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A Comprehensive Study on the Socio-Legal Impact of the Preconception and Prenatal Diagnostic Techniques Act in India

Sushil Purohit
Research Scholar
School of Legal Studies
Jigyasa University,
Dehradun, Uttarakhand
Email: sushilpurohit1@gmail.com

Dr. Bhupnesh Kumar
Assistant Professor
School of Legal University
Jigyasa University,
Dehradun, Uttarakhand

Abstract

Indian society has struggled with female feticide for decades, and the misuse of contemporary prenatal diagnostic techniques for sex-selected abortions has encouraged it. Therefore, the current study aimed to study the Socio-Legal Impact of the Preconception and Prenatal Diagnostic Techniques Act in India. The study employed primary and secondary data, where primary data was gathered from 385 respondents (females and their family members) from India, who were randomly selected from the targeted population. The responses have been collected through a structured questionnaire. The findings revealed that the implementation of the PCPNDT Act has significantly reduced the prevalence of sex-selective practices in India, along with the improved accessibility and utilization of prenatal care services among women. A significant relationship has also been found between public awareness and perception of the PCPNDT Act's provisions and societal attitudes toward gender equality and responsible reproductive health practices. It has been concluded that there is no denying that the act has somehow improved the condition in comparison to past times, however, still, there are some loopholes that need to be addressed for a better future. The study implied that effective enforcement, public awareness campaigns, and addressing underlying societal norms remain essential to ensure gender equality.

Keywords

Sex-Selective Practices; Socio-Legal Impact; PCPNDT Act; Gender Equality; Sex-Ratio

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Sushil Purohit
Dr. Bhupnesh Kumar

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Introduction

Throughout history, India has been home to numerous backward and demeaning customs, like sati Pratha, child marriage, dowry, and female feticide. The methodical and steady legal and societal endeavor has led to the elimination of many of them (Garg & Nath, 2008). However, It's important to take into account that eradicating these traditions was not very simple because they had their roots in the very foundation of the early social system, in which women played a certain function that was deemed "not equal" to that of males. The favored sex of newborn infants in South Asian nations has consistently been male. India thus has a larger proportion of men than girls. Considering that historically, the ratio of boys to girls born in India is quite low, this disparity increases as age declines (Singh, 2022). One expression of the ' social attitude' that has proven extremely resilient and endured and crept into today's society is female feticide. Over the years, the country's unequal sex ratios have persisted despite repeated initiatives by government agencies and social organizations (Tabaie, 2017; Phutke, et al., 2018). The most recent national census in India, which was conducted in 2011, revealed that there were only 914 females for every 1000 men in the age group of zero to six years old. It proves that female feticide is an alarmingly prevalent practice in India (Tabaie, 2017).

Feticide is a complicated and varied kind of institutional violence against women. The social, cultural, and religious fabric of India is largely patriarchal, contributing extensively to the secondary position of women, as stated in the 2006 annual report of the "Indian Ministry of Health and Family Welfare". The elevated numbers of female feticide are indicative of women's subordinate position in society (Singhal, 2022). Because of their inferior earning potential, the male-dominated social framework that controls inheritance, and the pervasiveness of the dowry system, women are at a disadvantage. The economic and social progress achieved in India has accomplished nothing to improve women's standing in society. The well-off and the educated in India are not immune to sex selection, according to recent data (Subramanian & Corsi, 2011).

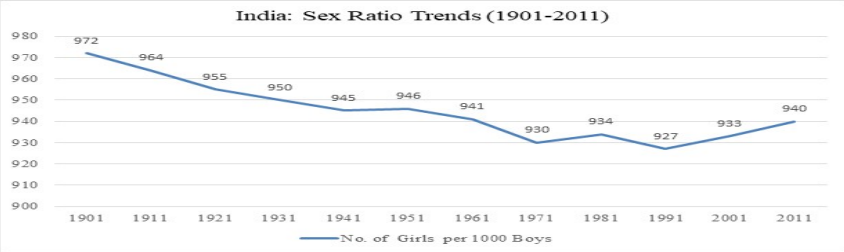

Figure 1: Sex Ratio Trends in India as per Census from 1901 to 2011

Source: Office of the Registrar General of India, Ministry of Home Affairs

The Preconception and Prenatal Diagnostic Techniques (PCPNDT Act) was enacted in 2003 as an update to the "Prenatal Diagnostic Technique Act (PNDT Act) of 1994". Whether the Act's ineffectiveness or poor implementation is to blame for the inability to significantly decrease female feticide is unclear. However, the PCPNDT Act's unexpected result is obvious. The Act established a system wherein anybody or any entity, irrespective of the extent to which the intended purpose is for prenatal diagnostics, must be registered under the Act to lawfully obtain an ultrasound. In addition, the Act requires the registration of all ultrasound practitioners, including those who use ultrasound for echocardiography and those who use ultrasound for central vascular access (Tabaie, 2017).

