

Original Article

EVALUATION OF KNOWLEDGE AND ATTITUDE ON RESPIRATORY DISEASES AMONG PHARMACY STUDENTS OF CHITRADURGA: A PROSPECTIVE OBSERVATIONAL STUDY

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ABSTRACT

Objective: The objectives of the study were to evaluate the basic knowledge and attitude regarding Respiratory Diseases among Pharmacy students of Chitradurga and to analyze and assess the level of attitude regarding Respiratory Diseases.

Methods: This was a Prospective Observational study that was conducted among the Pharmacy students of Chitradurga for six months. Statistical analysis was done using the Descriptive method to obtain the frequency and percentage; one sample and paired sample T-test were applied to determine any significant difference between quantitative variables.

Results: A total of 250 participants from Pharmacy College were enrolled in the study. All the subjects were in the range of 16-27 y old with which 129 (51.6%) students were from the 16-21 age group and 121 (48.4%) students were from the 22-27 age group from the total subjects. Out of 250 participants, 159 (63.3%) were females and 91 (36.4%) were males. The study showed a correlation of age with knowledge i.e. Age group 22-27 y was made based on knowledge and attitude, which revealed that females (mean \approx 9.6) had a better level of knowledge and also better attitude compared to the age group 16-21 y. It also shows that female individuals (9.6) are having higher knowledge and attitude toward respiratory diseases than males (9.05) regarding Respiratory Diseases.

Conclusion: The assessment individuals had higher knowledge and awareness of respiratory diseases than males (mean \approx 9.05). It also revealed that individuals in the age group of 16-21 and 22-27 had different levels of knowledge of the respiratory disease in which 22-27 (mean \approx 9.7) age group individuals are having high knowledge and awareness of respiratory diseases than 16-21 (mean \approx 9.2) age group.

Keywords: Respiratory diseases, Knowledge, Attitude, Education

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INTRODUCTION

Chronic respiratory diseases (CRDs) are recognized as being the major cause of premature death in adult populations worldwide. Preventable and treatable CRDs include chronic obstructive pulmonary disease (COPD), asthma, and respiratory allergies. In general, the prevalence of CRD is increasing everywhere and in particular amongst children and the elderly [1]. More than twelve million children die every year due to acute respiratory illness in developing countries; acute respiratory diseases are reported to be the third leading cause of child morbidity and mortality [2]. COPD is characterized by progressive airflow obstruction and destruction of the lung parenchyma and is caused by chronic exposure of genetically susceptible individuals to environmental factors [3].

Asthma is the major inflammatory disorder of airways having a kingpin role of various cells and cellular elements, mainly mast cells, eosinophils, T-lymphocytes, macrophages, neutrophils, and epithelial cells [4]. Asthma is one of the most common chronic diseases of childhood and a major health problem not only in India but globally. A multifold increase in the incidence of bronchial asthma has been reported in the past decade. The contribution of various risk factors associated with the incidence of asthma may vary with geographical locations, local traditions, customs, and environmental factors. Understanding associated risk factors such as family history, exposure to smoke (indoor or outdoor), allergen, and others may help to take suitable and timely preventive measures [5]. Chronic obstructive pulmonary disease (COPD) is a leading cause of morbidity and mortality worldwide. COPD is a progressive disease characterized by airflow limitation that is not fully reversible and is associated with an abnormal inflammatory response of the lungs to noxious particles or gases [6]. Chronic bronchitis (CB) is a common but variable phenomenon in COPD. It has numerous clinical

consequences, including an accelerated decline in lung function, greater risk of the development of airflow obstruction in smokers, a predisposition to lower respiratory tract infection, higher exacerbation frequency, and worse overall mortality. It is known now that many patients with severe emphysema can develop CB, and small airway pathology has been linked to worse clinical outcomes, such as increased mortality and lesser improvement in lung function after lung volume reduction surgery [7].

Lung cancer remains the leading cause of cancer mortality in men and women in the US and worldwide. About 90% of lung cancer cases are caused by smoking and the use of tobacco products. However, new factors such as radon gas, asbestos, air pollution exposures, and chronic infections can contribute to lung carcinogens [8]. Acute respiratory diseases are an important public health problem. Worldwide they are responsible for considerable morbidity and mortality and lead to an increase in absence from work and school and an increased number of consultations with clinicians. Known risk factors for children are for instance, young age, environmental tobacco smoke, home dampness, and attending day-care centers [9].

Most people in India are at high risk of developing the respiratory disease due to various factors like explosive outdoor air pollution, indoor biomass smoke, occupational exposure, and community-acquired infections. Also, most of the village people are unaware of using medications prescribed for respiratory diseases, such as inhalers, nebulizers, and antibiotics. By educating the people about the infections and the use of medications, we can avoid the spreading of infections and contribute to the well-being of the people. Therefore by considering the above statements; there is a need to evaluate the knowledge and attitude on respiratory diseases that may improve the level of quality of life and attitude towards respiratory diseases.

