

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20240822>

Review Article

Pre-conception and pre-natal diagnostic techniques act-draconian or a considerate de jure tamer

Vasudha Khanna^{1*}, K. Madan Gopal²

¹ED Secretariat Division, National Health Systems Resource Centre, New Delhi, India

²Public Health Administration Division, National Health Systems Resource Centre, New Delhi, India

Received: 13 February 2024

Accepted: 12 March 2024

***Correspondence:**

Vasudha Khanna,

E-mail: Vasudha_khanna@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Principles of gender equity are an integral part of constitution. The constitution confers equal rights and opportunities on women; bars discrimination on the basis of sex and denounces practices derogatory to the dignity of women. In spite of this, discrimination against women and girls is almost universal. Forced abortions of female foetuses and prenatal sex determination results in millions of girls not being allowed to be born just because they are girls. Pre-conception and pre-natal diagnostic techniques (PC and PNDT) act were enacted in 1994, amended and effectively implemented in 2003 and strictly amended in 2011, to curb this heinous crime of female foeticide that was taking place due to prenatal diagnostic techniques for determination of the sex of the foetus and thus, to balance the disturbed sex ratio of the country. To achieve the said purposes, the act imposes penalties for the offences committed under this Act, including clerical errors. However, according to the radiologists, the PC and PNDT act has become draconian for all practicing sonologists and radiologists instead of serving the purpose of saving the girl child. This article, explaining the provisions of PC and PNDT act, addresses the concerns of sonologists and radiologists in the light of the judgements passed by Hon'ble Supreme Court of India. It further discusses the hindrances occurring in the usage of evolved medical technology due to the provisions of the Act thereby paving way towards a much-needed legitimate decision to settle the ongoing country-wide debate.

Keywords: PCPNDT, PC and PNDT, Sex selection, Prenatal, Imaging technology

INTRODUCTION

The right to live is part and parcel of human rights and denial of the same to a girl child is one of the heinous violations which unfortunately is universal. Contributing to this unpropitious choice is the mere reason of patrilineal line of succession regarding property rights along with the cultural practice of carrying forward the paternal surname due to which a male child has always been preferred over a female child, especially in India. As such there was a tendency for families, until the early 1990s, to continue producing children until a male child was born, thereby magnifying India's overpopulated demographics. However, things worsened when ultrasound techniques gained widespread use in India during that period, making

prenatal sex determination a common procedure. According to a Times of India article (Achin Vanaik, TOI, June, 1986), about 78,000 female fetuses were aborted from 1984 to 1985 after sex determination tests. Amniocentesis was first introduced in India in 1975 by the All-India Institute of Medical Sciences (AIIMS), New Delhi, for detecting congenital deformities in a fetus. By the mid-1980s, it was being largely misused to determine the sex of the unborn child and to carry out sex selective abortions-with the girl child as the obvious target-in Maharashtra, Punjab and Haryana. The practice soon spread to the rest of the country.¹

Resultant was not only a booming multi-million sex selective abortion business, but also a skewed sex ratio as

a consequence of the heinous crime of female foeticide.¹ As such, a legislative mandate became a dire necessity to stop female foeticides and arrest the declining sex ratio in India.

Addressing the concern in 1994, the pre-natal diagnostic techniques (Prevention of misuse) act (PNDT act) was enacted by the parliament. However, it came into operation on 1.1.1996: after 2 more years of countless girl child abortions. Though in operation, neither the central nor the state governments took any step for its implementation despite a lapse of another 5 years. Hence, the judiciary had to take upon itself the task of giving effect to the said Act. Series of petitions were filed either Suo motu or moved by NGOs in which the hon'ble supreme court of India and the high courts issued various directions and pronounced orders to the central and the state governments for creating public awareness and for effective implementation of this act.²

The first set of directions were issued on 4.5.2001 whereby both state and central governments were directed to create public awareness against the practice of pre-natal sex determination and sex selection and to implement the act in the earnest interest.³ Central supervisory board was directed to review and monitor the implementation of the act and at the same time to examine the necessity to amend the act in view of the emerging technology of pre-conception sex selection and difficulties encountered in implementation of the act. State governments were directed to immediately appoint fully empowered appropriate authorities and appropriate authorities were further directed to take appropriate criminal action in case of violation of the provisions of the act. Compliance reports were also called for from the States and the matter was adjourned to 06.08.2001 for further directions.

