

Awareness and Attitudes Regarding Prenatal Sex Determination, Pre-Conception and Pre-Natal Diagnostic Techniques Act (PCPNDTA) among Pregnant Women in Southern India

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ABSTRACT

Objectives: The present study was conducted to assess the awareness and attitude regarding prenatal sex determination and Pre-conception and Pre-natal Diagnostic techniques Act among pregnant women.

Materials and Methods: A cross sectional study was carried at tertiary care teaching hospitals of Kasturba Medical College in Mangalore, India among 132 pregnant women. Data was collected using a pre-tested semi-structured questionnaire and was analysed using Statistical Package for Social Sciences (SPSS) version 11.5 and results were expressed in percentages.

Results: The study included 132 participants and the mean

age of study subjects was around 27 y. Majority of the study subjects (91.7%) knew that prenatal sex determination was possible. Three fourth (74.4%) of the participants prenatal sex determination was a punishable offence. One of the participants was ready to terminate pregnancy if sex of the fetus was revealed to be female before second trimester. Majority of participants (67.4%) were willing to educate people about PCPNDT act and motivate them against sex determination and sex selective abortions.

Conclusion: Our study showed that higher proportion of participants knew about the prenatal sex determination and it was a punishable offence, still majority of them preferred to know the sex of unborn child which shows the need to implement the act effectively.

Keywords: Ante-natal, Mangalore, PCPNDT act, Sex-ratio, Sex-determination

INTRODUCTION

The sex ratio is calculated as the number of males per one hundred females in a population globally, whereas in India it is defined as number of females per 1000 males [1,2]. India is one of the few countries in the world which has not shown an improvement in the sex ratio over the year. Sex ratio has been declining in India through decades since 1901 [3]. It has been estimated at 933 in India during the recently conducted census of 2011 [2]. Various factors that can be attributed to the decline in sex-ratio include increased sex selective female abortions, and female foeticide. One of the most important preventable factors among these is the prevention of sex selective female abortions [4]. The sex selective abortions are reported across India irrespective of the social class, region or religion of the individuals, and around 70 lacs such cases occur in India every year. Usage of modern sophisticated diagnostic techniques for sex determination and preconception sex selection has been attributed to sex selective abortions and thus, may be a major contributor in decline of the sex ratio. The business of sex selection and abortion has an estimated turnover of 500 crores with around 36000 sonography centres spread all over the country, and 10 lacs female embryos being destroyed every year in India [5]. The main reason for female foeticide is based on a common perception that the female child is an economic burden on the family due to dowry problems and vulnerability of them for sexual harassment, whereas males carry out family business and support parents at a later age [6]. The government of India introduced the Pre-Natal Diagnostic Techniques Act (PNDT) that was later amended as Pre-Conception and Pre-Natal Diagnostic Techniques Act (PCPNDT) with the objective of preventing the misuse of diagnostic techniques and sex selection [7]. Facilities using prenatal-diagnostic technique

were made to register compulsorily and strong penal provisions were introduced for people found to be violating the rules laid in the PCPNDT Act. Mass media was used to create awareness on the issue among the public. Help from the spiritual and religious leaders was sought for creating awareness in the public. All these measures and efforts have failed to achieve the desired results with no apparent improvement in the sex ratio [8]. Although the sex ratio at the national level is very low, Dakshina Kannada, a coastal district in South India has shown a favorable sex ratio of 1014 females per 1000 males. However, the child sex ratio in the district has dropped to 946 in 2011 from 952 in 2001 which is only marginally higher than the state average of 943 Government of India [9]. The present study was conducted among pregnant women from the coastal district of south India with the aim of studying their knowledge and attitude regarding prenatal sex determination and PCPNDT Act.

MATERIALS AND METHODS

The present cross-sectional study was conducted at tertiary care teaching hospitals of Kasturba Medical College in Mangalore. The study population included pregnant women attending the antenatal care clinics and admitted in the above mentioned hospitals. The sample size of 132 was calculated by considering the awareness among antenatal mothers for prenatal sex determination as 50% with a relative precision of 20% and 95% confidence interval with a non-response error of 20%.

