

Original Research Article

Perspectives on surrogacy among nursing professionals: awareness, attitudes and ethical concerns

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ABSTRACT

Background: Surrogacy is an important assisted reproductive option that raises ethical, legal, and social concerns. Nursing professionals play a key role in providing reproductive healthcare and counselling. Aim was to assess the awareness and attitudes of nursing professionals towards surrogacy and surrogate children.

Methods: A descriptive cross-sectional study was conducted among 281 nursing professionals using convenience sampling. Data were collected through a self-reported questionnaire and analyzed using descriptive statistics.

Results: Most participants supported legalization of surrogacy (74.0%) and surrogacy for infertile heterosexual couples (76.2%). However, awareness regarding The Surrogacy (Regulation) Act was limited (29.5%). Less than half felt they had adequate knowledge regarding surrogacy care, though most expressed willingness to learn more. Attitudes towards surrogacy for same-sex couples and single individuals were less favourable.

Conclusions: The study revealed moderate awareness and varied attitudes towards surrogacy among nursing professionals, highlighting the need for education on surrogacy, reproductive ethics, and legal aspects.

Keywords: Attitudes, Awareness, India, Nursing professionals, Reproductive ethics, Surrogacy

INTRODUCTION

Infertility is a growing reproductive health concern affecting millions of couples globally and is often associated with significant psychological, emotional, and social distress. The World Health Organization recognizes infertility as a disease of the reproductive system that affects the ability to achieve pregnancy after 12 months or more of regular unprotected sexual intercourse.¹ Advances in assisted reproductive technologies (ART) have expanded reproductive options for infertile couples, among which surrogacy has emerged as an important alternative for individuals who are unable to conceive or carry a pregnancy.

Surrogacy is an assisted reproductive technology (ART) in which a woman becomes pregnant, carries, and

delivers a child for another individual or couple, who are the intended parents.² Surrogacy may be altruistic, where the surrogate receives only medical and pregnancy-related expenses, or commercial, where monetary compensation is involved. India became a major international hub for commercial surrogacy during the early 2000s because of affordable fertility services, availability of medical expertise, and socioeconomic disparities.³ However, rapid commercialization of surrogacy raised several ethical, legal, and social concerns including exploitation of economically vulnerable women, commodification of reproduction, inadequate legal protection for surrogate mothers, and disputes regarding parental rights.^{4,5}

Research conducted in India has highlighted the complex realities surrounding surrogacy. A qualitative study from

Assam reported that surrogate mothers often experience both social appreciation and stigmatization within their communities.⁶ Similarly, Karandikar et al found that financial necessity was a major motivating factor for women choosing gestational surrogacy in Gujarat, while many participants also reported social stigma and isolation during the surrogacy process.⁵ Another study exploring Indian surrogate mothers' perceptions regarding the ban on international surrogacy revealed concerns about loss of economic opportunities and reduced livelihood options following regulatory restrictions.⁷ Studies from other countries have also documented ethical debates surrounding surrogacy, including concerns related to reproductive autonomy, emotional attachment, commercialization of women's bodies, and the welfare of children born through surrogacy.^{8,9}

In response to increasing ethical and legal concerns, the Government of India enacted the The Surrogacy (Regulation) Act, 2021, which came into force in 2022. The Act permits only altruistic surrogacy and prohibits commercial surrogacy in India. It also defines eligibility criteria for intending couples and surrogate mothers, establishes National and State Surrogacy Boards, and emphasizes protection of surrogate mothers and children born through surrogacy.³ Despite these regulatory efforts, debates continue regarding inclusivity, reproductive rights, and ethical acceptability of surrogacy, particularly for same-sex couples, single individuals, and unmarried women.¹⁰

Healthcare professionals, especially nurses, play a vital role in reproductive and maternal healthcare services. Nursing professionals are directly involved in counselling couples, supporting surrogate mothers, coordinating fertility care, and addressing the psychological and ethical concerns associated with surrogacy. Their knowledge and attitudes can significantly influence patient care, communication, advocacy, and ethical decision-making in reproductive healthcare settings. However, despite the growing relevance of surrogacy in India, limited research has explored awareness and attitudes toward surrogacy among nursing professionals.