Regardless of the directions, as certain, States acted in a lackadaisical manner and failed to file compliance affidavits despite several adjournments. On 19.09.2001, the hon'ble supreme court observed that: *"At the outset, we may state that there is total slackness by the administration in implementing the Act. Some learned counsel pointed out that even though the genetic counselling centres, genetic laboratories or genetic clinics are not registered, no action is taken as provided under Section 23 of the Act, but only a warning is issued. In our view, those centres which are not registered are required to be prosecuted by the authorities under the provisions of the Act and there is no question of issue of warning and to permit them to continue their illegal activities."*⁴

Later, on the suggestion of central government, the hon'ble supreme court ordered setting up of national inspection and monitoring committee for the implementation of the act. in the year 2003, in conformity with the several directions issued by the supreme court, the act was amended to bring within its purview the misuse of pre-conception and pre-natal diagnostic techniques and was titled as the pre-conception and pre-natal diagnostic

techniques (prohibition of sex selection) act, 2003 (PC and PNDT act).

KEY PROVISIONS OF THE ACT

The Act endeavors to unveil the social, legal, ethical, and medical indifference towards the girl child. It prohibits the use of ultrasonography for the purpose of sex determination of the foetus by all laboratories and clinics. It also penalizes all persons engaged in or helping in the conduct of the prenatal diagnostic technique and conducting the PND test for any purpose other than the one mentioned in the act (Section 4), as well as the sale, distribution, supply, renting, etc. of an ultrasound machine or any other equipment capable of detecting the sex of the foetus.⁵

A simple analysis of the act lay down the following requirements: Registration under section 18 of the PC-PNDT act, written consent of the pregnant woman and prohibition of communicating the sex of foetus under section 5 of the act, maintenance of records as provided under section 29 of the act, creating awareness among the public at large by placing the board of prohibition on sex determination.⁶

However, non-compliance of the provisions of the act, be it clerical errors, are not foregone. The act recognizes all the defaulters as accused, either involved in sex determination or non-maintenance of records and imposes penalty for every default (Section 22 and 23): (i) for doctors/owner of clinics: Up to 3 years of imprisonment with fine up to Rs 10,000 for the first offence, up to 5 years of imprisonment with fine up to Rs 50,000 for a subsequent offence and suspension of registration with the medical council if charges are framed by the court and till the case is disposed of, removal of the name for 5 years from the medical register in the case of the first offence and permanent removal in case of a subsequent offence. (ii) for husband/family member or any other person abetting sex selection: Up to 3 years of imprisonment with a fine up to Rs 50,000 for the first offence, up to 5 years of imprisonment with a fine up to Rs 1 lakh for a subsequent offence and (iii) for any advertisement regarding sex selection: Up to 3 years of imprisonment and up to Rs 10,000 fine.

RADIOLOGIST'S VIEW

Focusing on the aforesaid provisions, the radiologist's perspective revolves around the formulation of minor and major offences and making the violation of any of the provision, particularly record-keeping, a cognizable, non-bailable and non-compoundable offence.⁷ This has been a fiery topic in the country for years now, thereby claiming amendment of the PC and PNDT act. Claiming relief from the provisions of section 23(1) and section 23(2), federation of obstetrics and gynaecological societies of India (FOGSI) in its petition sought that anomaly in

paperwork, record keeping, clerical errors under PCPNDT act should be decriminalized.⁸

The court, however, refused its plea on 03.05.2019 and observed that, *“Considering the evils sought to be remedied it cannot be said that the imposition in the act in question is disproportionate. The restrictions and the provisions of punishment have close nexus with the object sought to be achieved. It is not possible to term action as merely clerical one as that is pre-requisite for the test/procedure and that is what is intended by the act, if it is given a go-bye under the guise of clerical error, the Act would be rendered otiose. Restriction cannot be said to be excessive and beyond what is required in the public interest, they cater to the felt need of the society and the complex issues facing people which the legislature intends to solve.”*⁹

Referring to the United Nations report, the apex court said that on an average more than 4.6 lakh girls went missing at birth annually during the period 2001-2012 as a result of sex selective abortions and thus, the stringent provisions under the Act to maintain sex ratio and social balance in the society are justifiable:

“The act is a social welfare legislation, which was conceived in light of the skewed sex-ratio of India and to avoid the consequences of the same. A skewed sex-ratio is likely to lead to greater incidences of violence against women and increase in practices of trafficking, ‘bride-buying’ etc. The rigorous implementation of the Act is an edifice on which rests the task of saving the girl child” was noted by Justice Mishra.⁹

It was also noted that there are only 586 convictions out of 4202 cases registered under the act in last 24 years. The court stated that this reflects the challenges being faced by the authority in implementing this social legislation.

