>	<i>Correct response</i>		<i>Incorrect response</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Increasing age of women (T)	253	89.08	31	10.92
Increasing age of men (T)	74	26.06	210	73.94
Irregular periods (T)	219	77.11	65	22.89
Regular periods (F)	176	61.97	108	38.03
Underweight (T)	136	47.89	148	52.11
Obese (T)	151	53.17	133	46.83
Smoking (T)	205	72.18	79	27.82
Alcohol (T)	217	76.41	67	23.59
Stress (T)	220	77.46	64	22.54
Repeated infection of private parts (T)	210	73.94	74	26.06
Extreme exercise (T)	113	39.79	171	60.21

*Correct answers to the questions are given in bracket, T = true, F = false

Table 5: Perception about fertility (n = 284)

<i>Perception about fertility</i>	<i>Correct response</i>		<i>Incorrect response</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Women continue to produce more eggs as she grow older (F)	216	76.06	68	23.94
Coitus during menses has got a maximum chance of pregnancy (F)	174	61.27	110	38.73
Coitus several times in a day increases the chance of pregnancy (F)	56	19.72	228	80.28
Certain sex positions have good chances of achieving pregnancy (F)	17	5.99	267	94.01
Lying on your back for several hours after coitus increases the chance of pregnancy (F)	42	14.79	242	85.21
Good diet prior to coitus increases the chance of pregnancy (F)	61	21.48	223	78.52

*Correct answers to the questions are given in the bracket, T = true, F = false

Table 6: Attitude on fertility (n = 284)

<i>Attitude on fertility</i>	<i>Positive attitude</i>		<i>Negative attitude</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Girls and women should get fertility knowledge much earlier they plan pregnancy	275	96.83	9	3.17
Timed coitus observing fertility days increases the chance of pregnancy	205	72.18	79	27.82
Family physicians and all doctors should routinely discuss fertility issues with patients and general women	260	91.55	24	8.45
Fertility knowledge and contraception should be included in the school curriculum	271	95.42	13	4.58
Electronic and print media should give fertility knowledge regularly	241	84.86	43	15.14
I would encourage and discuss about fertility issues amongst friends and relatives	263	92.61	21	7.39
Medical and nursing students have a strong role to play to discuss fertility issues with general women	278	97.89	6	2.11

level of attitude response each question was first scored and tallied, and then the total of each respondent's score ranged from 0 to 7 (0–100%). The total score for each participant was calculated and then respondents were classified as: positive and negative attitudes. Hence, respondents who scored more than 50% were

considered as "positive attitude" and those who scored 0–50% were considered as "negative/stigmatizing attitude". Based on this summary index, 94.36% of nursing students had a positive attitude (score:>4), and only 5.63% had a score ≤4 or stigmatizing attitude (Table 6).

Table 7: Practice of fertility (n = 284)

Practice of fertility	n	%
Have you ever been concerned about your ability to become pregnant?		
Yes	60	21.13
No	215	75.70
Not disclosed	9	3.17
Have you ever assessed or been aware of your (your partner's) fertile days?		
Yes	71	25.00
No	200	70.42
Not disclosed	13	4.58
Method? (n = 71)*		
Calculating menstrual cycle days	51	71.83
Commercial kits	2	2.82
Checking mucus	2	2.82
Physical signs and symptoms	16	22.54
Not disclosed	4	5.63
Have you ever practiced coitus according to your (your partner's) fertile period?		
Yes	15	5.28
No	242	85.21
Not applicable	1	0.35
Not disclosed	26	9.15
In your day-to-day life/consultation with your doctor do you discuss your fertility issues with your doctor or colleagues/friends?		
Never	87	30.63
Once a while	139	48.94
Very frequently	46	16.20
Not disclosed	12	4.23
Are you happy with the level of your knowledge on fertility issues?		
Don't know	64	22.54
Yes	154	54.23
No	66	23.24

*Multiple answers allowed for this question

Among the 284 participants who responded that they were aware of their fertile days, only 21.13% were concerned about their/their partner's ability to become pregnant, and only 25% responded that they had assessed/were aware of their/their partner's fertile days. The most common method for assessing fertile days by the participants was by calculating the menstrual cycle days or the calendar method (71.83%), only about 54.23% of participants were happy with the level of their knowledge on fertility issues (Table 7).

On asking about barriers to discuss fertility with patients or with others, the most common reason given was lack of knowledge (42.25%) and about 39% percent of nursing students thought that

Table 8: Barriers to discuss fertility issues (n = 284)

Barriers to discuss fertility issues*	n	%
Lack of knowledge	120	42.25
Time constraint	55	19.37
It's not the job of medical/nursing students to do the same	4	1.41
We have never been trained to do so	33	11.62
Patients/others should bring up the issues	112	39.44
Others	55	19.37

*Multiple answers allowed for this question

patients or others should bring up the issues. Other issues stated by the nursing students include time constraints (19.37%). Only about 1.41% of students thought that it was not their job to do so (Table 8).

DISCUSSION

Healthcare professionals are the key persons in providing both knowledge and facilities regarding fertility-related problems to their clients. Nurses are considered as the primary port of entry to provide health information to general people in India and other developing countries. Most general women first come in contact with nursing staff and seek suggestions about various health issues including fertility. Nursing students during their training period should learn about basic fertility issues so that they can spread their knowledge to general women when they go to society as a professional caregivers after completing their training.

The finding of this survey shows that knowledge of fertility is poor among nursing students in Sikkim. Only about fifty-two percent of overall participants (n = 349) had adequate knowledge about their fertile days. Nursing students are the future of nursing care, thus their awareness, knowledge, attitude, and practices on fertility play an important role to assure knowledge among general women.

In a study conducted in Australia among the nursing professionals of primary health care, it was found that more than half of the respondents were unaware of the age when men and women's fertility declines, in our study although about ninety percent of participants had knowledge that declining age of women has an adverse effect on fertility, however, 3/4th of the nursing students were not aware that increasing age of men also had an adverse effect on fertility.⁸

In our study, it was found that the most common barrier to discuss fertility issues among nursing students was a lack of knowledge. These findings were similar to findings given in a study among the nursing staff of the primary health care reported by other authors.⁸

A strength of the present study is that it is the first to assess fertility knowledge, attitude, and practices among nursing students. This study explored in-depth fertility-related knowledge of nursing students who are the backbone of the healthcare system. Nevertheless, this study was conducted in a single nursing college of the north-eastern state of India. Findings from this study need to be interpreted with caution. Similar studies should be conducted at other locations, in both India and other countries to explore their level of knowledge and barriers in discussing about fertility with their client, so that appropriate educational strategies could be planned.

CONCLUSION

Fertility-related knowledge was low among nursing students in Sikkim. Although eighty percent of the participants were aware of their fertile days, only half of them had adequate knowledge. Although the actual level of knowledge was low, it was interesting to observe that more than ninety percent of participants had a positive attitude. Many participants had a false perception about practical fertility issues. The most common barriers to discuss fertility issues with patients or others were inadequate knowledge. Since nursing staffs are an important part of the healthcare system, it is essential to give adequate knowledge to them, by including fertility related issues in their training curriculum and organizing continuing educational sessions for them.

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