Sir,

Chronic obstructive pulmonary disease (COPD) is a noncommunicable disease of increasing concern for our country. Globally, India has the highest number (about 55.3 million) of people living with COPD, and it ranks the second in COPD mortality in the world. A large population in India is at the risk of developing COPD due to the exposure to tobacco smoke, indoor and ambient air pollution, and occupational exposures. COPD can be prevented and controlled by educating people about the risk factors, the disease, early detection, referral, and treatment. However, its diagnosis and management in India suffers due to its covert onset and delayed presentation largely attributed to the normal aging process, less awareness among community and health professionals, low public health importance, lack of a validated tool for screening and relatively sophisticated but underutilized equipment, the spirometer, as the gold standard for the diagnosis of COPD. This also exerts a huge economic burden on the country which can be reduced by community health programs and guideline-based management.

Government of India (GOI), for about a decade now, has actively engaged in reducing the suffering of noncommunicable diseases through the National Program for the Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) and has included COPD in this program. The strategic approach of NPCDCS that includes screening and referral by existing accredited social health activists (ASHAs) can also be replicated for COPD. In anticipation of such an activity to be soon initiated by GOI and also for our institutional implementation research project for COPD awareness and screening in a rural population using a questionnaire and peak flow meter as screening tools, we developed a comprehensive training material (TM) for ASHA workers for awareness generation, early detection, and early referral. TM comprised reading material in vernacular (Marathi) on the risk factors, symptoms, prevention of COPD, population-based screening tool comprising a questionnaire and peak expiratory flow rate (PEFR), steps to measure PEFR using peak flow meter supplemented with an audiovisual demonstration in Marathi language by an expert, decision-making algorithm for the referral of suspected cases to the Primary Health Center and follow-up. Effectiveness of self-read TM and audiovisual aid for PEFR technique was assessed using a one-group pretest-posttest quasi-experiment study. In the field practice area of rural health training center of a medical college located in the Mulshi block of Pune district.

We used a semi-structured questionnaire to assess the knowledge of participants before and immediately after self-reading of TM. A checklist comprising the standardized steps for recording PEFR was prepared to evaluate their PEFR manoeuvre. Feedback about the content of TM was recorded using a Likert scale. PEFR technique was evaluated against the standardized steps to use a peak flow meter developed by the subject experts. Participants’ emic perspectives were requested through the testimonies in their vernacular language Marathi. All tools used were in the vernacular language, Marathi. Improvement of 50% in mean postreading knowledge from prereading knowledge was considered as the significant knowledge gain. Accurate performance of 9 out of 12 standardized steps of PEFR procedure was considered as optimal knowledge for performing PEFR.

The mean age of the participants was 38.6 years (standard deviation [SD] ± 6.8). Majority of them (78%) were educated at least up to the 10th standard. Mean work experience was 7.7 years (SD ± 2.4). Average work hours were 3.5 h per day (SD ± 1.9). We found that the mean knowledge about COPD which scored at 15.7% (±24.7%) before reading our TM significantly increased to 73.1% (±27.2%) after self-reading of the materials (t = −9.41, P ≤ 0.000). Ten out of 20 questions showed more than 50% increase in knowledge, and three other showed improvement in knowledge by 48% [Figure 1]. Assessing individual change in knowledge, we found that the knowledge of 20 out of 23 participants had improved by more than 50% (range: 50%–80%). All participants (100%) had understood their critical roles in the COPD awareness and control program with almost all understanding correctly about screening all households in their area.

Feedback about the TM collected from the participants (n = 22) using the 7-point Likert scale showed that the overall score of agreement was 6.7 out of 7.0 (range = 6.3–7.0) in favor of the ease of understanding, logical flow of content, clear pictorial graphics, and helpfulness in understanding their role [Figure 2]. Majority of the participants performed all 12 standard steps acceptably well; the mean was 79.3% (±9.8). Forty-four percent participants executed nine must-to-do steps out of 12 steps correctly and nearly three-fourth of the participants accurately performed seven must-to-do steps. We got encouraging responses from the participants about our TM as below:

*I read the material made for ASHA and understood the information provided in it... It has got appropriate images...*
and illustrations...I found it easy to understand after reading [ASHA-16].

I was not aware what disease COPD is, I benefitted by reading about the disease being caused by smoke... (Now), I could play a role by creating the awareness in community... I would also like to know more about its treatment... (ASHA-10).

The results suggest that a single self-reading of TM for about 40-min duration was enough to equip ASHA workers to undertake community-based prevention, control, and screening of COPD using a questionnaire and PEFR measurement whenever such a program is launched. Thus, a half-day training using resources like our TM with audiovisual aid of PEFR techniques could be incorporated within existing training schedule of ASHA for their up-skilling.

However, we feel that the construct and content of our TM were effective to capacitate ASHA workers in playing a pivotal role in community-based COPD prevention and control program. Further research may support our recommendation of incorporating a half-day training in the regional languages using this material in existing training schedule of ASHA workers in India.

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Conflicts of interest
There are no conflicts of interest.

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