Institution Ethics Committee approval was obtained prior to the commencement of the study. After obtaining the permission from the Medical superintendent of the hospitals, the study participants were briefed about the nature and the purpose of the study, and were included in the study after taking a written informed consent.

| Possibility of prenatal sex determination (N=132) | Number (%) |
|---|-------------|
| Is possible | 121 (91.7%) |
| Not possible | 05 (03.8%) |
| Don't know | 06 (04.5%) |
| Source of information (N=121) | |
| Friends / Relatives | 76 (62.8) |
| Media | 43 (35.5) |
| Health Care Personnel | 07 (05.8) |
| Others | 14 (11.6) |
| Methods of sex determination (N=121) | |
| Ultrasonography | 108 (89.2) |
| Don't Know | 13 (10.7) |
| Places where sex determination can be done (N=121) | |
| Government hospital | 08 (6.6) |
| Private hospital | 29 (24.6) |
| Both | 68 (56.6) |
| Don't know | 16 (13.2) |

[Table/Fig-1]: Awareness about prenatal sex determination among the participants

| Prenatal sex determination is punishable (N=121) | N (%) |
|--|-----------|
| Yes | 90 (74.4) |
| No | 20 (16.5) |
| Don't Know | 11 (09.1) |
| Who will be punished? (N=90) | |
| Doctors who facilitate prenatal sex determination | 31 (34.4) |
| People who seek prenatal sex determination | 06 (06.7) |
| Both | 45 (50.0) |
| Don't know | 08 (08.9) |
| Punishment for doctors (N=76) | |
| Imprisonment | 07 (09.2) |
| Fine | 21 (27.6) |
| Both | 04 (05.3) |
| Don't know | 44 (61.5) |
| Punishment for seekers of prenatal sex determination (N=51) | |
| Imprisonment | 06 (11.0) |
| Fine | 16 (30.8) |
| Both | 02 (03.8) |
| Don't know | 28 (53.8) |

[Table/Fig-2]: Awareness regarding penal provisions in the PCPNDT Act

The participants were selected using convenience sampling. The data was collected using a pre-tested semi-structured questionnaire consisting of 4 sections (Section A: Participants general information, section B: Awareness about pre-natal sex determination, Section C: Awareness regarding penalization proposed in PCPNDT, Section D: Attitude towards prenatal sex determination Act).

The details obtained were entered and analysed using Statistical Package for Social Sciences (SPSS) version 11.5, and the results were expressed in percentages.

RESULTS

A total of 132 pregnant women were assessed for their awareness and attitude regarding prenatal sex determination, and PCPNDT Act. Thus, giving a 100% response rate. The age of the participants ranged between 19 and 42. The majority of the participants were in the age group of 26-35 y (n=80, 60.6%). The mean age of study participants was around 27 y (SD=4.099). Most of the participants were Hindus (n=117, 88.6%) followed by Christians (n=10, 7.6%) and Muslims (n=5, 3.8%). More than half of the study participants

| Question | Yes N (%) | No N (%) | Don't Know N (%) |
|---|-----------|------------|------------------|
| Would you prefer to know the sex of your unborn child? | 70 (47.0) | 62 (53.0) | - |
| Would you terminate the pregnancy if the sex of fetus is revealed to be a female? | 01 (0.8) | 131 (91.2) | - |
| Should there be punishment for prenatal sex determination? | 78 (59.1) | 35 (26.5) | 19 (14.3) |
| Will you educate others about the PCPNDT Act? | 89 (67.4) | 13 (09.8) | 30 (22.7) |

[Table/Fig-3]: Attitude of the participants towards the PCPNDT Act

were housewives (n=72, 54.5%). All, except one participant were literate and had completed at least primary education.

[Table/Fig-1] shows awareness of the study participants towards prenatal sex determination. The majority of the participants (n=121,91.7%) knew that prenatal sex determination was possible. 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%) regarding prenatal sex determination. When participants were asked regarding the possible method for sex determination, around 90% of the pregnant women (108) knew that ultrasonography was the method of sex determination. More than half of the study participants (n=68, 56.2%) opined that sex determination can be done in both private and government set-ups while 18.8% believed that it can be done only in private hospitals.

[Table/Fig-2] shows the awareness of the participants regarding the prenatal diagnostic technique Act (PCPNDTAct). The majority of the participants (n=90, 74.4%) said that prenatal sex determination is a punishable offence. Half of the subjects (n=45, 50%) were aware that both the doctors who facilitate and those who seek prenatal sex determination are punishable, while (n=31, 34.4%) said that only doctors are punishable for the offence.