Most existing literature in India has primarily focused on legal, ethical, sociological, or surrogate mothers' perspectives, while the views of healthcare providers remain underexplored. Additionally, changing legislation and evolving societal attitudes toward surrogacy necessitate updated evidence regarding healthcare professionals' preparedness and perceptions. Understanding nursing professionals' awareness and attitudes is essential for strengthening reproductive healthcare education, improving counselling services, promoting ethical practice, and ensuring sensitive care for surrogate mothers and intended parents. Therefore, the present study was undertaken to assess the awareness and attitudes of nursing professionals towards surrogacy and surrogate children in the Indian context.

METHODS

Study design and setting

A descriptive cross-sectional study was conducted among nursing professionals at a selected tertiary care center in South India. The data was collected in the month of October 2025.

Participants and sampling

The study included registered nursing professionals who were currently employed on permanent basis and willing to provide informed consent were included in the study. Nursing professionals who were unavailable during data collection or unwilling to participate were excluded. The sample size for the present study was calculated using G*Power software (version 3.1). The calculation was performed for a cross-sectional descriptive study considering a medium effect size of 0.3, alpha error probability of 0.05, and statistical power of 0.80. Based on these assumptions, the required sample size (250-300 participants) was estimated to be adequate for detecting statistically meaningful differences and associations. A total of 300 participants were invited to participate in the study. After accounting for possible non-response and incomplete questionnaires, a total of 281 nursing professionals were recruited for the study with a response rate of 93.6%. Participants with different educational qualifications, including BSc Nursing and MSc Nursing, were included to obtain diverse professional perspectives. Convenience sampling technique was used to recruit the participants.

Data collection tool

Data were collected using a structured self-administered questionnaire which consisted of two sections:

Sociodemographic profile

Included variables such as age, gender, religion, and professional qualification and experience (5 items).

Attitudes towards surrogacy and surrogate children

This questionnaire was originally developed by Armuand et al.¹¹ In the present study, the questionnaire was adopted and modified to suit the Indian context with permission from the original authors. The modified questionnaire consisted of 25 items covering three domains: attitudes towards the legalization and financing of surrogacy (7 items), attitudes towards the family and the child's health following surrogacy (11 items), clinical experiences of surrogacy (7 items).

Participants' attitudes regarding the legalization and public funding of surrogacy were assessed using seven statements. The items explored participants' opinions on issues such as whether infertile heterosexual couples

should have legal access to surrogacy and whether surrogacy services should be covered under the publicly funded healthcare system in India. Responses were recorded using a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” For statistical analysis, the responses were later categorized into three groups: negative attitudes, neutral and positive attitudes.

Attitudes related to the family and the well-being of children born through surrogacy were evaluated using 11 items. These statements assessed participants’ perceptions of families formed through surrogacy, including beliefs about parental commitment toward children born through this method compared to other children. In addition, participants’ views regarding the physical and psychological health of surrogate-born children were explored, such as whether these children were perceived to experience poorer mental health outcomes. Responses were obtained on a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” For analysis, the responses were grouped into three categories: negative attitudes, neutral and positive attitudes.

Participants’ awareness of and exposure to families formed through surrogacy were assessed using seven items. Responses to these items were recorded in a dichotomous format as “yes” or “no.”

The above-mentioned tools were piloted among a small group of participants (n=30) to assess feasibility and clarity. Based on participants’ feedback, minor modifications were made to improve the tool before the main study.

Data collection procedure

After obtaining administrative permission, eligible participants were approached and informed about the purpose of the study. Written informed consent was obtained from all participants prior to data collection. Confidentiality and anonymity of responses were maintained throughout the study. Participants completed the questionnaire individually, and the average time required for completion was approximately 15-20 minutes.

Ethical considerations

Ethical approval for the study was obtained from the ethics committee at College of Nursing. Participation was voluntary, and participants were informed about their right to withdraw from the study at any time without penalty. Confidentiality of the collected data was ensured.

