

## Original Research Article

# Describing the perceptions of bioethics training requirements among young medical professionals: an observational studies

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### ABSTRACT

**Background:** Medical Council of India emphasises the training on bioethics for medical graduates and included the same in medical curriculum reforms. However, the universal implementation of structured training in bioethics remains elusive due to many challenges. Hence the study was planned to describe the perception about the bioethics training needs among trainee interns and junior residents training at tertiary medical teaching hospitals across Tamil Nadu.

**Methods:** A web-based cross-sectional survey was conducted during September-December 2019. Google forms survey was designed, and link was disseminated using affinity groups and snowballing techniques through social media among current medical interns and junior resident doctors working at tertiary care teaching hospital settings across Tamil Nadu. Data was analyzed using MS Excel auto generated through google forms and descriptive statistics were performed.

**Results:** Among 136 respondents of online survey from across 25 medical colleges in Tamil Nadu, 73 (57.5%) were females, 57 (42.2%) had training on bioethics and 31 (54.4%) during internship period. During these trainings, experts in bioethics scholarship conducted training for only 34% of participants. Self-reported inadequate levels of awareness on bioethics was seen in 20.6% subjects and 17.8% subjects professed awareness on Indian Council of Medical Research clinical research ethics guidelines. Combination of curriculum and self-directed learning was the favoured teaching-learning method.

**Conclusions:** This study reveals major gaps in knowledge and attitudes of young medical professionals towards bioethics training and can be addressed through testing novel methods of training.

**Keywords:** Bioethics training, Likert Scale, Massive open online courses, Perceptions, Self-directed learning

### INTRODUCTION

Medical practice is a quickly evolving field necessitating young medical professionals to be updated with fundamental principles of evidence based medicine. Medical Council of India (MCI) clearly envisioned Indian medical graduates (IMG) to possess adequate knowledge on bioethics in Vision 2015 document and repeatedly reconfirmed its vision in recent reforms of medical

education.<sup>1</sup> Multiple studies revealed varying levels of knowledge gaps in bioethics leading to lack of confidence experienced by medical professionals in dealing day to day clinical practice.<sup>2-5</sup>

This results in grave consequences such as physical assault, physical infrastructure damage and ensuing legal hurdles which undermine the professionalism of practitioners.

Periodical assessment of knowledge and attitudes towards bioethics is essential to identify the emerging learning needs among young professionals and address the gaps through innovative and participatory teaching-learning methods (TLM). This is a definite way to facilitate acquisition of acceptable standards of bioethics related knowledge-skill set which will contribute to bioethics driven medical practice. In recent times, massive online open courses (MOOC) revolutionized medical education by enabling access to global educational content from esteemed universities to students from developing countries.<sup>6,7</sup> The awareness and utilization of MOOC courses among Indian medical professionals is an understudied area of research. In their review study, Rajiv Mahajan et al, unequivocally established the complementing role of MOOC in imparting soft-skills in addition to traditional systems such face-to-face knowledge gain in medical education.<sup>8</sup> Innovative teaching methods for bioethics training are actively explored in Indian context which emphasised the need for blended learning extending through the continuum of undergraduate, internship and post graduate periods of training in medical schools. Adapting active teaching principles of professionalism and ethics is proposed to be aligned with the 'hidden curriculum' motive of learning.<sup>9</sup> Medical Universities in South India implement 40 hour module for medical ethics training during MBBS period but such programs are rare and not universally conducted across India.<sup>10</sup>

This study findings should contribute to understanding the training needs in bioethics among young professionals who completed undergraduate training and inform training programs enhancing learning through participatory and immersive learning methodologies. With the above background, study was planned to describe the perception about the bioethics training need among trainee interns and junior residents training at tertiary medical teaching hospitals across Tamil Nadu.

## METHODS

A cross-sectional survey was conducted at Tagore Medical College and Hospital. The inclusion criteria include Medical interns and Junior Residents working in various Teaching Medical colleges of Tamil Nadu, willing to participate in the study. The study was conducted during September-November 2019. After extensive review of literature, a survey questionnaire was designed to collate the self-reported perceptions as young professionals about the importance of medical bioethics training for successful clinical practice using 5 item Likert Scale. A web-based google forms survey tool was designed incorporating the above themes in the survey items which will take 2-5 minutes for completion. Google forms is emerging as frequently used web-based tool for research purposes with intention of reaching geographically distant study subjects. The survey link <https://forms.gle/52YmJdqHDdWsvcPM9> was shared widely disseminated through affinity groups using

snowballing techniques through social media platforms including WhatsApp, Facebook. Google forms have the real-time, inbuilt visualization of auto-generated data analysis through pie charts and graphs and descriptive statistics were cross-checked through MS Excel sheet (auto-generated).

