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Original article

Assessing awareness of Pre-Conception and Pre-Natal Diagnostic Techniques Act among Pregnant women of a tertiary care centre – A cross sectional study

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Abstract

Introduction: Government of India established Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act in an attempt to curtail the problem of female foeticide and declining sex ratio. **Objective:** This study was conducted to study the knowledge and attitude regarding the PCPNDT Act among pregnant women in a tertiary care hospital of Sangli, Maharashtra. **Materials and Methods:** This cross sectional study was done among 302 pregnant women. All pregnant women who visited the Department of Radio-diagnosis for antenatal sonography and gave an informed written consent were included in the study. Data pertaining to knowledge and attitude of participants regarding PCPNDT act was collected. **Results:** Out of 302 participants, only 42.7% of participants were aware of the Act. Only 27.9% knew that mother is not punishable under the act. About 69.8% of participants were unaware of f-form and consent form filled before antenatal sonography. Majority (95.6%) of participants felt that there is need to raise awareness about the act. Need for strong advertisement was felt by 89% of women. **Conclusion:** There is a need to educate pregnant women about this Act and its legal provisions to prevent gender selection and preference.

Keywords: Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act, Pregnant women, Sex determination

Introduction:

As per the recent census report 2011, the sex ratio in India was 943[1]. However according to the NFHS-5 (2019-2021) the sex ratio at birth is 929 females per 1000 males[2]. As of western Maharashtra, in certain districts like Satara, Sangli, Kolhapur, Solapur, Beed, Nagar, Jalgaon, Usmanabad the female ratio is decreasing at a threatening rate. In western Maharashtra in many well-known communities, it is difficult to find a girl for marriage. [3]

This ever declining sex ratio is a matter of great concern as it indicates a strong gender preference towards male child leading to reprehensible acts such as sex selective abortions. Various social, cultural, religious and economic factors influence this gender preference.

Female foeticide is a well-known practice for centuries in India. With the availability of new technology of sex determination, the bias suffered by Indian women from birth to the grave is extended now from womb to tomb[4] . As per National Family Health Survey 4, 5% of women and 10% of men want more sons than daughters[5]. This has led to declining sex ratio in Inida due to increased sex selective abortions and female foeticide[6].

The Government of India introduced the pre-natal diagnostic techniques act (PNDT) in 1994 and that was later amended as Pre-conception and Pre-natal Diagnostic Techniques act (PCPNDT) in 2002-03[6]. The objective of the act was to prevent the misuse of diagnostic techniques in sex selection and sex selective abortions. Under this

act all individuals and institutions must register under the Act to legally purchase an ultrasound. Violation of this act can lead to a fine of Rs 10,000 and up to three years imprisonment for a first offence, with greater fines and longer terms of imprisonment for repeat offenders[7]. Mass media via radio and local news channels is used to spread awareness among the public on this issue. However, all these measures have met with limited success to achieve the desired results with no apparent improvement in the sex ratio. Studies have shown that many women were aware of clinics that help in sex determination illegally, and agree to utilizing them[6]. Awareness and attitude of pregnant women will give an insight to this problem. [9]The present study was conducted among pregnant women with the aim of studying their knowledge and attitude regarding the PCPNDT Act.

Materials and Methods:

A cross-sectional study was conducted to explore the knowledge and attitude regarding the Pre-Conception and Pre-Natal Diagnostic Techniques (PCPNDT) Act among pregnant women in a tertiary care hospital of Sangli district in Maharashtra. Data was collected after obtaining ethical clearance from Institutional Ethical Committee. A study period of 3 months (October 2020 to December 2020) was considered. All pregnant women who visited the Department of Radio-diagnosis for antenatal sonography within this period and gave an informed written consent were included in the study. Women with pregnancy complications, history of previous births with congenital anomalies and those involved in medico legal cases were excluded from the study. A total of 302 women who fulfilled the inclusion and exclusion criteria were selected consecutively. The study instrument was a pretested, semi-structured questionnaire. A pilot study was conducted to ascertain the feasibility of using the questionnaire and methodology. Revalidation was done after pilot study and was tested for face and content validity. The questionnaire included the details pertaining to age, education, occupation, parity of the participants and questions to assess the knowledge were asked in terms of awareness regarding the act and its legal implications and attitude of the participants regarding the act was assessed by asking whether they felt strict punishment was appropriate or there is need to improve awareness among general population. Data was entered in MS Excel and analysed using SPSS 20.0.

Results

A total of 302 pregnant women were assessed for their knowledge and attitude regarding prenatal sex determination and PCPNDT Act using a pre tested semi-structured questionnaire which was then used for analysis of data.

The summary of demographic data is tabulated in table No. 1. The age of the participants ranged between 18 to 37 years with the mean age of 26 years. Most participants were in the age group of >20 years (74.2%), 62.6% were educated up to high school. Majority (92.1%) of participants were housewives. Among the participants, 50.99% were multipara whereas 49% were primipara.

