

THE EFFECTIVENESS OF DUST MASK ON ASTHMA PATIENTS AMONG WOOD WORKERS IN OUR COMMUNITY

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Abstract

Background The World Health Organisation (WHO) estimates that asthma affects more than 339 million people globally and is one of the most prevalent chronic conditions in children. There are around 25 million asthma sufferers in the United States alone. It is claimed that up to 20% of woodworkers have asthma, and wood dust is a well-known respiratory threat in the sector. In areas where woodworking is a common vocation, this number might even be greater. Dust masks may help woodworkers experience less respiratory issues, such as asthma, according to research. The type of mask worn, how frequently it is worn, and other factors can all affect how effective dust masks are. Consequently, it is crucial to carry out research that are particular to the community.

INTRODUCTION

The lungs' airways are affected by the chronic inflammatory condition known as asthma. Variable and recurrent symptoms, reversible airflow blockage, and easily caused bronchospasms are its distinguishing features. Episodes of wheezing, coughing, chest tightness, and shortness of breath are among the symptoms. These could happen several times per day or several times per week. Depending on the individual, asthma symptoms may get worse at night or after physical activity. [1] Why some people have asthma while others do not is a mystery to researchers. However, some elements increase the risk:

Allergies: Asthma development is more likely in people who have allergies. Environmental factors: People who are exposed to things that irritate their airways may develop asthma. Allergens, poisons, gases, and second- or third-hand smoke are some of these things. These can be particularly dangerous for babies and young children whose immune systems are still maturing. Genetics: Your risk of acquiring asthma or an allergy disease is higher if your family has a history of the conditions. Respiratory infections: The developing lungs of young children can be harmed by some respiratory diseases, including the respiratory syncytial virus (RSV). [2] In many societies around the world, woodworking is a well-liked and lucrative activity. However, there are a number of health concerns associated with the sport, especially for people who have asthma. A lot of different materials are used in woodworking.

Although dust masks are frequently used in the woodworking industry, their usefulness in reducing asthma symptoms in woodworkers is still up for debate. According to some research, using a dust mask can considerably reduce the amount of dust and other airborne particles inhaled, which may lower the risk of asthma episodes. However, other research suggest that dust masks may not be completely effective and in some situations may even make symptoms worse. [4]

Therefore, it is imperative to look at how asthma sufferers in woodworking communities are affected by dust masks. We can better educate people and offer suggestions for safe woodworking techniques if we understand the effects of dust masks on asthma patients and woodworkers. In order to benefit the community, this study intends to investigate how well dust masks function in easing asthma symptoms in woodworkers. [5]

METHODOLOGY

The present investigation was carried out with formal approval from the head of the SMCH and after receiving ethical clearance from the Saveetha Institute of Medical and Technical Science's institutional ethical council. For the current investigation, a pre- and post-testing quantitative research design was used. A non-probability convenient sampling approach called quota sampling was used to gather the data from 100 samples. It is possible to verify that the sample is properly chosen and that the study results are accurate and pertinent by using inclusion and exclusion criteria. Additionally, by meeting these requirements, the risk of complications or unfavourable outcomes might be reduced. To make sure that the sample is representative of the population being investigated, it is crucial to carefully take into account these factors when organising a study.

RESULTS AND DISCUSSION

Section A: Description Of The Demographic Variables Of Asthma Patients Using Dust Masks

Table 1: Frequency and percentage distribution of demographic variables of patients using dust masks