Thus, it would not be inappropriate to say that PC and PNDT Act was not brought into force because common people were resorting to sex selection, but because the medical fraternity made it possible and easy for them to do so. Abandoning their moral responsibility to the tenets of their profession, a few doctors, radiologists, sonologists and geneticists took advantage of the discriminatory social practice of son-preference and daughter-aversion. But each time they made a profit, there were many losers-the country, our profession, the girl child. Thus, the medical community, which has the potential to play a major role in eradicating sex selection (which for all practical purposes just means eliminating our daughters), has instead contributed to its prevalence. With these unethical practices multiplying, the medical profession has been under severe pressure to respond to the situation.¹

However, it can also not be overlooked that because a few professionals chose wealth over health and humanity, and though it is prudent to regulate the same, the entire nation is unable to progress towards development because of the

hindered technological aspect that comes with this regulation.

Medical imaging techniques, the today’s healthcare science, are used to show internal structures under the skin and bones, as well as to diagnose abnormalities and treat diseases.¹⁰ An important part of biological imaging, it includes radiology which uses the imaging technologies like X-ray radiography, X-ray computed tomography (CT), endoscopy, magnetic resonance imaging (MRI), magnetic resonance spectroscopy (MRS), positron emission tomography (PET), thermography, medical photography, electrical source imaging (ESI), digital mammography, tactile imaging, magnetic source imaging (MSI), medical optical imaging, single-photon emission computed tomography (SPECT), and ultrasonic and electrical impedance tomography (EIT).¹¹

CT is an effective technique for monitoring various types of cancers such as cancer of the bladder, kidneys, skeleton, neck, and head and for diagnosing infection.¹²⁻¹⁴ Positron emission tomography (PET) and single-photon emission computed tomography (SPECT) are the types of CT scan. The PET scan can be used to measure the concentration of amino acids, sugar, fatty acids, and receptor in the living body. It is a new diagnostic tool used to detect diseases such as atherosclerosis, aging, cancer, and schizophrenia, although improvement in instrumentation and modeling is still required for future purposes.¹⁵ Further, digital mammography is a special form of mammography employed to investigate breast tissues for breast tumor study and has been considered a better technique as compared to film (conventional) mammography in the detection of breast cancer in premenopausal, and young women.¹⁶

Imaging techniques have become a necessary tool to diagnose almost all major types of medical abnormalities and illnesses, such as trauma disease, many types of cancer diseases, cardiovascular diseases, neurological disorders, and many other medical conditions. Medical imaging techniques are used by highly trained technicians like medical specialists, from oncologists to internists.¹⁷ With the technological development and the social distancing norm posed by COVID-19 pandemic, these technologies have evolved to their portable versions pointing towards potential improvements for the future. Portable CT scanners, portable MRI machines, portable X-ray machines or to say, X-ray mobile apps have also become available which allow for higher quality images, and improved emergency and in-hospital care. However, speaking of India, one may find most of this evolution in grey market: credits section 2(d) and section 18 of PC and PNDT act and rules 3A, 3B and 4 of PC and PNDT rules.

Thus, to say, radiologists in this country are faced with the dilemma of introducing advanced medical imaging techniques to benefit the profession while also navigating the strict penalties outlined in the PC and PNDT act.

Nonetheless, the hon'ble high court of Delhi in its judgement dated 06.08.2022 allowed the plea of a 70-year-old senior citizen suffering from a debilitating illness called progressive supranuclear palsy which attacks the brain and nerve cells, causing acute problems with balance, movement, vision, speech, seeking to access a portable ultrasound machine at his home to administer his medical treatment.¹⁸

The court observed as follows:

*The purpose of enacting the PNDT act was to prevent the misuse of ultrasound machines for sex determination; however, in extraordinary circumstances, the Courts can always make an exception on the use of the ultrasound machinery. The court prima facie finds that Petitioner's right to life guaranteed by the constitution of India would be violated, if the provisions of the PNDT act are interpreted in a manner that prevents him from accessing essential medical equipment.*¹⁹

It was further observed that *"It also merits noting that the rationale for introduction of the said prohibitory provisions in the PNDT act was in the context of prevention of the social evil of pre-natal sex determination, which is very far removed from the facts of the instant case..."*¹⁹

DISCUSSION

As Swami Vivekanand said: *"Just as a bird could not fly with one wing only, a nation would not march forward if the women are left behind."*

Women are the backbone of the family and the bedrock of a nation. They bring life into the world. But that would be possible if life is guaranteed to them. In a country full of cultures and conventional beliefs associated with those cultures, a De Jure Tamer cannot be outdone, at least not yet, if we need to protect our girls or should we say, protect the nation. However, one aspect of society should not become a hindrance to other aspects of development, which in this case is medical technology.