The PCPNDT Act

To prevent female feticide, the PNDT Act was created in 1994. It regulates and outlaws the use of prenatal methods of abortion, like amniotic fluid collection and chorionic villi sampling, as well as sex determination and selection. A modification to the statute was enacted in 2003 that included Ultrasonography (USG) clinics in the scope of this regulation because of the obvious failure of this legislation to enhance sex ratios over time (Onkar & Mitra, 2012). Pregnancy centers that use ultrasound (USG) or other methods to determine a fetus's gender before or during pregnancy are required by law to register with the government and face penalties if they participate in or facilitate sex determination (Mani, 2012). The relatives of pregnant women who inquire about the child's gender are likewise at risk of being penalized for their actions. If the provisions of the Act are violated, the offender has a possible penalty of up to three years in jail and a possible fine of up to ten thousand rupees; if it is a repeat offense, the offender faces up to five years in prison and a possible fine of fifty thousand rupees. If the registered practitioner is found guilty of violating section 23 of the Act, their name will be removed from the state council for a period of 5 years, and it will be removed permanently if the violation is a repeat offense (Dhar, et al., 2018).

Offences Under the Act Include

This Act includes several offenses and penalties to deter individuals and medical professionals from engaging in activities that could lead to gender-based discrimination. Some of the key offenses under the PCPNDT Act include (Kejriwal & Patnaik, 2012):

i. It is a violation of the Act to conduct or assist in the performance of prenatal diagnostic procedures at a facility that has not been registered.
ii. The statute does not permit the practice of sexual selection on either males or females.

iii. It is a violation of the legislation to use prenatal diagnostic procedures for any objective that is not one of the ones stated in the Act.

iv. The legislation makes it illegal to engage in activities such as selling, distributing, supplying, renting, or leasing any ultrasonography equipment or any other apparatus that can determine the gender of a fetus.

Problems Associated with the PCPNDT ACT

The PCPNDT Act is forward-thinking legislation that has, in principle, opposed a discriminatory practice, but it cannot guarantee that sex selection will not take place. Within the context of a doctor-patient interaction, it is actually hard to avoid telling the parents-to-be that their unborn child is a boy or a girl. Almost no one can be "caught in the act" by a doctor without resorting to unethical measures like decoy operations or installing spy cameras. Abortion is singled out since it is the sole measurable 'result' at the moment. Not only does this violate the right to abortion, which has been debated at length, but it is also extremely difficult to prove a causal relationship between gender identification and a subsequent abortion.

It is also important to keep in mind that PCPNDT is a piece of law with the goal of regulating medical technology. Since the healthcare industry in the Philippines is the biggest and poorest regulated in the world, expecting strict compliance with regulation for a single treatment is unrealistic. Efforts should be made to ensure the Act is implemented more effectively, but it should also be recognized that alternative solutions will need to be found. For any legislation to be truly successful, the goals of the people it governs must be altered (Contractor, 2011).

Some Famous Case Laws Related to the PCPNDT ACT

i. In the landmark case of **"Centre For Enquiry Into Health And Allied Themes (CEHAT) v. Union of India & Others"**, lawyers contested the "Prenatal Demonstrative Procedures Act of 1994" in court because they were concerned that it had failed to stop Female feticide (Bahuguna, 2018).

ii. "CEHAT vs. Union of India" This case will be remembered as a turning point in the history of female feticide. Here, emphasis has been put that the PNDT Act and its rules from 1996 must be implemented by the federal government with all the zeal and enthusiasm feasible (Banoo, 2003).

iii. "Voluntary Health Association of Punjab vs. Union of India" "The Preconception and Prenatal Diagnostic Techniques (Prohibition of Sex Selection) Act of 1994" was fully enforced after the "Voluntary Health Association of Punjab (VHAP)" petitioned India's Supreme Court in 2006 (Mitra, 2019).

iv. The PCPNDT Act, 1994 has been legally questioned in **"Vinod Soni & Anr. v. Union of India"** because it breaches Article 21, which guarantees

parents' discretion over their children's gender, in the Constitution After deciding that the Act was constitutional, the Bombay High Court dismissed the petition opposing it (India & Casebook, 2019).