When the participants were assessed for their attitude towards PCPNDTAct, more than half of them (59.1%) said that it is right to punish people who perform prenatal sex determination. 47% of the participants said that if given a chance they would prefer to know the sex of their unborn child. One of the pregnant women was even ready to terminate the pregnancy if the sex of fetus is revealed to be a female before second trimester. The majority of the participants (n=89, 67.4%) were willing to educate people about PCPNDTAct and motivate them against sex determination and sex selective abortions [Table/Fig-3].

DISCUSSION

Globally, 36 countries have adopted national laws or policies on sex selection [10]. In India, the first legal response to curb the practice of sex determination and sex selection came into effect in the year 1994 through the introduction of PNNDT Act (Prenatal Diagnostic Techniques Act), which was amended later in 2004 as Preconception and Prenatal Diagnostic Techniques Act (PCPNDT) to make it a more powerful instrument. After nearly a decade of implementation, only 600 cases have been registered and 20 people convicted for violating the rules and regulations laid in the Act [4]. Low registration and conviction rates may be due to improper implementation of the Act as many centres may resort to actions contradicting the rules and regulations laid in the Act without being caught. It may also be related to the lack of awareness regarding the Act among the lay people, especially underprivileged women. Studies conducted at Mumbai, Maharashtra and Bareilly, Uttar Pradesh has shown that 73.5% and 80% of the women respectively had an updated information regarding possibility of prenatal sex determination [11,12]. In our study higher proportion of women (91.1%) had awareness regarding prenatal sex determination which could be due to the high literacy rate and education rate in Mangalore [2]. When respondents were asked regarding the source of information in this regard, the majority of the participants expressed that friends and relatives were the main source of information. Our observations

were similar to the study reported from the Rajput community of Jammu where word of mouth by people was the main source of information [13]. However, in a study conducted at Meerut and Hassan, main source of information was media followed by friends/relatives [14,15]. In the present study the majority of the participants (90%) knew that ultrasonography was the technique used for sex determination. This observation was similar to that reported in a study conducted in Mumbai, Maharashtra [11]. A marginally lower proportions of subjects were aware of ultrasonography as a technique for sex determination in studies conducted at Uttar Pradesh and Hassan district in Karnataka [12,15]. In stark contrast, a study conducted at Chandigarh in North India observed that only 11.6% of the married women residing in slums had awareness regarding sex determination techniques [16]. More than 90% of the study participants knew about the places where sex determination can be conducted which is similar to that reported in earlier studies [11,15]. However, unlike the above mentioned studies, more than three-fourth of the women residing in slums of Chandigarh did not know about the places where sex determination can be conducted [16]. According to the observations of the present study, about three fourth of the participants were aware that prenatal sex determination was a punishable offence but only half of them knew about the punishment for the offence. This observation was in conformity with the findings of a study conducted in Chandigarh. Whereas in studies conducted at Hassan and Mumbai only half of the participants knew that prenatal sex determination was a punishable offence [11,15,16]. Nearly half of the respondents in the present study said that they would prefer to know the gender of their unborn child which is higher than that reported in a similar study conducted in Uttar Pradesh [12]. Only one participant of the present study (0.8%) agreed that she would opt for termination of pregnancy if the sex of fetus is revealed to be a female. Our observations are contrastingly lower than reported in other studies conducted at Meerut and Bareilly in Uttar Pradesh, and Jamnagar, Gujarat where a higher proportion of participants ranging between 7.4% and 20.5% showed a preference for female feticide if the sex of fetus is revealed to be a female [12,14,17]. In a study conducted in Mumbai, Maharashtra, the majority of the respondents were willing to educate others about PCPNDT Act which is similar to the observations of the present study [11]. In our study higher proportion of participants knew about the prenatal sex determination and it was a punishable offence, still a majority of them preferred to know the sex of unborn child which shows the need for implementation of the Act effectively. Apart from legislative measures people also need to be educated about the ethical issues related with female feticide. The present research was a hospital based study and our results should not be extrapolated to outer settings. Similar studies in other settings on a larger sample size are thus proposed.

CONCLUSION

In our study higher proportion of participants knew about the prenatal sex determination and it was a punishable offence, still a

majority of them preferred to know the sex of unborn child which shows the need for implementation of the Act effectively. Apart from legislative measures people also need to be educated about the ethical issues related with female feticide.

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