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Perception of research ethics among dental fraternity in Chennai: A cross sectional analysis

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Abstract

Background: Dental research is fundamental to advancing the field, but ethical considerations are paramount. This study explores the perception of research ethics among dental professionals in Chennai, aiming to identify areas for improvement and enhance ethical awareness.

Materials and Methods: A cross-sectional study was conducted from April to October 2023, involving 146 dental students and dentists. A questionnaire assessed their understanding of research ethics. Data were collected via Google Forms, ensuring anonymity and privacy. Statistical analysis was performed using IBM SPSS Version 26.

Results: Most participants were involved in research (65.8%), but awareness of ethical principles varied. While many understood about informed consent (59.6%), there was limited knowledge of the Helsinki Declaration (40.4%). Participants recognized the need for special procedures for vulnerable populations (21.9%). The majority expressed interest in Research Ethics workshops (66.4%).

Conclusion: Dental professionals' awareness of research ethics varies. Comprehensive ethics education is essential to uphold ethical standards, ensure participant rights, and maintain professional integrity. Participants' interest in ethics education offers an opportunity for improvement.

Keywords: Dental research, Helsinki declaration, informed consent, dental education, participant rights

Introduction

Research in the field of dentistry plays a vital role in advancing knowledge, improving patient care, and enhancing the overall quality of dental practice. However, the ethical conduct of dental research is of paramount importance to ensure the safety and well-being of patients, the integrity of the profession, and the trust of the public. Ethics, a field within philosophy, involves the examination of what is considered right and morally sound in the actions of individuals or groups. To gain a better grasp of ethics, it may be useful to begin by clarifying what it does not entail. Ethics does not consist of fixed rules or limitations, it is not synonymous with religion, and it is not equivalent to the legal system^[1]. Essentially, it serves as a moral compass or guide for how to behave. Ethical research practices not only dictate the methodology of investigations but also encompass a broader framework that considers the rights, dignity, and consent of research participants. The foundation of ethical conduct in dentistry is built upon five fundamental principles as outlined in the ADA (American Dental Association) Code: Beneficence, Non-maleficence, Patient Autonomy, Justice, and Veracity. These principles form the ethical compass guiding dental professionals in their service to patients and the broader community^[2]. The principle of Beneficence, encapsulating the concept of "doing good," underscores the duty of professionals to act in the best interests of patients and the public. Non-maleficence, the principle of "doing no harm," emphasizes the obligation to protect patients from harm during dental practice. Patient Autonomy, or "self-governance," underscores the responsibility to respect patients' desires, within accepted treatment boundaries, while safeguarding their confidentiality. Justice, often referred to as "fairness," highlights the dental profession's commitment to collaborating across society to enhance access to care for all. Veracity, the principle of "truthfulness," underscores the importance of maintaining trust within the dentist-patient relationship, transparent and honest communication, and intellectual integrity. Despite the profound importance of these ethical

principles, the dental education landscape in India, and indeed in many parts of the world, lacks a comprehensive and standardized ethics curriculum^[3]. The scant attention paid to ethical principles within dental education curricula leaves much to be desired. While the ADA Code provides a strong ethical foundation, there remains a gap in translating these principles into comprehensive educational practices, particularly within the Indian dental education system. This study aims to address this crucial gap by exploring the perceptions of research ethics within the dental fraternity, thereby shedding light on the state of ethical awareness and practice within the field^[4]. It underscores the necessity of incorporating ethical education into dental curricula to ensure that these principles are not merely words on a page but are ingrained in the consciousness and practices of dental professionals and researchers. The dental fraternity, comprising dental students, practitioners, educators, and researchers, must uphold ethical standards in their research endeavors^[5]. The perception of research ethics within this community is a critical aspect of maintaining ethical integrity in dental research and practice. Understanding how dental professionals and researchers perceive and engage with research ethics can provide insights into the current state of ethical awareness and practices within the field. Therefore, the current study aims to dwell into the perceptions, attitudes, and practices of the dental fraternity regarding research ethics.

Materials and Methods

This study is designed to utilize a cross-sectional research design to assess the perception of research ethics among the dental fraternity in Chennai, India. The study was conducted over a duration of seven months, from April 2023 to October 2023. This period encompassed data collection, analysis, and report compilation for this study.

