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## Effectiveness of planned teaching program on pneumococcal vaccine among adults in selected areas of Ahmedabad, Gujarat

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### Abstract

**Introduction:** Pneumonia is considered to be the most common disease spreading among adults & is preventable if having appropriate knowledge. The present study conducted reveals about the effectiveness of planned teaching program about the pneumococcal vaccine among adults to prevent pneumonia in selected areas of Ahmedabad.

**Methods:** This quasi experimental study was conducted on adults with inclusion criteria of age over 50 years, willingness to participate in study. The Investigator adopted simple convenient sampling technique to select the sample. Data was collected using 5 demographic variables & 30 questionnaires regarding pneumonia disease, its prevention, management & vaccine campaign were included. These questionnaires were divided into various areas such as introduction, causes, risk factors, clinical manifestations, diagnostic evaluation, management, prevention & vaccine campaign on pneumonia. A pre-test was conducted on 30 samples after which the planned teaching program was implemented followed by the post test.

**Results:** The mean score of 14.1 of pretest was increased to 22.53 in posttest after providing planned teaching program. The value of paired T test was found to be 15.8 for the study.

**Conclusion:** According to the findings of the present study, it was concluded that the knowledge of the adults regarding effectiveness of pneumococcal vaccine to prevent pneumonia was improved after planned teaching program.

**Keywords:** Pneumonia, pneumococcal vaccine, adults, planned teaching program

### Introduction

Pneumonia is respiratory condition characterized by infection of lung. It can be bacterial, viral, fungal. Fungal pneumonia cannot be spread from person to person. The other two can spread from one person to another. Anybody can be infected with pneumococcal diseases, but young children and elder and adults are at more risk to develop this disease. Pneumonia can be cured but if proper treatment is not taken it can lead to death<sup>[1]</sup>. Pneumonia can be spread from bacteria, virus or fungi & even from fomites. Population who is smoking, consuming alcohol, weak immunity, children, older adults respiratory infections are at high risk of developing pneumonia. This disease can be managed at home, but require hospitalization if the condition worsens. This disease is a preventable disease if measures are taken. PPV23 & PCV13 are the pneumonia preventable vaccines which can be administered to the adults & children<sup>[2]</sup>.

A study shows that community acquired pneumonia (CAP) is the prominent cause of mortality & morbidity among adults across the globe. India counts 23% of global pneumonia burden with case fatality rate between 14-30%. Patients older than 80 had the highest mortality rate of 37.7% in 20 year US study<sup>[3]</sup>. According to a report of Bengaluru, average 11 people die every day due to pneumonia. As per the Central Bureau of Health Intelligence Pneumonia accounts 1.5% cases among all communicable diseases. Pulmonologist Dr Hirennappa Udnur said, "People who are dying of pneumonia are mostly above 65 years of age or less than 1 year." Dr Hirennappa adds that screening is the key to prevent progress of disease. He said that there are a number of causes of pneumonia & almost all of them are curable. Lifestyle changes & change in habits as per season & occupation can help to an extent to cure the disease & prevent it<sup>[4]</sup>.

Knowledge regarding pneumonia & vaccine campaign among adults is most important aspect to prevent the mortality & morbidity cases due to pneumonia. As a large number of

populations die or suffers from the disease it is necessary to provide them sufficient knowledge to prevent the occurrence of disease & to reduce the incident of the same. The present study is conducted to improve the knowledge regarding pneumococcal vaccine among adults in selected areas of Ahmedabad.

### Method

This is a quasi- experimental study [5]. The study population consisted 30 adults of age 50 years or above in selected areas of Ahmedabad in 2020. The adults were selected with the eligibility criteria of age more than 50 years & those who are willing to participate in the study. The purpose of the study was explained to the study samples & E-questionnaire was distributed to them as pretest to assess the knowledge they had regarding the disease [6].

The E-questionnaire consist of 35 questions among which 5 questions were about the demographic data including age, gender, area of residency, educational status, occupational status & 30 structured questions were regarding the disease which was divided into various domains such as introduction of Pneumonia, causes and risk factor of Pneumonia, symptoms and warning signs of Pneumonia, diagnostic evaluation of Pneumonia, treatment of Pneumonia, prevention and health education of Pneumonia, importance of Pneumococcal vaccine, dose and route of Pneumococcal vaccine, side-effects and contraindications of Pneumococcal vaccine. Among the 30 questions each question was given a total score of 1. The total of the scores

of all the samples was made to assess the level of knowledge.

A planned teaching program was implemented using power point presentation method & necessary A.V. Aids depending on the score of pretest to the samples. After 7 days of the planned teaching program the post test was conducted to the same number of samples. The E questionnaire consisting 30 structured multiple choice questions were given to the samples & the score was assessed. The participation of samples were voluntary in the study conducted. After completing the post test the data was analyzed through mean, standard deviation & paired t test [7].

### Results

30 samples were included in the study among which majority of them were male (56.67%) & 50 % of them were in the age group of 50-60 years, 61-70 years & 71-80 years aged samples were 36.67%, 13.33% respectively. 20% samples reside in rural area, 66.67% samples in urban area & 13.33% samples in semi urban area. An educational status shows 6.66% samples are illiterate, 20% samples have primary education, 36.67% samples have secondary education & 36.67% samples are graduate or above having an occupational status of 30% samples are unemployed, 26.67% samples are retired, 26.67% samples had job, & 16.66% samples owe business.