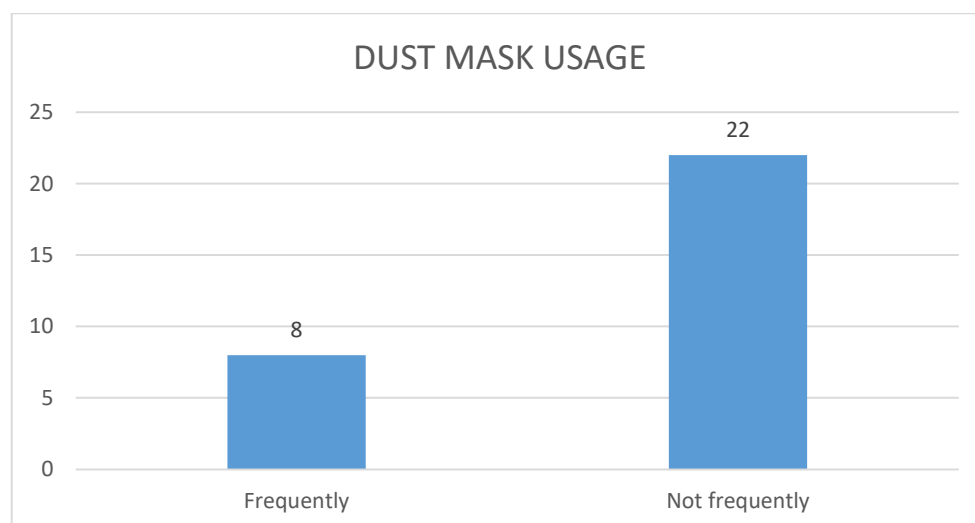
N= 30

Demographic variables	F	%
Age in Years		
18 - 28	9	30.00
29 - 39	13	43.33
40-50	7	23.33
50- 60	1	3.33
Sex		
Male	20	66.67
Female	10	33.33
Others	0	0.00
Education Qualification		
Primary	12	40.00
Secondary	12	40.00
Graduation	6	20.00
Type of Family		
Joint	16	53.33
Nuclear	14	46.67
Dietary Habits		
Vegetarian	9	30.00
Non - vegetarian	12	40.00
Both	9	30.00
Asthma Symptoms		
Common cold	9	30.00
Breathing difficulty	9	30.00

None of the above	12	40.00
Dust Mask Usage		
Frequently	8	26.67
Not frequently	22	73.33
Asthma Attack History		
Frequently	5	16.67
Not frequently	5	16.67
None of the above	20	66.67
Asthma Attack While Working		
Frequently	4	13.33
Not frequently	5	16.67
None of the above	21	70.00
Usage of Inhaler		
Basic	7	23.33
Daily	2	6.67
None of the above	7	23.33
Occasionally	7	23.33
Rarely	3	10.00
Several times a week	4	13.33
Peak Flow Meter Reading		
Green Zone (80-100% peak flow)	5	16.67
Yellow Zone (50-80% peak flow)	13	43.33
Red Zone (below 50% peak flow)	12	40.00
Hospitalization due to Asthma		
None	15	50.00
Occasionally	7	23.33
Rarely	7	23.33
Several times	1	3.33
Dust Mask Comfort Level		
Good	19	63.33
Irritation	11	36.67

Table 2: Representing the demographic variables with chi- square test values showing the usage of dust mask and its effectiveness relation among the demographic variables

Dust Mask Usage	F	%
Frequently	14	46.67
Not frequently	16	53.33



The analysis of dust mask usage among the individuals in the sample indicates that 46.67% of them reported frequently using dust masks, while 53.33% reported not frequently using them. This suggests that a relatively balanced proportion of the sample utilizes dust masks on a frequent basis, indicating a moderate adherence to respiratory protection practices. However, there is still room for improvement in increasing the overall usage of dust masks among the individuals in the study.

Table 3: Representing the demographic variables with chi- square test values showing its effectiveness relation among the demographic variables

Demographic variables	Chi- Square Test Values
Age in years	
18 - 28	$\chi^2=5.758241$, DF=3, DF min=1 , Cramer's V effect=0.438111
29 - 39	
40-50	
50- 60	
Sex	
Male	$\chi^2=2.00956937$, DF=2, DF min=1 , Cramer's V effect=0.258816
Female	
Others	
Education Qualification	
Primary	$\chi^2=7.751196172248804$, DF=2, DF min=1 Cramer's V effect=0.508304
Secondary	
Graduation	
Type of Family	
Joint	$\chi^2=0.53333333$, DF=1, DF min=1 Cramer's V effect=0.133333
Nuclear	
Dietary Habits	
Vegetarian	$\chi^2=1.578947368421052$, DF=2, DF min=1 Cramer's V effect=0.229416.
Non - vegetarian	
Both	
Asthma Symptoms	
Common cold	$\chi^2=1.40151515$,DF=3, DF min=1 Cramer's V effect=0.216142.
Breathing difficulty	
None of the above	
Dust Mask Comfort Level	
Good	$\chi^2=1.141304347826087$,DF=1, DF min=1 Cramer's V effect=0.195047
Irritation	
Asthma Attack History	
Frequently	$\chi^2=0.102516968325791855$,DF=1, DF min=1 Cramer's V effect=0.059456
Not frequently	
None of the above	
Asthma Attack While Working	
Frequently	$\chi^2=0.150000000$,DF=1, DF min=1 Cramer's V effect=0.0707107
Not frequently	
None of the above	
Usage of Inhaler	
Basic	$\chi^2=0.290000000$,DF=2, DF min=1 Cramer's V effect=0.4261107
Daily	
None of the above	
Occasionally	
Rarely	
Several times a week	
Peak Flow Meter Reading	
Green, yellow, red zones	$\chi^2=2.6055194805194803$,DF=3, DF min=1 Cramer's V effect=0.294704

Based on the provided data, we can generate several insights, correlations, and comparisons related to asthma symptoms, dietary habits, dust mask usage, asthma attack history, triggers for asthma, peak flow meter usage, hospitalization due to asthma, and dust mask comfort level. Here are some detailed analyse

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