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Original Research Article

A study on development of information guide sheet regarding knowledge and attitude on in-vitro fertilization among final year B.Sc. students in selected college of nursing, Tumkur, Karnataka

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ABSTRACT

Background: In emerging nations, in vitro fertilisation, or IVF, is becoming more and more common. In Karnataka, little to no research has been done to determine nurses' practises or awareness of this newly developed reproductive technique.

Objectives: The knowledge and attitudes of nurses towards IVF were ascertained through this study.

Materials and Methods : A cross-sectional descriptive study was carried out at Sri Siddhartha College of Nursing. Questions with a 5-point Likert scale that had been pretested which were used to gather data. Analysis was done using Epi info 2008 version 3.5.1.

Results: Out of 60 respondents, 33 (55 %) had inadequate knowledge, 19 (31.7 %) have moderately adequate knowledge, 8 (13.3 %) have adequate knowledge. Regarding indication, 22 (36.7 %) had moderate, while 14 (23.3 %) had adequate knowledge. Related to steps on IVF, 38 (63.3 %) had inadequate, while 22 (36.7 %) had adequate knowledge. About 38 (63.3 %) had inadequate and 3 (5 %) adequate knowledge regarding risk and side effects of IVF. About 39 (65 %) respondents had unfavourable attitude, while only 21 (35%) had favourable attitude towards IVF. The knowledge is distributed with a range of 7-29, mean of 17.63, median 16.50. SD 5.20 and mean percentage 50.38 %. Attitude with arrange of 10-19, 17.5 mean scores, 5.50 median scores, 1.98 as SD score and mean percentage 87.5 respectively. The chi square value was not significant at 0.05 level for knowledge in relation to knowledge (1.684), age (0.067), religion (2.927), types of family (1.669), area of living (1.071), source of information (2.125), exposure to previous information about IVF (2.222), attitude and age (0.297), attitude and religion (0.083) and association between attitude and source of information (0.601). The chi square value obtained was significant for association between attitude & gender (5.398), area of living (4.207), attitude and previous exposure (8.031).

Conclusion : This research found an association between attitude and demographical variables such as gender and area of living and previous exposure to information about IVF was highly significant. Hence the attitudes on demographical variables were influenced by variables like age, religion. Type of family, source of information.

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1. Introduction

Knowledge and attitude of nurses can significantly influence the standard of care that patients undergoing in vitro

fertilisation (IVF) procedures get.¹ Data on these variables are crucial for both enhancing the standard of treatment a patient receives and for future planning of internal training programmes.² The first IVF-assisted birth was accomplished in 1978. But since then, the IVF method has

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resulted in the birth of more than 250,000 children. Through in vitro fertilisation (IVF), infertile couples can become parents to a biologically linked child. The physician who created the remedy, Robert G. Edwards, received the 2010 Nobel Prize in Physiology or Medicine.^{3–5}

Though some have reported success, others have reported negative side effects from this treatment.⁶ Approximately 10-15% of women who are of reproductive age worldwide are unable to conceive naturally after a year of unprotected sexual activity and the phenomenon of infertility effect is between 60 and 168 million people worldwide accounting for about 13 to 15% of couples.^{7–9} About 55% of cases of infertility are caused by female factors, and the remaining 30 to 40% are caused by male factors.¹⁰

The number of childless couples is increasing as a result of the growing global population and the older marriage age in Africa, even if the frequency of couple infertility varies among different nations.¹¹ Infertile couples in both high- and low-income countries can now choose to employ ART treatments as an alternative due to the exponential growth in their use over the past few years. Contrary to popular belief, only wealthy couples choose to undergo IVF procedures, meaning that many people will not be able to afford the operation. The inability to afford IVF treatment has kept many people from using it. Therefore, there is proof that households with higher incomes will be able to afford IVF procedures, but lower income families will not be able to.¹²

This study, which is probably the first to poll nursing students about IVF, attempts to gauge final-year nursing students' awareness, knowledge, and perception of the procedure.

2. Materials and Methods

This descriptive cross-sectional study was conducted in Tumkur, Karnataka, at the Sri Siddhartha College of Nursing. A series of semi structured interviewer-administered questions that were modified and adapted from an earlier study were used to collect data.¹³ The questionnaire included the data regarding knowledge, attitude, indication, steps, risk and side effects related to IVF among final year B.Sc. students in selected college of nursing, Tumkur, Karnataka.

2.1. Statistics

Chi square test was used to compute the findings regarding the association between pre-test knowledge and attitude score of final year B. Sc nursing students and selected demographical variables.