## RESULTS

Among 136 respondents from 25 medical colleges across Tamil Nadu, majority (73, 57.5%) were female, 114(84.45) were trainee interns in compulsory residential rotatory internship (CRRRI) period and 78(57.8%) reported lacking training in bioethics. Among 57(42.2%) subjects with training in bioethics, undergraduate training was for 26(45.6%), 11(20%) mentioned workshops as mode of training and external faculty acted as resource persons only in 19(33.8%) incidents (Table 1).

**Table 1: Socio-demographic features and characteristics of training on bioethics of study subjects.**

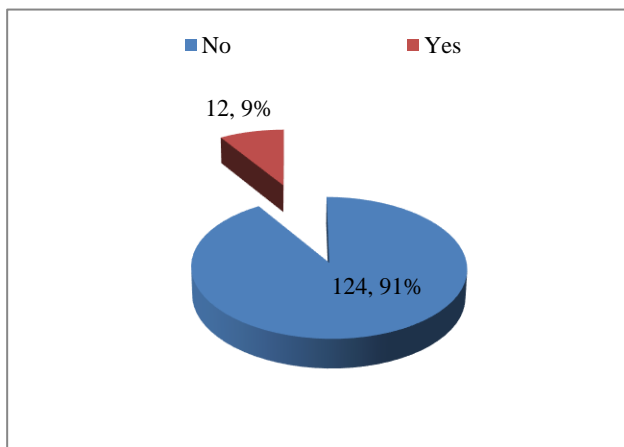
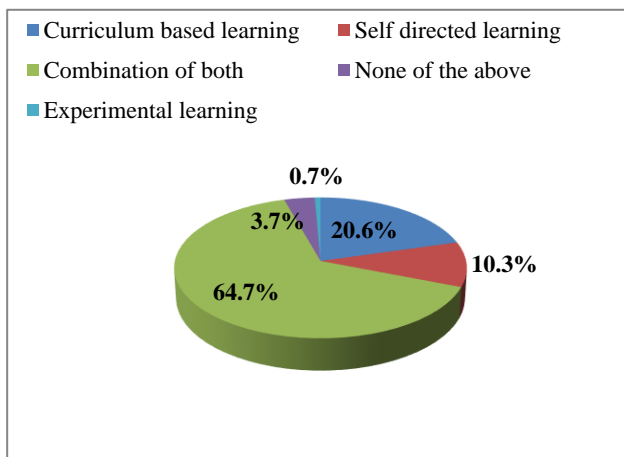
Variable	Frequency	%
<b>Gender (n=136)</b>		
Male	58	42.6
Female	78	57.4
<b>Career status (n=136)</b>		
Intern	115	84.6
JR	21	15.4
<b>Bioethics training (n=135)</b>		
Yes	57	41.9
No	79	58.1
<b>Training during (n=57)</b>		
UG	26	45.6
Internship	31	54.4
<b>Training method (n=55)</b>		
Lecture	44	75.9
Workshop	11	24.1
<b>External resource person (n=56)</b>		
Yes	19	33.9
No	37	66.1

The respondents were asked to self-report their perception about the importance of training on bioethics on a Likert scale. Very negligible proportion of the study participants reported that negative score items for the importance of training. Major proportion was reported as neutral for adequate awareness on bioethics and ICMR guidelines. Majority-83.8% (agree and strongly agree) favoured compulsory training during internship period. Minimal proportions (18.3%) were reported for the ability to manage bioethics issues related to clinical practice (Table 2).

Awareness on massive open online courses (MOOC) for bioethics training among study subjects was analysed, of which only 12(9%) were aware of massive open online courses (Figure 1).

**Table 2: Self-rated awareness on bioethics components as per Likert scale among study subjects (n=136).**

Bioethics	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	N (%)	N (%)	N (%)	N (%)	N (%)
Possess adequate awareness on medical bioethics	3 (2.2)	25 (18.4)	76 (55.9)	28 (20.6)	4 (2.9)
Adequate awareness on ICMR guidelines	6 (4.4)	39 (28.7)	67 (49.3)	24 (17.6)	0
Bioethics training is essential from UG level	0	0	10 (7.4)	81 (59.6)	45 (33.1)
Compulsory training during Internship	1 (0.7)	3 (2.2)	18 (13.2)	73 (53.7)	41 (30.1)
Bioethics training essential for clinical practice	0	4 (2.9)	35 (25)	59 (43.4)	39 (28.7)
Able to manage bioethics issues related to clinical practice	1 (0.7)	29 (21.3)	81 (59.6)	21 (15.4)	4 (2.9)

**Figure 1: Awareness on massive open online courses (MOOC) for bioethics training among study subjects (n=136).****Figure 2: Preferred teaching learning methods for bioethics training among study subjects (n=136).**

Regarding the Preferred teaching learning methods for bioethics training among study subjects, it was noted that, majority (64.7%) chose a combination of curriculum based and self-directed learning. Among the few (13) subjects who shared the sources for self-directed learning, newspapers and social media including WhatsApp forward messages (Figure 2).

