

Barriers to building an effective workforce for respiratory research in India: A survey of American Thoracic Society Methods in Epidemiologic, Clinical, and Operations Research India 2017 participants

Sir,

Respiratory disorders have an increasingly adverse impact on the economy, health, and productivity of nations, especially in resource-poor countries.^[1,2] According to the Global Burden of Disease Study, India is among the lower half of 195 countries when ranked according to age- and risk-standardized mortality rates.^[3] The trend of worsening air pollution in the region suggests that the burden of respiratory disease in India is likely to increase further.^[4]

Improving respiratory health in India remains a work in progress. An inadequate number of clinician-scientists contribute to the lack of pertinent studies. The reasons for such inadequacy have never been explored. To our knowledge, there are no published studies that have examined barriers to developing a workforce of clinician-scientists devoted to improving respiratory health in India. In this report, we present the design, results, and implications concerning respiratory research in India. These are findings from an online questionnaire of individuals who completed the 2017 American Thoracic Society (ATS) Methods in Epidemiologic, Clinical, and Operations Research (MECOR) Program in Mahabalipuram, India.^[5] MECOR India is a week-long hands-on program funded by the US Centers for Disease Control and ATS, which promotes the knowledge and skills necessary for clinical research in respiratory disorders and also provides pilot grants on a competitive basis to the participants.^[6] This is not an attempt to evaluate the perceived effectiveness of the MECOR program or to evaluate the teaching. The only objective was to examine the attitudes, barriers to support, and resources for respiratory research in India.

We based the questionnaire for this study on a peer-reviewed publication about barriers to dental research in India^[6] and adapted it using input from MECOR India faculty. The revised questionnaire included 28 items and was self-administered. The questionnaire included sections about the demographics of the respondent (6 questions), attitudes about research (5 questions), personal research support and barriers (7 questions), institutional research environment (8 questions), and support for a multicenter research network (2 questions). Response options for most questions were closed-ended and required selecting a single answer (e.g., strongly agree, agree, disagree, or strongly disagree).

Thirty-three individuals completed the questionnaire (33/35, 94% response rate); 30% were women, 100% had a postgraduate medical degree (MD or diploma), and 67% were practicing physicians. Fifty-three percent conducted their research in government medical colleges, while 25% worked in private medical colleges and 22% worked in autonomously funded institutions (such as the All India Institute of Medical Sciences) or nongovernmental organizations. Fifty-seven percent of respondents reported that research in India was not of adequate quality. The majority agreed that conducting research should be a requirement for undergraduate or postgraduate degrees (68% and 94%, respectively) and 97% believed that conducting research should be required of teaching faculty. Seventy-five percent reported that research was encouraged by their institution and that international publications helped in promoting their careers (72%) [Table 1].

Although 67% felt that their research supervisor had sufficient research expertise, respondents reported several barriers to actually do clinical research. One of the major barriers was heavy clinical or administrative duties (59%) and 40% of respondents reported inadequate “protected research time.” Further, 68% reported having no personal financial incentive for conducting high-quality research. As many as 84% respondents reported having inadequate access to full-text journal articles. Additional barriers to research included inadequate interdepartmental coordination, institutional funding for pilot studies, and assistance when applying for research grants studies. There was consensus (100% agree or strongly agree) that the creation of a multicenter research network would be helpful [Table 1].

While being limited to a survey of a modest number of participants of a single MECOR India course and the lack of a comparison group, our survey suggests the need for local organizations to take initiatives for overcoming at least some of the barriers such as protected research time, personal incentives (e.g., salary), and access to the infrastructure (e.g., full-text journals, interdepartmental agreements) necessary to pursue research successfully. Partnering with globally successful research methodology programs such as the ATS MECOR program, which are specifically designed to create respiratory research workforces in countries such as India, will be of immense help, especially when planning multicenter or multinational studies.

Table 1: Questionnaire items and responses

Item	Strongly agree, n (%)	Agree, n (%)	Neutral, n (%)	Disagree, n (%)	Strongly disagree, n (%)	n (%)
Section: Personal attitudes about research						
Research done in other parts of the world is applicable to India	2 (6)	9 (27)	14 (42)	7 (21)	1 (3)	-
Quality of research in India is adequate	4 (12)	4 (12)	6 (18)	14 (42)	5 (15)	-
Medical students should be required to do research as part of their degree	11 (34)	11 (34)	4 (12)	4 (12)	2 (6)	-
Postgraduate students should be required to do research as part of their degree	25 (78)	5 (16)	0	1 (3)	1 (3)	-
Teaching faculty should be required to conduct research	21 (68)	9 (29)	1 (3)	0	0	-
Section: Personal research support and barriers						
Publications in international journals help me to get promoted	12 (38)	11 (34)	7 (22)	2 (6)	0	-
My English is a barrier to publishing in international journals	1 (3)	5 (16)	6 (19)	13 (41)	7 (22)	-
Research is encouraged at my institution	10 (31)	14 (44)	6 (19)	2 (6)	0	-
I receive personal financial incentives for "quality research"	2 (6)	3 (9)	6 (19)	9 (28)	12 (38)	-
I have time left for research after clinical, teaching, admin work	2 (6)	7 (22)	4 (12)	15 (47)	4 (12)	-
During protected research time, I am not asked to do clinical teaching, or admin work, n (%)	5 (16)	3 (9)	7 (22)	8 (25)	9 (28)	-
If i get a grant, I have protected research time, n (%)	-	-	-	-	-	19 (63)
Section: Institutional research environment						
Full-text access to medical journals for research, n (%)						
None of what i need	-	-	-	-	-	1 (3)
Some of what i need	-	-	-	-	-	27 (84)
All of what i need	-	-	-	-	-	4 (12)
Good interdepartmental coordination to initiate/support research	8 (25)	10 (31)	8 (25)	5 (16)	1 (3)	-
Research supervisor has adequate expertise	5 (16)	15 (48)	4 (13)	6 (19)	1 (3)	-
Able to get funding from my institution to start research	4 (12)	8 (25)	9 (28)	4 (12)	7 (22)	-
My institution trains/supports me to apply for funding	5 (16)	9 (28)	11 (34)	4 (12)	3 (9)	-
Familiar with ICMR/NIE online HRF course (after hearing a talk about this in MECOR 2017)	14 (44)	10 (31)	3 (9)	4 (12)	1 (3)	-
Taken ICMR/NIE HRF course, n (%)	-	-	-	-	-	8 (25)
Participated in other research courses past 12 months (other than MECOR, NIE, HRF), n (%)						
Online	-	-	-	-	-	1 (6)
In person	-	-	-	-	-	12 (75)
Others	-	-	-	-	-	3 (19)
Section: Multicenter research networks						
Joining a multicenter research network will help me to do research	24 (75)	8 (25)	0	0	0	-
I have participated in multicenter research in the past 24 months, n (%)	-	-	-	-	-	20 (62)

NIE: National Institute of Epidemiology, ICMR: Indian Council of Medical Research, HRF: Health Research Fundamentals, MECOR: Methods in Epidemiologic, Clinical, and Operations Research

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Conflicts of interest

There are no conflicts of interest.

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