3. Results

Table 1 indicate that out of 60 samples, about 51.66 % final year B.Sc nursing students belongs to the age group of 21 to 22 years, 30 % belongs to age group 19-20 years, and

Table 1:

Sl. No	Variables	Frequency	Percentage
Age in years	19 to 20	18	30 %
	21 to 22	31	51.66 %
	23 to 24	11	18.33 %
Gender	Female	55	92 %
	Male	5	8 %
	Hindu	43	71.66 %
Religion	Christian	13	21.66%
	Muslim	4	7 %
Types of family	Urban	33	55 %
	Rural	27	45 %
Previous source of information	Printed materials	16	26.66 %
	Health professionals	20	33.33 %
	Mass media	24	40 %
Previous exposure information about IVF	Yes	10	16.66 %
	No	50	83.33 %

18.33 % belongs to age group 23-24 years and, based on Gender 92% belongs to female and 8% belongs to male, religion 71.66 % final year B.Sc. nursing students belongs to Hindu, 21.66% belongs to Christian and 7 % Muslim, in family wise 87% belongs to Nuclear family, 13% belongs to joint family, in area of living 55% are from urban area and 45% are from rural area, regarding source of information 40 % through mass media, 33.33 % were health professionals and 26.66 % through printed materials, final year B.Sc nursing students was prior information regarding IVF is about 83.33 % are not exposure previous information about IVF and 16.66 % were exposure previous information about IVF. Distribution of final year nursing students according to age show that 52 % final year B. Sc nursing students belongs to the age group of 21 to 22 years, 30% belongs to age group 19-20 years, 18% belongs to age group 23-24 year. Distribution of final year B. Sc nursing students according to Gender shows that 55 (92%) belongs to female and 5 (8%) belongs to male. Distribution of nursing students according to Religion shows that 43 (72 %) final year B. Sc nursing students belongs to Hindu, 13 (22%) belongs to Christian and 4(7%) Muslim. Distribution of final year B. Sc nursing students according to type of family 52(87 %) belongs to nuclear family 8 (, 13 %) belongs to joint family. Distribution of final B. Sc nursing students according to area of living 33 (55 %) were living in urban area and 27(45 %) were living in rural area. Distribution of final B. Sc nursing students according to source of information 24(40 %) were from mass media, 20(33.33 %) were from health professionals and 16 (26.66 %) were through printed materials. Distribution of nursing students according to previous exposure information about IVF 50 (83 %) were not exposure to any previous information about IVF and 10 (17 %) were exposure to any previous information about

IVF.

Table 2: Aspects wise overall distribution of knowledge score

Sl. no	Aspects wise analysis	Inadequate		Moderately adequate		Adequate	
		No.	%	Numbers	%	No.	%
	Meaning & definition	20	33.3	37	61.7	3	5
	Indication of IVF	22	36.7	24	40	14	23.3
	Patient selection criteria.	15	25	32	53.3	13	50
	Steps in IVF	38	63.3	-	-	22	36.7
	Risk and side effects of IVF	38	63.3	19	31	3	5
	Safety precaution	28	46.7	19	31.7	13	21.7
	Overall knowledge score	33	55	19	31.7	8	13.3

Table 2 indicate represents the aspects wise overall distribution of knowledge score. Among the 60 participants 33 (55.0 %) have inadequate knowledge, followed by 19 (31.7 %) have moderately adequate knowledge and 8 (13.3 %) have adequate knowledge. Knowledge has categorized into six aspects. In meaning and definition wise the majority 20 (33.3 %) of had inadequate, 37 (61.7 %) had moderately adequate and 3 (5 %) had adequate knowledge. In indication 22 (36.7 %) had inadequate, 24 (40 %) of them had moderately adequate and 14 (23.3 %) adequate. The Patient selection criteria 15 (25%) had inadequate, 32 (53.3 %) of them had moderately adequate and 13(50 %) had adequate knowledge. In step wise 38 (63.3 %) had inadequate, none of them had moderately adequate and 22 (36.7 %) had adequate, in risk and side effects of IVF 38(63.3 %) had inadequate 19 (31%) had moderately adequate, 3 (5 %) adequate. In safety precaution 28 (46.7%) had inadequate, 19 (31.7) had moderately adequate and 13 (21.7 %) had adequate knowledge.

Table 3Depicts 39 (65 %) respondents had unfavourable attitude, while 21 (35%) had favourable attitude.

Table 4 depicts the correlation of knowledge and attitude regarding IVF were analysed through Spearman's rank correlation method, it shows that there was a positive correlation between knowledge and attitude score $r = 0.566$ and $p < 0.001$. Hence it was found statistically significant; there is relation between knowledge and attitude score (i.e.) when the knowledge increases, there is a favourable attitude towards the IVF.

Table 5 depicts that Chi square established at 0.05 level for association between knowledge and demographical variables was statistically insignificant. Hence there is no association between knowledge and demographical

variables a like age, sex, religion, type of family, area of living, source of information and previous exposure to any information about IVF is statistically not significant.

Table 6 depicts that the demographical variables gender and area of living (4.207 and 5.398 respectively) was statistically significant. Hence there was no association between knowledge and demographical variables a like age, sex, religion, type of family, area of living, source of information and previous exposure to any information about IVF was statistically highly significant.