Keeping this in mind, the current study has represented the past studies related to the Socio-Legal Impact of the Preconception and Prenatal Diagnostic Techniques Act after a concise introduction. After examining the past studies, the study has represented the objective on the basis of the research gap, then data analysis has been represented on the basis of these objectives, and finally, a discussion and conclusion have been provided.

Based on the preceding brief introduction, this component of the study contains evaluations of similar publications that have been conducted in the past to aid in understanding the status of the subject. For ease of understanding, this section has been divided into three parts.

i. Factors responsible for female feticide
ii. Need and impact of PCPNDT Act in India
iii. Reason for failure of the act

I. Factors Responsible for Female Feticide

Historically, men have been seen as the family's main providers, not only financially but also in terms of status and notoriety. Since the costs of raising, educating, and marrying a woman cannot be recoupable, and since the lady has to reside with the husband after the wedding, the money spent on a woman has been viewed as a responsibility rather than an investment (Jan & Jan 2016). Similarly, Punam (2015) found that in addition to cultural and socioeconomic issues, the declining sex ratio in the hill state may also be related to the development of cutting-edge medical technology, which has led to a significant challenge of female feticide. On the other hand, Kushwaha & Sharma (2014) noted that there have been certain similarities in the justifications for female feticide throughout the several nations that advocate daughter extermination. In contrast, Ram (2016) realized that the significantly lower sex ratio compared to rural regions can be attributed to the greater accessibility of technology in metropolitan settings. In the same manner, Ganvir and Balapure (2022) explored the fundamental reasons why Indians opted to commit female genital mutilation and revealed that in several regions of the nation, the extent of daughter avoidance, along with the level of son preference, exhibited a substantial positive link. Similarly, vom Berg (2023) identified the belief that a son could expand the family tree, protect the family, and provide safety and security, and has become crucial for salvation considering that a son solely may light the pyre of a funeral and perform other death-related rites and rituals led to the girls to

be devalued in addition to economic and sociocultural considerations. In addition, Ansari (2018) found that due to a variety of reasons, including financial assistance, old age assurances, property transference, the dowry, family tree, status, and authority, birth and death ceremonies, and ideas about religious obligations and salvation, males were favored over women.

II. Need and Impact of PCPNDT Act in India

Nandi (2015) investigated the effectiveness of the law in decreasing gender inequality. The study showed that the law improved the female-to-male gender ratio at birth by dramatically raising the chance of a female birth. However, it has been discovered that it was often not linked to a shift in the comparative mortality of young females. On the contrary, Bahuguna (2018) determined that the law was inadequate and ineffectual. The decreasing kid-to-adult ratios over time showed that there may still be ambiguity over the Act's impact and implementation. However, Tabaie (2017) found that the PCPNDT Act succeeded in recognizing and bringing attention to a serious social issue, but it fell short of its goals in terms of significantly reducing female feticide, which has unintended consequences that cannot be ignored. Similarly, Singh (2022) discovered that the PCPNDT Act was unsuccessful in reducing the child-sex ratio since it has stayed worse than it was before its passage that expected to remain that way in the coming years. On the other hand, Nandi & Deolalikar (2013) indicated that the law was successful in preventing the gender gap from getting any worse but determined that if the PCPNDT Act hadn't been passed, the child sex ratio may have dropped another 13 to 20 points, or 51,000 more female fetuses may have been terminated. Additionally, based on awareness and perspective regarding the PC PNDT Act, Rai, et al. (2019) concluded revealed that the majority have above-average awareness of PC-PNDT and that most people had positive attitudes. It has become important to spread knowledge of the negative effects of a falling child-sex ratio. Surprisingly, on examining the need for the PCPNDT act, Gupta et al. (2017) found that the inclination among female responders of the present generation for a first-born male kid can be worrying and a driver of the necessity for such acts and laws.

