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ORIGINAL ARTICLE

Knowledge and use of Spirometric Software (Pulmonary Function Test) by Health Care Workers of Gujarat

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ABSTRACT

Introduction: Pulmonary Function Tests (PFTs) spirometry helps in evaluation of the mechanical function of the lungs. They are based on research norms of gender, height & age, where predicted values compared with actual values. The normal spirometric values vary considerably according to ethnicity and the absence of spirometric reference values in a specific population result in the misinterpretation of spirometric results.

Need of study: There are various Spirometric software available & it's important to utilize the software which is most appropriate for particular ethnicity.

Amis & objectives: To identify the knowledge and use of Spirometric software by healthcare workers.

Methodology: Cross-sectional online questionnaire-based study was conducted across Gujarat from. The study involved health care workers including doctors, nurses, physiotherapists etc. The structured questionnaire was disseminated via Google forms. The questionnaire contains 25 questions. For statistical analysis done by applying independent sample t-tests and ANOVA.

Result: A total of 50 responses were received. 55 % of healthcare workers not aware which software are they using when performing PFT. 80% are not aware about availability of Indian software and 87% of health workers believed to develop new Indian software for interpretation.

Conclusion: Overall knowledge and use of spirometric software in certain component were unsatisfactory and inadequate among healthcare workers of Gujarat. There is need to develop spirometric software based on Indian ethnicity. And awareness should increase related to important of choosing appropriate software according to population for better interpretation.

KEYWORDS

• Knowledge • Spirometric • Health care workers

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INTRODUCTION

Pulmonary function testing boasts a rich and varied history, tracing back to ancient Greece, where efforts were made to comprehend the mechanisms governing breathing in both states of health and illness. To enrich this historical perspective, numerous comprehensive accounts of pulmonary function and physiology have been documented in literature.

John Hutchinson is commonly credited with inventing spirometry in the middle of the 19th century and coining many spirometry terms such as vital capacity, that are still used today.[1] Spirometry test is widely used as an investigation tool in respiratory conditions by healthcare workers including physicians, cardiologists, physiotherapists, anesthetics etc. It is also widely utilized tool in the research field. If a person going for any surgery PFT will be there in their fitness testing.

Spirometr is an overlooked global health marker. Spirometry adds prognostic value to other health markers used in clinical practice. Spirometry can identify increased risk of both respiratory diseases and non-respiratory diseases. Spirometry should be assessed during childhood, adolescence and/or young adults, particularly in high-risk groups.[2]

Pulmonary Function Tests (PFTs) – spirometry helps in evaluation of the mechanical function of the lungs. They are based on research norms of gender, height & age, where predicted values compared with actual values. The normal spirometric values vary considerably according to ethnicity and the absence of spirometric reference values in a specific population result in the misinterpretation of spirometric results.

There are various spitometric software are available which gives predicted values based on research norms such as age, gender, height and weight.

Need of study: There is various Spirometric software available & it's important to utilize the software which is most appropriate for particular ethnicity.

AMIS & OBJECTIVES

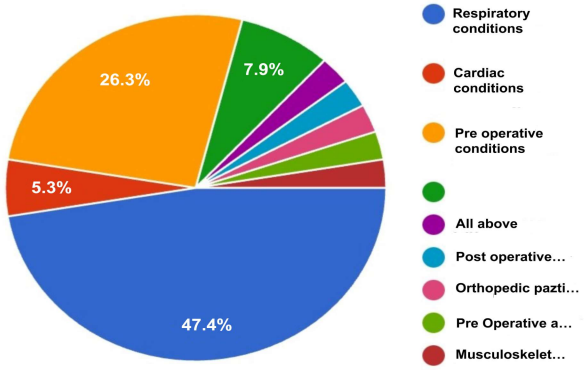
To identify the knowledge and use of Spirometric software by healthcare workers.

METHODOLOGY

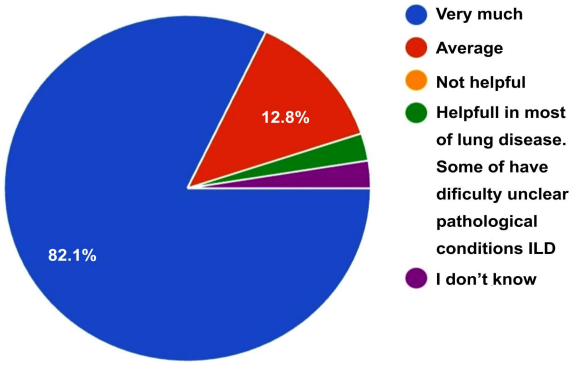
Cross-sectional online questionnaire-based study was conducted across Gujarat. The study involved health care workers including doctors, nurses, physiotherapists, physicians, anesthetics etc. The structured questionnaire was disseminated via Google forms. Google form has been circulated through email and messages. The questionnaire contains 25 questions. It has included consent of subject and questions related to PFT – Spirometry test. The statistical analysis was done by applying independent sample t-tests and ANOVA.