MATERIALS AND METHODS

This was a prospective observational study conducted among Pharmacy students of SJM College of Pharmacy, Chitradurga for six months. A total of 250 students were enrolled in the study. The inclusion criteria include Pharmacy students in Chitradurga, both male and female students, those who give consent to be a part of this study, and both hostellers and day scholars. The exclusion criteria were other than Pharmacy students and those who are not interested to fill out a questionnaire. The study was conducted after obtaining approval from the Institutional Ethical Committee of SJM College of Pharmacy, Chitradurga. Ref No: SJMCP/688/2021-2022.

After obtaining informed consent, a self-administered questionnaire on knowledge and attitude regarding Respiratory Diseases was provided using Google forms. Data were collected by the investigators and confidentiality was maintained during the data

collection process. The knowledge and attitude-based questionnaire were assessed and mean knowledge and attitude of the same were determined.

Statistical analysis

The data were entered in Microsoft Excel 2010 version and the results were analyzed using Statistical Package for Social Services (SPSS 16.0). Descriptive methods were applied to obtain the frequency and percentage, and one sample and paired sample T-test were applied to determine any significant difference between quantitative variables.

RESULTS

In this study, a total of 250 participants were enrolled during the study period. Out of which 159 (63.6%) were females and 91 (36.4%) were males. The results are shown in table 1.

Table 1: Details of gender-wise distribution (n=250)

S. No.	Gender	Frequency	Percentage
1	Males	91	36.4
2	Females	159	63.6
Total		250	100

Table 2: Response given by the Subjects to the question: Do you care about reducing indoor smoke and dust?

Answer given	Gender		Age group					
	Males		Females		16-21		22-27	
	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)
No	2	2.2	5	3.1	3	2.3	4	3.3
Yes	89	97.8	154	96.9	126	97.7	117	96.7
TOTAL	91	100	159	100	129	100	121	100

Attitude-based questionnaire assessment

Participants' responses to attitude-based questions showed that most of the students follow good attitudes and are aware of respiratory diseases. The majority of the students cared about reducing indoor smoke and dust; the results are shown in table 2.

Knowledge assessment

Distribution of Age group V/s Mean knowledge scores based on one-sample T-test

Out of the 250 participants, the results showed that the mean values of knowledge were 9.1 for the age group 16-21 y and 9.6 for the age group 22-27 y. Standard deviation values were 1.551 and 1.38065 for the age group 16-21 y and 22-27 y, respectively. Standard Error Mean values were .137 and .12551 for the age

group 16-21 y and 22-27 y, respectively. The results were graphically represented in table 3.

Distribution of Age group V/s mean knowledge scores based on paired sample T-test

Out of the 250 participants, the results indicate that the Mean value was -4.7934, Standard deviation was 2.03347, Standard Error Mean was .18486, t-statistic was -2.593, degree of freedom was 120, and significance probability (p) was .001. Hence it was concluded that the age group of 16-21yr and 22-27years individuals had different levels of knowledge about respiratory diseases. Comparatively, 22-27 (~9.7) age group individuals had higher knowledge and awareness of Respiratory disease than the 16-21 (~9.2) age group due to their level of education with each passing year in their course of study. The results were tabulated in table 4.

Table 3: Distribution of Age group V/s mean knowledge scores based on One-sample T-test

Age group	N	Mean	Std. deviation	Std. error mean
16-21	129	9.1	1.551	.137
22-27	121	9.6116	1.38065	.12551

Table 4: Distribution of Age group V/s mean knowledge scores based on paired sample T-test

Age group	Paired differences				t	df	Sig. (2-tailed)	
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
				Lower				Upper
16-21 and 22-27	-4.7934	2.03347	.18486	-8.4535	-1.1333	-2.593	120	.001

Distribution of gender V/s Mean knowledge scores based on one-sample T-test

Out of the 250 participants, the results showed that the mean values of knowledge were 9.0549 for Males and 9.4717 for Females.

Standard deviation values were 1.65571 and 1.37708 for Males and Females, respectively. Standard Error Mean values were .17357 and .10921 for Males and Females respectively.

The results were tabulated in table 5.