III. Reason for Failure of Act

Singh (2021) showed a definite decline in the female-juvenile sex ratio based on recent studies, indicating that the PNDT Act has failed. These surveys also showed that Indian doctors were partly to blame for the high rate of female feticide, along with the proprietors of ultrasonography clinics, because they do not adhere to medical ethics. Similarly, Ramesh et al. (2016) looked into what went wrong with the PCPNDT act. Lack of knowledge (33%), inability to enforce legislation (32.7%), and still-practiced socio-ritual elements (20.7%) were all cited as explanations for

the failure to minimize incidences of female feticide. In the same manner, Bahuguna (2018) found since most Indians have no concern about whether or not the Act's restrictions were followed, poor law enforcement was partly to blame for the growing problem of female feticide. Additionally, Mohanty (2015) observed that the Act's goal wasn't met to its full potential at first because of a lack of knowledge and institutional apathy. In 2002, the PNDT (Prenatal Diagnosis Technique) Act of 1994 was revised. This law has been revised and has become known as the Preconception and Prenatal Diagnosis (No Sex Selection) Act of 1994. Finally, Tandon et al. (2020) reported that the vast majority of participants (n=880, 88%) were unaware that medical professionals can also face legal consequences. There was also no standard for the female perspective since 40% of expecting mothers were interested in finding out the gender of their unborn kids, and 66% of respondents thought that possessing a male child in the family was vital. The Act failed because of all of these reasons. Despite numerous studies examining the socio-legal impact of the Preconception and Prenatal Diagnostic Techniques Act (PCPNDT Act) in India, there remains a gap in the literature regarding a comprehensive, up-to-date assessment that encompasses both quantitative and qualitative data and also evaluates the Act's long-term effects on gender equality, reproductive health, and the efficacy of enforcement mechanisms. Closing this research gap would be valuable for policymakers, healthcare professionals, and civil society in crafting evidence-based interventions to address gender-based discrimination. The aforementioned three sections aid in diversifying and acquiring various points of view on the subject to move toward the objectives based on the identified research gap.

Research Methods

As per the objectives and hypothesis shown in Table 1, the study utilized primary data collection methods in conjunction with the random sampling method to determine the "Socio-Legal Impact of the Preconception and Prenatal Diagnostic Techniques Act in India" from 385 respondents (women who have undergone prenatal diagnostic procedures and their family members). The study has been conducted in India. The primary data was gathered via a structured questionnaire. The questionnaire furthermore encompasses significant demographic data, including age, gender, occupation, educational attainment, and marital status. Several indicators were removed from the analysis because they were found to have "Inadequate Reliability, Convergent Validity, Extracted Average Variance, or Discriminant Validity". Finally, the questionnaire was constructed based on valid variables, including the prevalence of sex-selective practices, implementation of the PCPNDT act, accessibility and use of prenatal care services, public awareness and perception

of the PCPNDT act's provisions, and societal attitudes towards gender and reproductive health. The study employed a sequential exploratory design to solve the purpose of the research. Excel and SPSS software have been used to examine the data. The statistical tools mean, SD, regression, and correlation have been used to test the study's hypothesis.

Table 1: Analytical Framework of Objectives

Sr. No.	Objective	Hypothesis	Used Statistical Test	Description
1.	To evaluate the extent to which the Preconception and Prenatal Diagnostic Techniques Act (PCPNDT Act) has influenced the prevalence of "sex-selective practices" in India.	**H1:** The implementation of the PCPNDT Act has significantly reduced the prevalence of "sex-selective practices" in India. **H0:** The implementation of the PCPNDT Act has had no significant impact on reducing the prevalence of sex-selective practices in India.	**Regression**	A compendium of statistical methodologies for ascertaining the degree of association between two variables
2.	To assess the impact of the PCPNDT Act on the "accessibility and utilization of prenatal care services" among women in India.	**H2:** The PCPNDT Act has significantly improved the "accessibility and utilization of prenatal care services" among women in India. **H0:** The PCPNDT Act has not significantly improved the accessibility and utilization of prenatal care services among women in India.	**Regression**	A compendium of statistical methodologies for ascertaining the degree of association between two variables
3.	To analyze the public awareness and perception of the PCPNDT Act's provisions and its impact on societal attitudes towards gender and reproductive health.	**H3:** There is a significant relationship between public awareness and perception of the PCPNDT Act's provisions and societal attitudes towards gender equality and responsible reproductive health practices. **H0:** There is no significant relationship between public awareness and perception of the PCPNDT Act's provisions and societal attitudes toward gender and reproductive health.	**Correlation**	A statistical indicator of how closely two variables are changing at the same pace.