Table 1- Sociodemographic profile of study participants

Characteristics		**(N = 302) n(%)**
Age in years	≤ 20	78 (25.8)
	>20	224 (74.2)
Education	Up to high school	189 (62.6)
	PUC/ Graduate/ Post Graduate	113 (37.4)
Occupation	Employed	24 (7.9)
	Unemployed	278 (92.1)
Parity	Primipara	148 (49)
	Multipara	154 (50.99)

Table No. 2 shows the awareness of the participants regarding PCPNDT Act and its legal provisions. Total 57.2% of participants (n=173) were not aware of a government act for prevention of sex determination. Amongst those who were aware, 44.1% (n=57) received information about the act through media and 47.2% (n=61) through health workers. Most of the participants were not aware regarding legal provisions for sex determination (62.7%, n=81) and only few participants (27.9%, n=36) were aware as to mother is not punishable under violation of act. Majority of the participating pregnant women (69.8%, n=211) were not aware of the F-form and consent form that they had signed before undergoing the ultrasonography was for the PCPNDT Act.

When the participants were assessed for their attitude towards PCPNDT Act, 95.6% responded that mindset of people should be changed instead of imposing punishment (n=289). About 89% felt that that the advertisement regarding the act should be stronger. Participants (98.3%, n=297) were willing to educate people about PCPNDT Act and motivate them against sex determination and sex selective abortions (Table 3).

Table 2- Awareness regarding PCPNDT act and its legal provisions

Variable		n (%)
Awareness Of PCPNDT Act	Yes	129 (42.7)
	No	173 (57.2)
Source Of Awareness About Act (N=129)	Media	57 (44.1)
	Family	11 (8.5)
	Health workers	61 (47.2)
Awareness of legal provisions of act (N=129)	Yes	48 (37.2)
	No	81 (62.7)
Who is not punishable under act (N=129)	Mother	36 (27.9)
	Father	3 (2.3)
	Doctor	3 (2.3)
	All punishable	72(55.8)
	None punishable	15 (11.6)
Awareness of f-form and consent form filled	Yes	91 (30.1)
	No	211 (69.8)

Table 3- Attitude of participants towards PCPNDT act (N=129)

Variable		(N = 302) n(%)
Mindset should be changed instead of punishment	Yes	289 (95.6)
	No	13(4.4)
Need for strong advertisement	Yes	269 (89)
	No	33 (11)
Willing to educate other females	Yes	297 (98.3)
	No	5 (1.6)

It was seen that 73.5% of women who were aware of the act were educated above PUC as compared to 26.5 who were unaware (p = 0.00). Awareness was more among women who were employed as compared to women who were unemployed (p=0.000). Higher number of participants belonging to rural area were aware regarding the act as compared to participants from urban area (p=0.000) (Table 4)

Table 4. Association between sociodemographic profile and awareness regarding PCPNDT act (N=302)

Variable	Characteristics	Aware N = 129 n(%)	Unaware N = 173 n(%)	Total	
Age	≤ 20	26 (33.3)	52 (66.7)	78 (25.8)	p = 0.052
	> 20	103 (46)	121 (54)	224 (74.2)	
Education	Up to high school	46 (24.3)	143 (75.7)	189 (62.6)	p = 0.000*
	PUC/ Graduate/ Post Graduate	83 (73.5)	30 (26.5)	113 (37.4)	
Occupation	Employed	17 (70.8)	7 (29.2)	24 (7.9)	p = 0.004*
	Unemployed	112 (40.3)	166 (59.7)	278 (92.1)	
Residence	Urban	84 (36.7)	145 (63.3)	229 (75.8)	p = 0.000*
	Rural	45 (61.6)	28 (38.4)	73 (24.2)	
Type of family	Joint	125 (42.1)	172 (57.9)	297 (98.3)	p = 0.089
	Nuclear	4 (80)	1 (20)	5 (1.7)	
Number of children	≤1	113 (45.7)	134 (54.3)	247 (81.8)	p = 0.024*
	>1	16 (29.1)	39 (70.9)	55 (18.2)	

*Significant association at p value < 0.05.