The target population for this study comprised dental students, including Interns, Postgraduates and dentists with varying qualifications, such as BDS, MDS, and PhD in private dental colleges in Chennai, Tamil Nadu, India. Chronically absent students, and those not interested in providing consent for the study were not included. The sampling method was a non-probabilistic convenient sampling, in which all the participants who met the inclusion criteria were involved. The location of this study was in Chennai, India.

Ethical approval for the study was obtained from the Department of Public Health Dentistry in a private dental college in Chennai. Additionally, ethical clearance was granted by the Institutional Review Board (IRB), demonstrating the study's adherence to ethical standards and protocols. In alignment with ethical guidelines, informed consent was diligently sought from each participant. The informed consent process highlighted the voluntary nature of participation and the commitment to maintaining the anonymity and confidentiality of each participant. Identifying information was not collected to ensure the privacy and security of the respondents. The required permission was obtained from the head of the institution and then the questionnaire was distributed electronically using Google Forms through various social media platforms, which allowed for efficient data collection and responses from the target population.

To conduct the study, a well-structured questionnaire was designed explicitly to gather data regarding the various research ethics, among dental fraternity. The questionnaire was validated by a pilot study among 30 students selected

from the target group. This questionnaire underwent an evaluation and approval process by the department of public health dentistry at the private dental college, ensuring its validity and relevance to the research objectives. A sample size of 146 participants was determined after conducting a pilot study to assess the proportion of individuals who were aware of the Helsinki Declaration. The pilot study revealed a 55% awareness rate, and with a 95% confidence level and a 5% margin of error, a sample size of 146 was calculated to be adequate for the main study.

The demographic information collected from the participants included the gender, age, year of study and qualification. The questionnaire used in this study consisted of 20 questions designed to gauge the perception of research ethics among the dental fraternity. The questionnaire was specifically formulated for the study in two sections. The first section was used to record the students' demographic details, and the second contained questions associated with perspective and practice of various aspects of research ethics.

Data was collected via Google Forms, which were circulated on various social media platforms to reach the target population. Prior to data collection, permission was obtained from the head of the institution where the study was conducted. Special care was taken to ensure that data collection did not interfere with the participants' academic commitments. Informed consent was procured from each participant before they were involved in the study. Participants were assured of anonymity and privacy throughout the research process. The collected data was coded and analyzed using the IBM SPSS Version 26 software package. Descriptive statistics were calculated for demographic variables and the responses provided by the participants, including frequency, percentage, mean and standard deviation.

Results

Out of the 146 participants in this study, 73.3% were female, while 26.7% were male. In terms of qualifications, the participants were diversified, with 43.3% being House Surgeons (CRRI), 37.7% holding BDS qualifications, 8.2% possessing MDS qualifications, and 11% pursuing postgraduate studies. When it came to research activity, the study found that 34.2% of the participants had not engaged in any research, while 32.2% had done so due to academic demand, 23.2% due to personal interest and academic demand, and 8.9% motivated by personal interest alone. The study also explored their understanding of research ethics. More than half (56.2%) of the participants had a clear understanding of what research entailed. Concerning the Helsinki Declaration, 34.2% of the participants were unfamiliar with it, while 40.4% associated it with ethical considerations in human research, and 17.8% believed it aimed to maximize human research participation. The study further revealed that a significant majority (82.9%) considered obtaining informed consent documentation mandatory for research involving human subjects. Informed consent was also a focus of the study. More than half (55.5%) believed that informed consent should include information about the research, potential risks, and the use of collected data. The study found that 59.6% of the participants preferred written informed consent, while 30.2% supported audio and video recording. In terms of terminology, 40.4% preferred "participant," 28.8% favoured "subject," and 15.8% chose "respondent." Furthermore, the study explored attitudes towards special procedures for involving indigenous people,

with 80.9% agreeing on the need for such measures. However, 43.5% of the participants were not familiar with the concept of "voluntary participation by non-coercion," while 24% understood it as the absence of payment for participation. Moreover, 45.2% agreed that if a participant withdrew from a study, all their data should be removed from the analysis. The participants' perceptions also touched on confidentiality in research, with 59.6% believing that it required ethical judgment regarding what should and should not be published. Additionally, 49.3% thought that participants should receive transport, translation, and monetary compensation for maximum participation. Over 70% were aware of the ethical committee overseeing research activities in their institution, and 72.6% believed that providing proper information about research details increased participation and trust in the researcher. Lastly, 54.8% felt that vulnerable individuals should only be included in research if the outcomes directly benefited their group, and a significant percentage (66.4%) expressed interest in participating in future Research Ethics workshops.