Result And Findings

Table 2: Demographic Profile of the Respondents

S No.	Demographic Characteristics	Category	N	%
1	**Gender**	Male	78	20.30%
		Female	307	79.70%
2	**Age group**	25-35 years	145	37.7%
		35-44 years	100	26.0%
		above 45 years	45	11.7%
		Below 25 years	95	24.7%
3	**Occupation**	Employed	153	39.7%
		Others	47	12.2%
		Self-Employed	98	25.5%
		Student	87	22.6%
4	**Education Level**	Bachelor's degree	114	29.6%
		Master's degree or higher	32	8.3%
		Primary Education	124	32.2%
		Secondary Education	115	29.9%
5	**Monthly Income**	20,000-40,000	101	26.2%
		40,001-60,000	69	17.9%
		less than 20,000	121	31.4%
		More than 60,000	39	10.1%
		Nil	55	14.3%

Table 2 shows "the Demographic Characteristics of the respondents" in the context of their Gender, Age group, Education, Occupation, and Monthly Income of respondents. According to Table 2, out of 385 respondents, 20.30% are male, and 79.70% are females. The maximum number (145) of respondents are from the age group of 25-35 years, i.e., 37.7%. The maximum number (124) of respondents have completed Primary Education, i.e., 32.2%. The table further shows that the maximum number (153) of respondents are Employed, i.e., 39.70%, and the maximum number (121) of respondents have a monthly income is less than 20,000, i.e., 31.4%.

Objectives

1: To evaluate the extent to which the Preconception and Prenatal Diagnostic Techniques Act (PCPNDT Act) has influenced the prevalence of "sex-selective practices" in India.

H1: The implementation of the PCPNDT Act has significantly reduced the prevalence of "sex-selective practices" in India.

H0: The implementation of the PCPNDT Act has had no significant impact on reducing the prevalence of "sex-selective practices" in India.

Table 3: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.102[a]	.010	.008	3.15747
a. Predictors: (Constant), Implementation of the PCPNDT Act				

Table 3 presents the statistical summary for a linear regression model used to assess the impact of the Implementation of the PCPNDT Act on the accessibility and utilization of prenatal care services among women. The R Square value of 0.010 specifies that only a small proportion, approximately 1%, of the variation in the accessibility and use of prenatal care services can be explained by the Implementation of the PCPNDT Act. The R-value of 0.102 suggests a weak linear relationship between the Implementation of the PCPNDT Act and the accessibility and utilization of prenatal care services.

Table 4: Anova

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.415	1	40.415	4.054	.045[b]
	Residual	3818.374	383	9.970		
	Total	3858.790	384			
a. Dependent Variable: Prevalence of Sex-Selective Practices						
b. Predictors: (Constant), Implementation of the PCPNDT Act						

The ANOVA Table 4 summarizes the results of a regression analysis examining the relationship between the implementation of the PCPNDT Act and the prevalence of sex-selective practices. The regression model, which includes the PCPNDT Act as a predictor, explains a statistically significant portion of the variation in the prevalence of sex-selective practices, as indicated by the F-statistic of 4.054 ($p = 0.045$). This suggests that there is implementation of the PCPNDT Act has significantly reduced the prevalence of "sex-selective practices" in India(i.e., the sig value is less than 0.05)

Table 5: Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.792	.817		16.876	.000
	Implementation of the PCPNDT Act	.107	.053	.102	2.013	.045
a. Dependent Variable: Prevalence of Sex-Selective Practices						

The coefficients Table 5 presents key information about the regression model examining the relationship between the "Implementation of the PCPNDT Act" and the "Prevalence of Sex-Selective Practices." The coefficient for the "Implementation of the PCPNDT Act" is 0.107. This indicates that for every one-unit increase in the implementation of the Act, there is a corresponding increase of 0.107 in the estimated prevalence of "sex-selective practices". The t-statistic for the "Implementation of the PCPNDT Act" is 2.013, and the associated p-value (0.045) indicates that the coefficient is statistically significant at the 0.05 significance level. This suggests

that the "Implementation of the PCPNDT Act" variable has a statistically significant impact on the prevalence of "sex-selective practices".

2: To assess the impact of the PCPNDT Act on the "accessibility and utilization of prenatal care services" among women in India.