Table 5. Association between sociodemographic profile and awareness regarding legal provisions of PCPNDT act (N=129)

Variable	Characteristics	Aware N = 107 n(%)	Unaware N = 22 n(%)	Total	
Age	≤ 20	17 (65.4)	9 (34.6)	26 ( )	p = 0.008*
	> 20	90 (87.4)	13 (12.6)	103 ( )	
Education	Up to high school	35 (76.1)	11 (23.9)	46 ( )	p = 0.12
	PUC/ Graduate/ Post Graduate	72 (86.7)	11 (13.3)	83 ( )	
Occupation	Employed	16 (94.1)	1 (5.9)	17 ( )	p = 0.18
	Unemployed	91 (81.2)	21 (18.8)	112 ( )	
Residence	Urban	71 (84.5)	13 (15.5)	84 ( )	p = 0.51
	Rural	36 (80)	9 (20)	45 ( )	
Type of family	Joint	104 (83.2)	21 (16.8)	125 ( )	p = 0.66
	Nuclear	3 (75)	1 (25)	4 ( )	
Number of children	≤1	92 (81.4)	21 (18.6)	113 ( )	p = 0.22
	>1	15 (93.8)	1 (6.2)	16 ( )	

*Significant association at p value < 0.05.

Table 6. Association between sociodemographic profile and awareness regarding f-form and consent form filled

Variable	Characteristics	Aware N = 107 n(%)	Unaware N = 22 n(%)	Total	
Age	≤ 20	15 (19.2)	63 (80.8)	78 (25.8)	p = 0.015
	> 20	76 (33.9)	148 (66.1)	224 (74.2)	
Education	Up to high school	28 (14.8)	161 (85.2)	189 (62.6)	p = 0.00*
	PUC/ Graduate/ Post Graduate	63 (55.8)	50 (44.2)	113 (37.4)	
Occupation	Employed	15 (62.5)	9 (37.5)	24 (7.9)	p = 0.00*
	Unemployed	76 (27.3)	202 (72.7)	278 (92.1)	

Residence	Urban	64 (27.9)	165 (72.1)	229 (75.8)	p = 0.143
	Rural	27 (37)	46 (63)	73 (24.2)	
Type of family	Joint	89 (30)	208 (70)	297 (98.3)	p = 0.62
	Nuclear	2 (40)	3 (60)	5 (1.7)	
Number of children	≤1	81 (32.8)	166 (67.2)	247 (81.8)	p = 0.03*
	>1	10 (18.2)	45 (81.8)	55 (18.2)	

*Significant association at p value < 0.05.

Discussion

The declining female population of India is a matter of great concern. Despite the introduction of PCPNDT act by government of India the awareness regarding the act is lacking among pregnant women. In this study it was seen that only 42.7% of women were aware of the presence of the act. Similarly, awareness of the presence of the PCPNDT Act was found to be < 50% in Indore and slums of Delhi[10,11]. However in a study done by Srivastav et al in UP, only 32% were aware of the PCPNDT act [2]. The reason for higher awareness in this study can be attributed to increased literacy rate and the vast role of mass media and health workers in spreading awareness about it.

Our study showed that among women who were aware of PCPNDT act (n=57 44.1%) came to know about the act from media and (n=61, 47.2%) came to know about it from health workers. Another study done by Kumar N, et al in 2014 showed that friends and relatives were the main sources of information (n=76,62.8%) followed by media (n=43,35.5%) and health care personals (n=07,5.8%) thus suggesting that efforts in awareness generation through health care workers has improved[12].

Out of those aware only few (n=129, 37.2%) knew about the legal provisions of the act. About 27.9% of women said that mother is also punishable under the act. Whereas in the studies conducted at Bengaluru[2]and Puducherry[13] , a large number of participants were aware of the PCPNDT Act and its legal provisions.

Awareness of F-form and consent form filled prior to sonography was also very low with only 30.1% women being aware about it. Over all the knowledge regarding PCPNDT Act was less in this study compared to knowledge of women in Puducherry by about 47%. High literacy of women in Pondicherry (74.13% for females) may have played a role. [13]

According to socio-demographic profile of the participants, 73.5% of women belonging to PUC or above literacy status group knew about PCPNDT act. Also, 70.8% of employed women and 61.6% of rural women had awareness about PCPNDT act respectively. The study population, knowing PCPNDT act, had a significant association in following demographics as literacy status, working profile and residence. In a study done by N K Gaur, et al in 2018 it was seen that the study population, knowing PCPNDT act, had a significant association with age, literacy status, working profile, residence and socioeconomic status[14] . One more study done in North India showed that lower level of education was significantly associated with declining awareness about PCPNDT act [15].

Regarding attitude of participants towards the act, 89% of participants felt that there is need for strong advertisement and 95.6% of participants felt that mindset of the participants should be changed instead of punishment. However in another study done in Indore, 86 (66.2%) told us that a legal punishment must be there and 124 (95.4%) wanted a strict law against it. 112 (86.2%) were ready to motivate people around them about the act whereas in the current study 98.3% of women were willing to educate other women about the act[14].

Conclusion

Study conducted revealed awareness of PCPNDT Act is poor in Sangli district of Maharashtra. To prevent the malady of sex selective abortions in the society there is a need to reinforce awareness generation both by health care workers and media about the Act among people and ensure its effective implementation as well. A combined effort of the community and the doctors will help in putting an end to the shameful practice of female foeticide.

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