Discussion

A cross-sectional study was conducted by to assess perception of research ethics among dental fraternity in Chennai. In a study conducted by Ravindran R, it was found that 50% of dental students were actively involved in research [6]. In our study, we observed a slightly higher involvement rate at 55.4%. Similarly, in a study by Saddam Al Demour, only 36.2% of participants had prior experience with clinical research, contrasting with our study's higher rate of involvement [7]. On the other hand, a study by Tarboush *et al.* [8] highlighted that a significant majority (93%) of respondents were engaged in research projects involving humans or animals, underscoring the need for comprehensive research ethics training. In contrast, our study revealed that many participants had no prior knowledge of the Helsinki Declaration, with only 40.4% associating it with ethical considerations in human research. This emphasizes the importance of incorporating international ethical guidelines into dental education and professional development to ensure that all practitioners and researchers are well-informed about their ethical responsibilities. In a study conducted by Mohesh Glad, a high level of awareness (91.5%) regarding the importance of informed consent was reported, with 85.9% believing that the informed consent process safeguards the rights of research participants [9]. Interestingly, nearly 92.5% practiced obtaining informed consent in their research projects, which is consistent with our study's findings. It's worth noting that in our study, only 42.5% of participants agreed that a subject's participation should be voluntary, and they can withdraw from the study at any time, indicating room for improvement in understanding this principle. In a study by Vyas *et al.*, 20% of participants felt that once a patient participated in a study, they should not be allowed to withdraw [10]. This contrasts with the principle of voluntary participation, where participants have the right to withdraw

their data if they decide to no longer participate. This principle was more widely accepted in our study, with 42.5% in agreement. In the study by Nithin Manchery Gopinath *et al.*, 81.4% of participants were aware of committees or organizations that review the ethical aspects of research in their institutions [11], which aligns with our findings. In a study by Kiran Kumar Mallela *et al.*, a majority of participants (>90%) were aware of ethical committees but had limited knowledge (8-35%) of various international ethical guidelines [12]. In our study, 70% of participants were aware of both ethical committees and the international ethical guidelines, indicating a relatively higher level of awareness. In our study, 54.8% of participants believed that vulnerable individuals should only be included in research if the outcomes directly benefited their group, highlighting the need for ethical considerations in research involving such populations. It is essential for researchers to demonstrate respect in all interactions with participants, refraining from judgment, discrediting, and ensuring their views are fairly recorded and considered, as implied by the use of the term 'participant' over 'respondent' or 'subject.' Special recognition and procedures may be necessary for indigenous peoples, as acknowledged in our study. In a study by Torabi M, 36.2% of participants expressed interest in participating in medical ethics workshops [13]. Our study revealed a higher level of interest, with a significant percentage (66.4%) eager to engage in future Research Ethics workshops. This demonstrates a clear enthusiasm within the dental community for enhancing ethical awareness and practices through education and training. Finally, Prajna *et al.* conducted a study to assess the knowledge and ethical practices among practicing dentists. The study aimed to evaluate the significance of ethical conduct in the dental profession, emphasizing the need for ethical awareness and adherence. They found that participants acquired more knowledge through work experiences and attending seminars [14]. This suggests that those who encounter ethical issues are more likely to seek additional sources of knowledge, such as continuing education and workshops. This highlights the importance of addressing ethical issues and providing ongoing ethical education in the dental profession.

Conclusion

In conclusion, this study highlights the importance of comprehensive formal ethics education in dental education and professional development. The findings suggest that although there are legitimate research activities among dental practitioners and researchers in Chennai, further progress can be made in terms of ethical awareness and understanding. This is essential to maintain the integrity of dental research and practice and to ensure that the safety and rights of research participants are protected. Interest in comprehensive ethics education and training among dental professionals provides a promising avenue for enhancing ethical standards and fostering a culture of ethical responsibility within the profession

Table 1: Distribution of subjects based on demographic details

Details	Options	Mean	Standard Deviation
Age	17-42	23.40	3.929
		Frequency [N]	Percentage [%]
Gender	Males	107	73.3
	Females	39	26.7
Qualification	Crri	63	43.2
	Dentist-Bds	55	37.7