H2: The PCPNDT Act has significantly improved the "accessibility and utilization of prenatal care services" among women in India.

H0: The PCPNDT Act has not significantly improved the "accessibility and utilization of prenatal care services" among women in India.

Table 6: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.110[a]	.012	.010	3.22638
a. Predictors: (Constant), Implementation of the PCPNDT Act				

The model summary table 6 provides important statistical information for regression analysis, specifically focusing on the relationship between the "Implementation of the PCPNDT Act" and the outcome variable. The R Square value of 0.012 suggests that only a very small proportion, approximately 1.2%, of the variance in the dependent variable can be explained by the Implementation of the PCPNDT Act. The R-value of 0.110 represents a positive but relatively weak linear relationship between the Implementation of the PCPNDT Act and the outcome variable.

Table 7: Anova

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.993	1	48.993	4.707	.031[b]
	Residual	3986.841	383	10.410		
	Total	4035.834	384			
a. Dependent Variable: Accessibility and Utilization of Prenatal Care Services						
b. Predictors: (Constant), Implementation of the PCPNDT Act						

The ANOVA table 7 provides statistical insights into the regression model assessing the impact of the "Implementation of the PCPNDT Act" on the "Accessibility and Utilization of Prenatal Care Services." The model's regression component demonstrates a statistically significant relationship ($F = 4.707$, $p = 0.031$) between the predictor variable, the Implementation of the PCPNDT Act, and the "accessibilityand utilization of prenatal care services". This suggests that the impact

of the PCPNDT Act on the "accessibility and utilization of prenatal care services" among women. (i.e., sig value is less than 0.05)

Table 8: Coefficients

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	13.530	.835		16.202	.000
	Implementation of the PCPNDT Act	.118	.054	.110	2.169	.031
a. Dependent Variable: Accessibility and Utilization of Prenatal Care Services						

The coefficients Table 8 provides crucial information about the regression model that investigates the relationship between the "Implementation of the PCPNDT Act" and the "Accessibility and Utilization of Prenatal Care Services." The significant t-statistic ($t = 16.202$, $p < 0.001$) indicates that this constant term is statistically significant. The t-statistic for the "Implementation of the PCPNDT Act" is 2.169, with a significance level (p-value) of 0.031, indicating that the coefficient is statistically significant at the 0.05 significance level. This suggests that the "Implementation of the PCPNDT Act" variable has a significant effect on the accessibility and utilization of prenatal care services.

3: To analyze the public awareness and perception of the PCPNDT Act's provisions and its impact on societal attitudes towards gender and reproductive health.

H3: There is a significant relationship between public awareness and perception of the PCPNDT Act's provisions and societal attitudes towards gender equality and responsible reproductive health practices.

H0: There is no significant relationship between public awareness and perception of the PCPNDT Act's provisions and societal attitudes toward gender and reproductive health.

Table 9: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
Public awareness and perception of the PCPNDT Act's provisions	15.4130	3.17187	385
Societal attitudes towards gender and reproductive health	14.9896	3.14326	385

The descriptive statistics Table 9 offers the mean and SD of the variable's public awareness and perception of the PCPNDT Act's provisions and Societal attitudes toward gender and reproductive health. The mean score for "Public Awareness and Perception of the PCPNDT Act's Provisions" is approximately 15.4130, and the standard deviation is 3.17187. The mean score regarding "Societal Attitudes Towards Gender and Reproductive Health" is approximately 14.9896, and the standard deviation is 3.14326.

Table 10: Correlations

Correlations			
		public awareness and perception of the PCPNDT Act's provisions	Societal attitudes towards gender and reproductive health
public awareness and perception of the PCPNDT Act's provisions	Pearson Correlation	1	-.103*
	Sig. (2-tailed)		.043
	N	385	385
Societal attitudes towards gender and reproductive health	Pearson Correlation	-.103*	1
	Sig. (2-tailed)	.043	
	N	385	385
*. Correlation is significant at the 0.05 level (2-tailed).			

The correlation table 10 describes the relationship between public awareness and perception of the PCPNDT Act's provisions and societal attitudes toward gender and reproductive health. The above table shows that there is a statistically significant correlation between public awareness and perception of the PCPNDT Act's provisions and societal attitudes towards gender and reproductive health (i.e., the sig value is below 0.05) (sig value = 0.043).