## DISCUSSION

This study assesses the current perceptions of young medical professionals regarding the importance of training in medical bioethics. The findings show that the consensus is towards the need for bioethics training for young medical professionals as it is linked to successful clinical practice. Approximately 20% subjects cited inadequate awareness on medical bioethics which remains a concern. Health care delivery systems are guided by a complex set of factors such as clinical knowledge and skills and competencies in medical ethics is essential for upholding the professional integrity and safeguarding against physical and infrastructural assault which are on the rise in recent times. Rao in the seminal article on judicial perspective of medical negligence liability highlighted the need for delicate balance between professionalism of practitioners and patient rights with a two-pronged approach.<sup>9</sup>

Self-regulation as tool for improving the image of the medical professional is proposed by Ramana et al, and this will only be effective with grounded learning of theoretical and fundamental medical bioethics and supplemented through self-reflection about the critical issues related to bioethics in day to day practice.<sup>10</sup>

Majority of these professional favour continuum model of training starting from undergraduate years and intensified with mandatory courses during internship. This is similar to findings by Mahajan et al, who recommended an urgent need for fulfilling the above training need.<sup>11</sup> Code of Ethics Regulations introduced by the apex body for medical education in India in 2002, but structured training with prescribed syllabus was never a part of undergraduate curriculum till recently.<sup>12</sup> Formal training modules including participatory learning principles are essential to gain acceptance from the learning community to forge improvements in the knowledge-skill set of these young professionals. Sarma et al, introduced a four week for undergraduates of Pre Final MBBS with participatory methods such as group discussions in addition to lectures and reported improved understanding on bioethics.<sup>2</sup> Performance-based evaluation of medical ethics in practise was proposed by Rameshkumar et al, though the challenges in designing them was foreseen as a

challenging task.<sup>3</sup> Bi-directional benefits from both teacher and learner perspectives were reported by implementing participatory learning methods.<sup>13</sup> This is similar to this observation from this study where curriculum based teaching in combination with self-directed learning was most favoured (64.7%) pathway for enhancement on bioethics information. Curriculum based teaching when delivered with committed academic teachers and clinical practitioners sharing their experiences in dealing with bioethics makes the learners engaged and identify the practical application in their contemporary practice of medicine. Though experiential learning was chosen by negligible participants, this is emerging as an innovative methodology as cited by Bilgin et al, which needs to be explored in Indian medical education settings.<sup>14</sup>

In this study, negligible subjects 12(9%) were aware of massive open online courses (MOOC) which reveals a huge gap in the utilization of widely available world-class learning content. This is consistent with findings from Aboshady et al, from Egypt where only one-fifth of 2700 surveyed medical undergraduates were aware of MOOCs and only 6.5% enrolled in these courses.<sup>15</sup> In the same study, completion rate of the courses was 23.3% and was identified as a potential platform for improving theoretical knowledge. Institutions and faculty can facilitate the acceptance of MOOC courses by medical professionals under training by curating the content available on various platforms such as Coursera, EdX which are free of cost for the participants.<sup>16</sup>

Promoting the use of innovative learning platforms and tools will be more effective as the current generation are most invested in digital tools which can be channelized for advances in medical education. The Institutional Ethics Committees (IEC) play an important role in dissemination the guidelines on ethics related to research but they can also play more active role in shaping the ethics curriculum for the institutions. The systematic assessment of the learners utilizing MOOC platforms for medical education purposes and its feedback on the effectiveness of these courses is the need of the hour.<sup>7</sup>

## CONCLUSION

The study findings concluded that, in spite of the available and easily accessible online resources and the acceptance of importance of Bio-ethic training by the study participants, there is a strong lag in adequacy towards bio-ethics awareness. This could be overcome only by emphasizing right from their undergraduate period, by including Bio-ethics in the medical curriculum as an individual chapter or by demonstrating case scenarios of ethical issues and to provide necessary assessment method of the same in the form of assessing a doctor-patient relationship.

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