**Table 1:** Shows Description of demographic variables of samples according to age of adults N-30

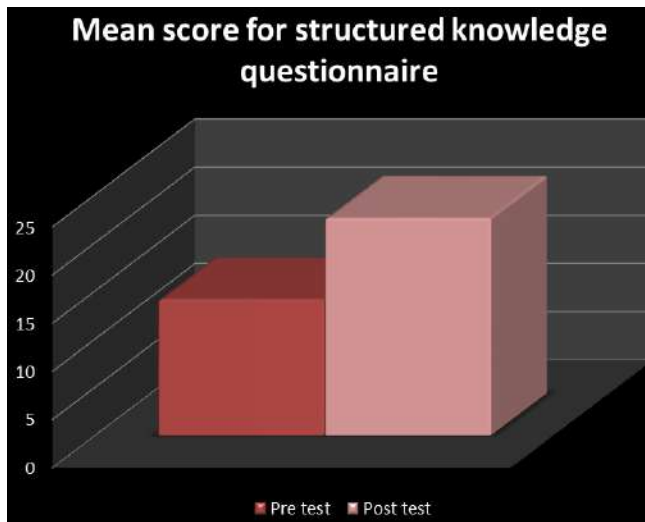
Sr. No.	Demographic Variable	Frequency	Percentage
1	<b>Age</b>		
	50-60 Years	15	50%
	61-70 Years	11	36.67%
	71-80 Years	4	13.33%
	81-90 Years	0	0.0%
2	<b>Gender</b>		
	Male	17	56.67%
	Female	13	43.33%
	Others	0	0.0%
	Don't Want To Say	0	0.0%
3	<b>Residential Area</b>		
	Rural	6	20%
	Urban	20	66.67%
	Semi Urban	4	13.33%
	Other	0	0.0%
4	<b>Educational Status</b>		
	Illiterate	2	6.66%
	Primary	6	20%
	Secondary	11	36.67%
	Graduate Or Above	11	36.67%
5	<b>Occupational Status</b>		
	Unemployed	9	30%
	Retired	8	26.67%
	Job	8	26.67%
	Business	5	16.66%

**Table 2:** Analysis and interpretation of the data collected on structured knowledge questionnaire N- 30

	Mean	Mean In %	T- Test Value
Pre-test	14.1	47%	15.8
Post-test	22.53	75.11%	

The results reveal that the mean, standard deviation, mean

% of pretest was 14.1, 4.011 & 47% respectively after which the planned teaching program was implemented followed by conducting posttest revealing values of mean standard deviation, mean 5 as 22.53, 3.67 & 75.11% respectively [8]. The calculated paired t test value for the present study is 15.8. The following is the graph for mean score of pretest & posttest.



**Graph 1:** Columnar graph showing comparison between mean score of pre-test & post-test.

### Discussion

Pneumonia is the most common communicable disease among the adults. A large number of factors cause pneumonia among which major of them are preventable & almost all of them are curable. As per the findings of the present study a large number of samples are unaware about the pneumococcal vaccine & the disease. The need of planned teaching program was found to be implemented after the pretest. After this the knowledge among the adults were improved regarding the disease & its prevention [9].

The mortality & morbidity rate due to pneumonia is high & hence the present study was conducted to improve the knowledge to prevent the incident rate & reduce the rate of mortality & morbidity due to pneumonia. One study reveals that the pneumococcal vaccine should be introduced in the immunization schedule of the nation to prevent mortality among under 5 due to pneumonia [10]. Another study reveals that the vaccine PPV23 & PCV 13 are found to effective among adults & each year a short of influenza vaccine can prevent the incident of pneumonia [11]. After the age of 50 years, vaccination for pneumonia as per the advice of physician should be taken to prevent pneumonia. Lifestyle modifications including quitting smoking & alcohol consumptions along with proper management of respiratory infections life flu can reduce the occurrence of the disease. Seasonal management & avoiding dust & improving air quality can help reducing the incident of the disease. Diagnosing the disease at early stage can reduce the complications. Periodic screening & complete health check-up helps to assess the disease in its early stage. The disease can be managed at home by taking fever remedies, steam inhalation, fluids & medicines prescribed by the physician. Hospitalization is required if the condition worsens to prevent mortality. Special attention to be given to ventilator patients to reduce the incident of ventilator associated pneumonia along with health care associated pneumonia in hospitals [12]. Vaccine campaigns including administration of pneumococcal vaccine should be made is also explained in our study.

### Conclusion

The study intended to assess the knowledge on Pneumococcal vaccine among the adults of age 50 years or above before and after a planned teaching program. This

will help the respondents to gain knowledge in the area concerned.

The findings reveal that post-test knowledge score was higher than pre-test knowledge regarding Pneumococcal vaccine. Planned teaching program may be given to them. Planned teaching program will serve as a reference material in the college library.

The samples hailing from the concerned areas, who have better education revealed significant association with the increase on knowledge on Pneumococcal vaccine. Therefore adults gain knowledge regarding Pneumococcal vaccine.

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