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# **Challenges in performing Spirometry as reported by patients and spirometry technicians: A Multicentric Study from India**

Asthma - diagnosis, COPD - diagnosis, Spirometry

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## **Background:**

Spirometry is a gold-standard diagnostic tool for various respiratory conditions, with multiple challenges, effort-dependent being one of them, leading to its underutilization. We aimed to study the challenges faced whilst performing spirometry by patients and well-trained spirometry technicians across India.

## **Methods:**

A cross-sectional, observational study was conducted across 10 pulmonology centers in India, which had well-trained spirometry technicians. Patients referred for spirometry were invited to participate and share their experiences from the selected centers.

## **Results:**

12 technicians (mean experience of 6.9 years) performed spirometry on 316 patients (mean age 44.4 ± 17.2 years). Despite expert guidance, 34.9% of patients found the test challenging. Among these, 58.2% struggled with forceful prolonged blows, 22.7% had difficulty following instructions correctly, and 12.73% found the mouthpiece uncomfortable. The spirometry technicians reported that 29% of patients

encountered issues, primarily breathing difficulties (74.7%), followed by challenges in adhering to instructions (9.9%), and factors such as hearing impairment, nervousness, or hesitation on the part of the patient in doing the test (15.38%). 34.81% of patients expressed a desire for a simpler test.

#### Conclusion:

Well-trained technicians find spirometry challenging to perform in one third of patients, with a similar proportion of patients reporting difficulties with the procedure and expressing a desire to have a simpler test. This underscores the need for user-friendly alternatives to spirometry.