Data analysis

Data were entered and analyzed using appropriate statistical software. Descriptive statistics such as

frequency, percentage, mean, and standard deviation were used to summarize the demographic characteristics, awareness, and attitudes of the participants. Findings were presented in tables and narrative form.

RESULTS

A total of 281 nursing professionals participated in the study. The mean age of the participants was 37 years (SD, 6.61). Nearly half of the participants (46.6%) were aged between 31-40 years, followed by 29.2% in the 41-50 years age group. Most participants were female (67.6%) and belonged to the Hindu religion (65.5%). Regarding professional qualification, the majority held a BSc Nursing degree (80.4%), while 14.6% had MSc Nursing or other higher qualifications. The mean experience of the participants was 12 years (SD, 6.48) and a vast majority (89%) of them had more than 20 years of experience (Table 1).

Table 1: Sociodemographic characteristics of nursing professionals participating in the study (n=281).

Variables	Group	Frequency	Percentage
Age (years)	≤30	59	21
	31-40	131	46.6
	41-50	82	29.2
	>50	09	3.2
Gender	Male	91	32.4
	Female	190	67.6
Religion	Hindu	184	65.5
	Muslim	18	6.4
	Christian	79	28.1
Professional qualification	BSc(N)	226	80.4
	BSc(N)with diploma	14	5.0
	MSc (N)/Others	41	14.6
Professional experience (years)	<10	124	44.1
	11-20	128	45.6
	21-30	28	9.9
	>30	01	0.4

With respect to exposure and awareness regarding surrogacy, only 16.4% of participants had come across surrogate mothers and 13.9% had met families where a child was born through surrogacy. Less than half of the participants (43.8%) reported having sufficient knowledge about surrogacy to provide adequate care, whereas 56.2% felt they lacked adequate knowledge. However, a large majority (83.3%) expressed willingness to learn more about surrogacy. Most participants supported legalization of surrogacy in India (74.0%), but only 29.5% were aware of The Surrogacy (Regulation) Act, 2024. Commercial surrogacy was opposed by 90.4% of the respondents (Table 2).

Table 2: Awareness and exposure of nursing professionals towards surrogacy (n=281).

Variables	Group	Frequency	Percentage
Have you come across surrogate mothers?	Yes	46	16.4
	No	235	83.6
Have you met families where the child was born through surrogacy?	Yes	39	13.9
	No	242	86.1
Having sufficient knowledge about surrogacy and will be able to provide adequate care to the group	Yes	123	43.8
	No	158	56.2
Would you like to learn more on surrogacy?	Yes	234	83.3
	No	47	16.7
Do you support legalizing surrogacy in India?	Yes	208	74.0
	No	73	26.0
Are you aware of The Surrogacy (Regulation) Act, 2024 in India?	Yes	83	29.5
	No	198	70.5
Do you support surrogacy for commercial purpose?	Yes	27	9.6
	No	254	90.4

Table 3: Attitudes of nursing professionals towards eligibility and regulation of surrogacy (n=281).

Variables	Strongly disagree/ disagree		Neutral		Agree/strongly agree	
	N	%	N	%	N	%
Surrogacy for infertile heterosexual couples should be allowed	43	15.3	24	8.5	214	76.2
Surrogacy for same-sex female couples should be allowed	150	53.4	56	19.9	75	26.7
Surrogacy for same-sex male couples should be allowed	169	60.1	48	17.1	64	22.8
Surrogacy for single women should be allowed	117	41.7	47	16.7	117	41.6
Surrogacy for single men should be allowed	146	41.9	58	20.6	77	27.4
The child should have the right to know the surrogate mother's identity	103	36.6	109	38.8	69	24.6
Surrogacy should be publicly funded	125	44.5	88	31.3	68	24.2

Table 4: Perceptions of nursing professionals regarding surrogate children and family relationships (n=281).