RESULT

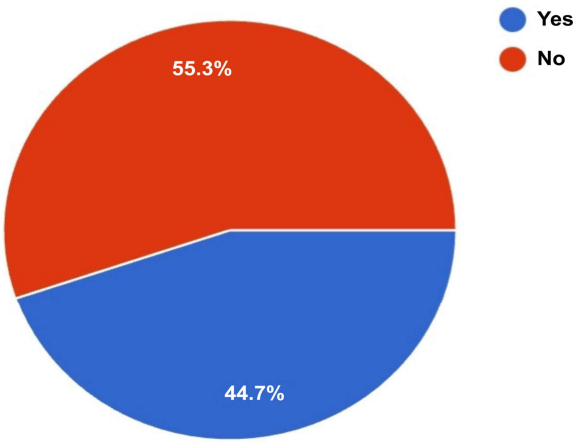
A total of 50 responses were received. Out of 55% of healthcare workers not aware which software are they using when performing PFT. 80% are not aware about availability of Indian software and 87% of health workers believed to develop new Indian software for interpretation.



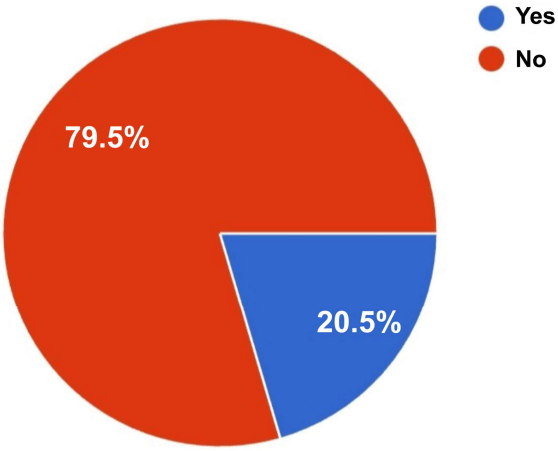
Which type of patients you get the most?



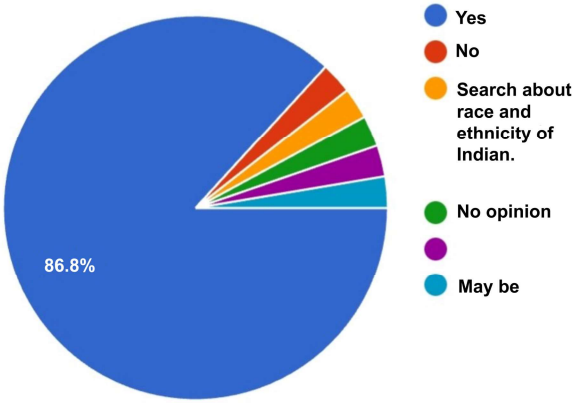
How much PFT is helpful in diagnosis and treatment according to you?



Are you aware of which software of spirometer are you using?



Are you aware of any Indian PFT software?



According to you is there any need to develop new Indian PFT software/update spirometric values of Indian population?

DISCUSSION

The research sample comprised 50 subjects, out of which a higher percentage of participants were female (71%) and a lesser percentage of male participants (29%). In our study we found that health care workers have more respiratory patients for spirometric evaluations. 81% of healthcare workers believe that spirometry is very helpful in diagnosis and treatment purpose, which is very similar to one of previous study showed that 80% of respondents agree that spirometry is essential for diagnosis.[3] We also found in our study that only 43% of healthcare workers are aware which PFT software they are using in test. Software plays an important role in diagnosis because comparative values are based on ethnicity of population. There are various softwares available with any PFT machines such as European software, Asian software, American software and even Indian software. In our study we found that only 19% subjects aware about availability of Indian software. In India Dr. Kamat and Dr. Chabra's PFT software is available which are based on Indian population norms. 85% healthcare workers believes that there is need to develop a new or update spirometric values based on Indian population. This study showed that the level of knowledge and awareness of health care workers of Gujarat on pulmonary Function Tests software was inadequate, Which was very much similar to study of Halemaneyavaradananagowda[4] and Olufemi O Desalu.[5]

CONCLUSION

Overall knowledge and use of spirometric software in certain components was unsatisfactory and inadequate among healthcare workers of Gujarat. There is need to develop spirometric software based on Indian ethnicity. And awareness should increase related to the importance of choosing appropriate software according to population for better interpretation.

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