Table 5: Distribution of gender V/s mean knowledge scores based on one-sample T-Test

Gender	N	mean	Std. deviation	Std. error mean
Males	91	9.0549	1.65571	.17357
Females	159	9.4717	1.37708	.10921

Distribution of gender V/s mean knowledge scores based on paired sample T-test

Out of the 250 participants, the results indicate that the Mean value was -52747, Standard deviation was 2.36333, Standard Error Mean was .24774, t-statistic was -2.129, degree of freedom was 90, and significance probability (p) was .000. Hence it was

concluded that Gender groups of 16-21 and 22-27 individuals were having different levels of knowledge about Respiratory disease. Both males (≈9.05) and females (≈9.6) had high knowledge but comparatively, Females (≈9.6) individuals had higher knowledge and awareness of Respiratory disease than Males (≈9.05). The overall significance of the study is 0.00, highly significant. The results are tabulated in table 6.

Table 6: Distribution of gender V/s mean knowledge scores based on paired sample T-test

Age group	Paired differences					t	df	Sig. (2-tailed)
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference				
				Lower	Upper			
Males and females	-.52747	2.36333	.24774	-1.01966	-.03528	-2.129	90	.000

DISCUSSION

A total of 250 participants from Pharmacy College were enrolled in the study. All the subjects were in the range of 16-27 y old with which 129 (51.6%) students were from the 16-21 age group and 121 (48.4%) students were from the 22-27 age group from the total subjects. Out of 250 participants, 159 (63.3%) were females and 91 (36.4%) were males. In response to the self-prepared knowledge questionnaire, one sample and paired sample T-test are applied. One sample is used for calculating Age Group V/s Mean Score and Gender V/s Mean Score, while Paired Sample T-Test is used for Comparison of the Mean for Age Group and Gender.

Our study results noticed that the knowledge of most people about respiratory diseases was good, females (mean ≈ 9.6) and males (mean ≈ 9.05). Participants' knowledge of the most serious respiratory diseases was minimal and the common responses include COPD and Allergic Rhinitis. The knowledge of the respiratory diseases was good among the respondents and literacy level was found to be one of the major factors contributing to their knowledge.

In our study, it was found that 89 male subjects (97.8%) and 154 female subjects (96.9%) cared about reducing indoor smoke and dust, which is similar to the study conducted by Vijayan *V et al.*, where an average of 69 to 80% suggest used of filters like free-standing filters and window air conditioners (ACs) to reduce the levels of particulate matters (PM) in a home which contribute to the reduction of PM levels which reduces the risk of respiratory diseases [11].

Our study also discussed that the knowledge of respiratory diseases in female individuals (mean ≈ 9.6) is higher than in males (mean ≈ 9.05) and 22-27 (mean ≈ 9.7) age group individuals have higher knowledge and awareness of Respiratory Diseases than 16-21 (mean ≈ 9.2) age group. The results are comparable to the data from Khan M *et al.*, who found that the mean scores of knowledge and attitude were 9.45±1.69 (based on 13 knowledge questions) and 1.82±0.72 (based on 7 attitude questions) in the healthcare workers in Qassim region of Saudi Arabia have a good knowledge and positive attitude towards Middle East Respiratory Syndrome (MERS) [12]. Similarly, this study can be compared with the work done by Anwar S *et al.*, in which women from urban areas had a significantly higher mean knowledge score (10.87±1.65) compared to residents from rural areas (10.01±1.79) (p<0.01) regarding respiratory-related knowledge [13].

According to Aryal Bhandari A *et al.*, the majority of respondents with 11 to 15 y of working experience had a level of knowledge above average, followed by respondents with 16 to 20 y of experience. This study showed that Females (≈9.6) individuals are having high knowledge and awareness of Respiratory disease than Males (mean ≈ 9.05) and 22 -27 (mean ≈ 9.7) age group individuals are having high knowledge and

awareness of Respiratory disease than 16-21 (mean ≈ 9.2) age group [14]. As shown in our study, the knowledge and attitude toward respiratory diseases among the pharmacy students in the higher age group were better than in, the younger age group. For this reason, we strongly recommend detailed and proper education to be provided to the students to increase their knowledge and attitude.

CONCLUSION

This study revealed that gender groups of 16-21 and 22-27 individuals had different levels of knowledge about respiratory disease. This study showed that females (mean ≈ 9.6) individuals had higher knowledge and awareness of respiratory disease than males (mean ≈ 9.05). It also revealed that the age group of 16-21 and 22-27 individuals had different levels of knowledge about respiratory disease. This study concluded that 22-27 (mean ≈ 9.7) age group individuals had higher knowledge and awareness of Respiratory disease than the 16-21 (mean ≈ 9.2) age group.

LIMITATION OF STUDY

Lack of time. The study included only pharmacy students from SJM College of Pharmacy, Chitradurga; hence the results cannot be generalized to the entire pharmacy population.

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AUTHORS CONTRIBUTIONS

All the authors have contributed equally.

CONFLICT OF INTERESTS

Declared none

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