Variables	Strongly disagree/ disagree		Neutral		Agree/strongly agree	
	N	%	N	%	N	%
Children conceived through surrogacy, and carried and born by another woman, often exhibit the same problems as children who are adopted	113	40.2	98	34.9	70	24.9
Surrogate children are as healthy as other children	56	19.9	67	23.8	158	56.3
Surrogate children risk worse physical health	133	47.3	99	35.2	49	17.4
Surrogate children risk worse mental health	103	36.6	106	37.7	72	25.6
Parents are more involved with their surrogate children than in other families	67	23.8	113	40.2	101	35.9
Surrogate child may experience social stigmatization	69	24.6	82	29.2	130	46.2
It is good for mature children to be told the identity of their surrogate mother	96	34.1	80	28.5	105	37.3
It is best for the surrogate child if the method of their conception is kept secret throughout their life	113	40.2	67	23.8	101	35.9
It is important that the parents are honest with the surrogate child about how they were conceived	56	19.9	68	24.2	157	55.9
The surrogate child's relationship with their parents could be damaged if they learn about their conception	99	35.3	93	33.1	89	31.7
Contact between the mature child and surrogate mother can be harmful for the child and/or the family	98	34.9	88	31.3	95	33.8

Regarding attitudes towards eligibility for surrogacy, 76.2% agreed that surrogacy should be allowed for infertile heterosexual couples. However, support was considerably lower for same-sex couples, with only 26.7% supporting surrogacy for same-sex female couples and 22.8% supporting it for same-sex male couples. Support for surrogacy among single women was evenly divided, with 41.6% agreeing and 41.7% disagreeing. Only 27.4% supported surrogacy for single men. Additionally, 24.6% agreed that children should have the right to know the surrogate mother's identity, while 44.5% disagreed with publicly funding surrogacy services (Table 3).

Participants' perceptions regarding surrogate children revealed mixed opinions. More than half of the respondents (56.3%) believed surrogate children are as healthy as other children, while only 17.4% and 25.6% believed surrogate children were at risk of worse physical and mental health outcomes, respectively. Nearly half of the participants (46.2%) felt surrogate children may experience social stigmatization. Furthermore, 55.9% agreed that parents should be honest with surrogate children about their conception, and 37.3% believed mature children should be informed about the identity of the surrogate mother. About one-third (35.9%) agreed that the method of conception should remain secret throughout life, while 31.7% felt that learning about their conception could damage the child's relationship with parents (Table 4).

Overall, the findings indicate moderate awareness but varying attitudes toward surrogacy among nursing professionals, with greater acceptance for altruistic surrogacy among infertile heterosexual couples and limited support for commercial surrogacy and surrogacy among same-sex couples or single men.

DISCUSSION

The present study explored the awareness and attitudes of nursing professionals towards surrogacy and surrogate children in the Indian context. The findings demonstrated moderate awareness regarding surrogacy, limited knowledge of surrogacy legislation, positive attitudes toward altruistic surrogacy for infertile heterosexual couples, and varying opinions regarding same-sex couples, single parents, and disclosure-related issues. These findings provide important insights into the preparedness of nursing professionals in addressing ethical and psychosocial issues related to surrogacy care.

In the present study, less than half of the participants perceived themselves as having adequate knowledge regarding surrogacy, although the majority expressed willingness to learn more. This finding indicates a substantial educational gap among nursing professionals regarding assisted reproductive technologies and surrogacy-related care. Similar findings have been reported in studies among nurses and healthcare

professionals where awareness regarding reproductive technologies and associated ethical issues was found to be limited despite favorable attitudes toward patient support and reproductive rights.^{12,13} The growing complexity of fertility care and evolving reproductive legislation necessitate enhanced education and training among healthcare providers.

The present study also revealed that only a minority of participants were aware of The Surrogacy (Regulation) Act, 2021, although a majority supported legalization of surrogacy in India. This finding is concerning because nurses play a vital role in counselling intended parents, surrogate mothers, and families seeking fertility services. Previous Indian literature has emphasized the importance of legal and ethical awareness among healthcare providers in the context of assisted reproductive technologies.^{14,15} The implementation of the Indian surrogacy legislation has significantly altered the practice of surrogacy by prohibiting commercial surrogacy and permitting only altruistic arrangements. Healthcare professionals therefore require updated knowledge regarding eligibility criteria, ethical obligations, and patient rights under the current legal framework.