The PC and PNDT act and the campaign for its implementation are not against the technology per se but demand the ethical use of pre-natal diagnostic technology. Every technology is situated in a specific social and cultural context, which influences its use. Certainly, technology plays a major role in public health. It is also true that women should have the right to abortion. Abortion is legal in India under certain circumstances, but sex selection is not. Therefore, if technology is used to eliminate the female foetus only selectively, then doctors need to question the use of this technology.

However, if used wisely and appropriately, advanced imaging technologies used to diagnose various external as well as internal human illnesses, can minimize diagnostic errors and produce novel and better information about the target object. This may aid in detection of early-stage

diseases which may eventually lead to patients living longer and better lives. In the future, with mounting innovations and advancements in technology systems, the medical diagnostic field would become a field of regular measurement of various complex diseases and will provide healthcare solutions. It is not dubious that this needs to be regulated but the issue remains arguable-amendment of the PC and PNDT Act or enactment of a new medical devices act.

CONCLUSION

Medical professionals must grasp that technology operates within a social and cultural framework, and its misapplication can deeply affect gender dynamics. While advanced imaging technologies offer significant potential to transform medical diagnostics and enhance patient care, a nuanced approach is necessary. This approach should balance ethical technology use with women's rights, including their legal right to abortion. The ongoing discourse on medical diagnostics should conclude with the implementation of separate legislation, distinguishing between combating female foeticide and regulating technology's proper utilization in healthcare.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Romero R, Kalache KD, Kada N. Timing the delivery of the preterm severely growth restricted fetus: venous Doppler, cardiotocography on the biophysical profile? *Ultrasound Obstet Gynecol.* 2002;19:118-21.
2. Giles WB, Trudinger BJ, Baird PJ. Fetal Umbilical flow velocity wave form and placental resistance pathological co-relation. *Br J Obstet Gynecol.* 1985;92:31-8.
3. Mendez MA, Gayta MV, Flores R. Doppler ultrasound evaluation in preeclampsia. *BMC Res Notes.* 2013;19:477.
4. Gramellini D, Folli MC, Raboni S, Vadora E, Merialdi A. Cerebral-umbilical Doppler ratio as a predictor of adverse perinatal outcome. *Obstet Gynecol.* 1992;79(3):416-20.
5. Bano S, Chaudhary V, Pande S, Mehta VC, Sharma AK. Colour Doppler evaluation of cerebral umbilical pubatility ratio and its usefulness in the diagnosis of intrauterine growth restriction and prediction of adverse perinatal outcome. *Indian J Radiol Imaging.* 2010;20(1):20-5.
6. Mari G, Hanif F, Kruger M, Cosmi E, Forgas SJ, Treadwell MC. Middle cerebral artery peak systolic velocity a new Doppler parameter in the assessment of growth restricted fetus. *Ultrasound Obstet Gynecol.* 2007;29(3):310-6.
7. Schenone MH, Mari G. The MCA Doppler and its role in the evaluation of fetal anemia and fetal growth restriction. *Clin Perinatal.* 2011;38(1):83-102.

8. Hecher K, Campbell S, Doyle P, Harrington K, Nicoladies K. Assessment of fetal compromise by Doppler ultrasound investigation of the fetal circulation. *Circulation.* 1995;91:129-38.
9. Baschat AA, Gembruch U, Weiner CP, Harman CR. Qualitative venous Doppler waveforms analysis improves prediction of critical perinatal outcome in premature growth restricted foetuses. *Ultrasound Obstet Gynecol.* 2003;22:240-5.
10. Brown MA, Lindheimer MD, Swiet M, Assche VA, Moutquin JM. The classification and diagnosis of the hypertensive disorders of pregnancy: statement from the international society for the study of hypertension in pregnancy (ISSHP). *Hypertens Pregnancy.* 2001;20:19-24.
11. Kurmanavicius J, Florio I, Wisser J, Hebisch G, Zimmermann R, Muller R et al. Reference resistance indices of the umbilical, fetal middle cerebral and uterine arteries at 24-42 weeks of gestation. *Ultrasound Obstet Gynecol.* 1997;10:112-20.
12. Ozeren M, Dinc H, Ekmen U, Senekayli C, Aydemir V. Umbilical and middle cerebral artery Doppler indices in patients with preeclampsia. *Eur J Obstet Gynecol Reprod Biol.* 1999;82:11-6.
13. Yoon BH, Lee CM, Kim SW. An abnormal umbilical artery waveform: A strong and independent predictor of adverse perinatal outcome in patients with preeclampsia. *Am J Obs Gyn.* 1994;171:713-21.

Cite this article as: Khanna V, Gopal KM. Pre-conception and pre-natal diagnostic techniques act-draconian or a considerate de jure tamer. *Int J Reprod Contracept Obstet Gynecol* 2024;13:1086-90.