	Dentist-Mds	12	8.2
	Pg- Students	16	11.0
Total		146	100.0

Table 2: Knowledge about Research Ethics among the study participants

Question	Options	Frequency [N]	Percentage [%]
Do you have a clear idea about research ethics?	No	64	43.8
	Yes	82	56.2
What is Helsinki's declaration concerned with?	Don't know	50	34.2
	Effective ways to obtain maximum participants for research.	26	17.8
	Ethical consideration of human research.	59	40.4
	Methods to improve oral health of people.	11	7.5
Does research ethics apply to only those studies that involve human beings?	Don't know	23	15.8
	No	79	54.1
	Yes	44	30.1
Do you think informed consent documentation is mandatory for any research involving human participants?	Yes	12	8.2
	No	109	74.7
	Don't know	25	17.1
Do you know what voluntary participation by non-coercion means?	Don't know	62	42.5
	Manipulation of participant by means other than money. No payment for the participants.	5	3.4
	Paying extra large sum of money, inconsistent with the participant's income.	35	24.0
	Payment can be made, commensurate with the normal expectations.	21	14.4
		23	15.8
Do you think special recognition and procedures are needed in case of indigenous people's involvement?	Yes	22	15.1
	No	96	65.8
	Don't know	28	19.2
If the researcher intends to audio or video record, is it mandatory to obtain special permission; even under privacy legislation of most countries?	Yes	20	13.7
	No	98	67.1
	Don't know	28	19.2
What does "Confidentiality" in research enables?	Don't know.	20	13.7
	Personal information can be published without the approval of participants.	19	13.0
	The researcher is entitled to publish any information revealed to him.	20	13.7
	There must be ethical judgement made to decide what must be published and what not to.	87	59.6
Are you aware of the presence of an ethical committee / facility, that oversees research activities in your institution?	No, I am not aware.	42	28.8
	Yes, I am aware of it.	104	71.2
Vulnerable people must be included in the study, only if the research outcome benefits the particular group. True or false?	True	32	21.9
	False	80	54.8
	Don't know	34	23.3
Does proper information of research details increase participants trust in researcher?	Don't know	21	14.4
	No	19	13.0
	Yes	106	72.6
What is the most preferred format to obtain informed consent?	Audio recording.	15	10.3
	Not aware.	15	10.3
	Video recording.	29	19.9
	Written format.	87	59.6

Table 3: Attitude and practice concerning research ethics among the study participants

Question	Options	Frequency [N]	Percentages [%]
Have you ever undertaken any research activities?	No	50	34.2
	Yes, due to academic demand.	47	32.2
	Yes, due to both personal interest and academic demand.	34	23.3
	Yes, out of personal interest.	15	10.9
Among the following statements, about what all the participants must be informed?	All of the above.	81	55.5
	All relevant information about the research.	24	16.4
	Don't know	10	6.8
	Possible risks of participation, if any.	19	13.0
	The fate of data obtained from them.	12	8.2
Do you think the informed consent must comprise of complete details regarding all sources of funding for the research?	Yes	31	21.2
	No	82	56.2
	Don't know	33	22.6
What do you consider as the most respectful terminology to describe the participating	Contributor, member	1	.7
	Don't know	19	13.0

individuals?	Participant Researcher Respondent Scholars Subject	59 1 23 1 42	40.4 .7 15.8 .7 28.8
If a research process induces arising of any emotional distress in the participants, what is the appropriate next step?	Don't know The research interaction should continue and follow up must be done till the distress is resolved. The research must be continued without any additional care. The researcher should not be concerned with it.	20 84 11 31	13.7 57.5 7.5 21.2
If the participant wants to withdraw themselves from the study at any stage, which option do you think is most appropriate?	All the data obtained from them must be removed from the analysis. Both (a) and (c) Don't know The participant can be made to continue the research by force. They must be allowed to withdraw at any time.	15 66 19 14 32	10.3 45.2 13.0 9.6 21.9
What facilities do you think must be provided to enable maximum participation?	Accessibility - to make easy transportation. All of the above Don't know Monetary compensation - to cover attending cost. Translation - for better understanding.	18 72 14 19 23	12.3 49.1 14.3 13.0 15.4
Will you be interested to participate in research ethics workshop in future?	Maybe No Yes	31 18 97	21.2 12.3 66.4

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