A large proportion of participants in the present study supported surrogacy for infertile heterosexual couples, while support for same-sex couples and single men was considerably lower. These findings reflect prevailing sociocultural norms in India where traditional family structures continue to influence attitudes toward parenthood and reproductive rights. Similar sociocultural trends have been reported in Indian and international studies examining public and healthcare-provider attitudes toward surrogacy and assisted reproduction.^{3,16} Studies conducted in western countries generally report greater acceptance of reproductive autonomy among same-sex couples and single individuals, whereas Asian societies often demonstrate more conservative views shaped by cultural, religious, and legal factors.

The findings related to surrogate children revealed that most participants believed surrogate children are as healthy as other children, which indicates generally positive perceptions regarding child outcomes following surrogacy. However, many participants also believed that surrogate children may experience social stigmatization and expressed mixed opinions regarding disclosure of conception and surrogate identity. Similar concerns regarding identity, disclosure, emotional adjustment, and family relationships have been described in earlier international studies on assisted reproduction and surrogacy.^{6,13} Existing evidence suggests that children born through surrogacy generally demonstrate healthy psychological adjustment when raised in supportive family environments, although social stigma and secrecy surrounding conception may influence family dynamics.

Another important finding of the present study was the strong opposition toward commercial surrogacy among

nursing professionals. This finding is consistent with previous Indian studies and ethical analyses that highlighted concerns regarding exploitation of economically vulnerable women, commodification of reproduction, inadequate living conditions, and reproductive tourism in India.^{3,4} Earlier Indian studies involving surrogate mothers reported that financial hardship and socioeconomic vulnerability were major motivations for participating in commercial surrogacy arrangements.^{6,9} These ethical concerns contributed to the enactment of restrictive surrogacy legislation in India. The present findings indicate that nursing professionals largely support ethical regulation and protection of surrogate mothers rather than commercialization of reproductive services.

The novelty of the present study lies in its focus on nursing professionals' awareness and attitudes toward surrogacy and surrogate children within the contemporary Indian legal and sociocultural context. Most previous Indian studies have primarily focused on surrogate mothers' experiences, ethical debates, legal challenges, or public perceptions, whereas limited evidence exists regarding the perspectives of nursing professionals directly involved in reproductive and maternal healthcare. Furthermore, the study was conducted following implementation of The Surrogacy (Regulation) Act, 2021, thereby providing updated evidence regarding healthcare professionals' preparedness and educational needs in surrogacy-related care.^{3,14}

The findings of the present study have important implications for nursing education and practice. Incorporating assisted reproductive technologies, reproductive ethics, surrogacy legislation, and counselling approaches into undergraduate and continuing nursing education programs may improve nurses' competency in reproductive healthcare settings. Structured training programs focusing on ethical sensitivity, communication skills, legal awareness, and psychosocial care may further strengthen nursing professionals' preparedness to support intended parents, surrogate mothers, and children born through surrogacy.

The present study has a few limitations. Since the study used a cross-sectional design, it could assess awareness and attitudes only at one point in time. The study was conducted among nursing professionals from selected institutions using convenience sampling; therefore, the findings cannot be generalized to all nursing professionals in India. The data were collected using self-reported questionnaires, which may have led to response bias or socially desirable answers, especially because surrogacy is a sensitive topic. In addition, the study mainly focused on quantitative assessment and did not explore detailed personal, cultural, or ethical perspectives related to surrogacy. The psychometric properties for the data collection tool was not established in this study. Despite these limitations, the study provides useful information

regarding nursing professionals' awareness and attitudes towards surrogacy in the Indian context.

CONCLUSION

The study found that nursing professionals had moderate awareness and varied attitudes towards surrogacy. While most participants supported altruistic surrogacy for infertile heterosexual couples, awareness regarding surrogacy legislation was limited. The findings highlight the need for improved education and training on surrogacy, reproductive ethics, and legal aspects to promote informed and sensitive nursing care in reproductive healthcare settings.

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