Discussion

This study discussed the Socio-Legal Impact of the "Preconception and Prenatal Diagnostic Techniques Act" in India. This study divided the literature into three sections: factors responsible for female feticide, the need and impact of the PCPNDT act in India, and the reason for the failure of the act. Some of the prominent studies that were discussed in that part are mentioned below:

According to Raj, (2019), The birth of a boy has been regarded as a miracle from God and treated with great reverence, whereas the birth of a daughter has been viewed as a burden and given a stigmatizing title as a sign of the family's poor social standing resulting in female feticide. Keeping this problem in mind, Kumari (2021)

stated that there has been an urgent need to tighten the legislation to end these criminal acts, which have far-reaching effects on society, particularly on women. Similarly, Batra (2021) emphasized that the law and its amendments highlighted the need for a more comprehensive abortion law that may cover all women and give them the opportunity to exercise their rights. In this context, Singh, (2021) found that "The Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Amendment Act, 2002" has several loopholes that need to be closed in order to protect pregnant women in India. Further, Chatterjee and Vig (2019) suggested that in order to ensure the NRR (net reproduction rate), India should adopt a balanced family philosophy. PCPNDT Act could assist in realizing it. In contrast to it, Bahuguna (2018) argued that determined that the "Preconception and Prenatal Diagnostic Technique Act" was inadequate and ineffectual. Since the Indian community was largely preoccupied with the Act's prohibitions, weak prosecution has inadvertently promoted to the increased prevalence of female feticide. For such an issue, Bhatt (2020) stated that the PCPNDT Act of 1994 required strict regulatory involvement and placed an emphasis on publicity as part of its social marketing effort.

The findings from the current study also revealed that implementation of the PCPNDT Act has significantly reduced the prevalence of sex-selective practices in India, as shown in Tables 4 and 5, along with the improved accessibility and utilization of prenatal care services among women shown in Tables 7 and 8. A significant relationship has also been found between public awareness and perception of the PCPNDT Act's provisions and societal attitudes towards gender equality and responsible reproductive health practices, as shown in Table 10. Therefore, there is no denying that the act has somehow improved the condition in comparison to past times; however, still, there are still some loopholes that need to be addressed for a better future, as there is still a weak linear relationship between the Implementation of the PCPNDT Act and the accessibility and utilization of prenatal care services as shown in table 3.

Conclusion

The prevalence of male-child preference throughout significant segments of Indian society, including highly educated groups, serves as the fundamental catalyst for the occurrence of female feticide in India. The issue of female feticide has been promoted and nurtured by medical professionals with the active participation of society as a whole. Although the law holds a significant influence in driving social change, it is insufficient on its own to eradicate this particular social issue inside Indian culture. The "Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Amendment Act of 2002" is a significant stride in the appropriate direction. Given the imbalanced female-

to-male sex ratio prevalent in the nation, this legislation is an endeavor aimed at safeguarding the rights and well-being of the unborn female offspring.

The findings revealed that all three hypotheses of the study had been accepted, which shows that the implementation of the PCPNDT Act has significantly reduced the "prevalence of sex-selective practices" in India, along with the improved accessibility and utilization of "prenatal care services" among women. A significant relationship has also been found between public awareness and perception of the PCPNDT Act's provisions and societal attitudes toward gender equality and responsible reproductive health practices. Finally, the study concluded that strict enforcement and interpretation of the Act has enhanced the female-child sex ratio in certain regions, however, the main problem for the government and Indian society is closing loopholes in the "Prenatal Diagnostic Techniques (Regulation and Prevention of Misuse) Amendment Act, 2002". It is important to acknowledge that unless this issue is effectively addressed, the nation will face a significant gender inequality, which will have detrimental effects on the country's economic advancement.

Further, it has been recommended that there have to be stricter registration requirements and tighter regulation of clinics operated by technicians and untrained employees. The participation of community leaders and important people is crucial to the success of such efforts.

Implications, Limitations, and Recommendations for Further Studies

The study's findings can inform policymakers, healthcare practitioners, and civil society organizations in their efforts to address gender-based issues and improve access to healthcare services for women and infants in India. It can also help raise awareness about gender discrimination and the importance of reproductive rights. The current study is limited to a small group of respondents comprised of females and their families, further study may cover the perspective of doctors and health professionals also. Additionally, in future studies, researchers can examine the role of technology in enforcing the Act and the evolving legal landscape surrounding reproductive technologies and genetic testing in India.

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