4. Discussion

Due to their close proximity to the couple and their thorough understanding of health requirements, concerns, symptoms, medications, and potential pregnancy issues, hospital nurses may be particularly valuable during the IVF cycle. Nurses are in a good position to track patients' responses to IVF therapies because of their specialisation in cycle control, treatment, and documentation of pregnancy-related issues.¹⁴

According to Obioha JA et al., majority of the nurses were well-versed in IVF, yet they harboured considerable disapproval towards its application. One practical step towards enhancing nurses' attitudes towards IVF would be IVF training.

In a similar prior study conducted in Japan by Macer on nurses' understanding about in vitro fertilisation (IVF) and genetic engineering demonstrated a very high degree of awareness comparable to this study.¹⁵

Graduate-level education did not connect with perceived degree of expertise, in contrast to a prior study by Mitchel et al., although it did correspond with certification and the duration of clinical experience in assisted reproductive nursing.¹⁶

This result is in contrast to a prior study conducted by Khalili et al., wherein the majority of study participants expressed favourable attitudes on infertility treatment through IVF. In addition to providing standard nursing care services, such as individual and group education regarding treatment and coping mechanisms, IVF practitioners also provide counselling.¹⁷

In addition, the nurses encourage the women by being with them throughout the intrusive treatments.^{18,19}

There was a discernible age and marital status gap in the knowledge and understanding of IVF. There were noticeable differences in knowledge and attitudes between age groups, which is not surprising given that the majority of nurses varied in different age groups. Likewise, Dillon et al.'s study on nurses discovered that age had a significant impact on nurses' attitudes about IVFs ($p = .05$), with older nurses scoring higher on the mean attitudinal scale. The marital union's status could be the cause of this strange discovery. Given that the respondents' mean age was 35.6 ± 5.1 years, a bigger percentage of them will have married at a later age,

Table 3: Attitude level

Favorable 21 (35 %)	Unfavorable 39 (65 %)	Total 60 (100%)
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Table 4: Correlation between overall knowledge and attitude scores

Sl. No.	Overall score	Spearman's correlation coefficient	P value
1	Knowledge score	0.566	<0.001
2	Attitude score		

Table 5: Association between knowledge and selected demographical variables

Sl.no	Demographic Variables	Responses	Overall, Knowledge Score		Chi-Square Value	df
1.	Age	19-20	19	14	1.684	1*
		21-22	11	16		
		23-24	10	9		
4.	Gender	Male	3	2	0.067	1*
		Female	30	25		
		Hindu	19	24		
6.	Religion	Christian	8	5	2.927	2*
		Muslim	2	2		
		Nuclear	35	17		
9.	Types of Family	Joint	3	5	1.669	1*
		Printed Material	9	7		
		Health Professionals	11	9		
11.	Source of Information	Mass Media	14	10	2.125	2*
		Yes	5	5		
		No	30	20		
14.	Previous Information about IVF	Rural	18	9	1.071	1*
		Urban	20	13		

*Not significant

Table 6: Association between knowledge and selected demographical variables

Sl.no	Demographic Variables	Responses	Overall, Knowledge Score		Chi-Square Value	Df
1.	Age	19-20	16	17	0.297	1*
		21-22	15	20		
		23-24	15	14		
4.	Gender	Male	3	2	5.398	1**
		Female	30	25		
		Hindu	19	24		
6.	Religion	Christian	8	5	0.083	Fisher's exact Probabilities = 0.083
		Muslim	2	2		
		Nuclear	32	20		
9.	Types of Family	Joint	5	3	0	1*
		Printed Material	10	6		
		Health Professionals	11	9		
11.	Source of Information	Mass Media	10	14	0.601	2*
		Yes	3	7		
		No	32	18		
14.	Previous Information about IVF	Rural	17	10	8.031	1***
		Urban	21	12		

*Not significant, **Significant, ***Highly significant

suggesting that age may be correlated with marital status. Thus, more research is necessary,²⁰

As a result, given the increasing need for IVF services in developing nations, it is advised that nurses working in clinical settings attend seminars and workshops to increase their knowledge of IVF, and that health authorities work to outfit more medical facilities with equipment suitable for treating infertile women at all care levels. To assess how the education affected each of the assessed characteristics, we intend to provide a training programme on IVF procedures for the nurses who took part in this study in subsequent research. It's also necessary to address the limitations of the current analysis. One important limitation is that our study was unable to account for most of the variation in nurses' knowledge and attitudes. Moreover, the external validity of results may be jeopardised by the use of a non-random convenience sample.

5. Conclusion

In summary, the study's findings showed that the nurses who took part in it knew enough about the definition, methods, applications, and use of in vitro fertilisation. There was a noticeable difference in the amount of knowledge and awareness of IVF based on age and marital status. Given the low degree of attitude towards its usage by single moms and in sex selection, we anticipated improved patient and procedure monitoring during IVF treatments. This suggests that educating nurses about IVF might be a helpful first step towards changing their opinions of the procedure. To assess how the education affected each of the assessed characteristics, we intend to provide a training programme on IVF procedures for the nurses who took part in this study in subsequent research. Furthermore, since attitudes can alter over time, longitudinal research should be done in the future to find variations in attitudes over time.

6. Source of Funding

None.

7. Conflict of Interest

None.

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