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Research Article

Prevalence of Pulmonary Disorders in Sanitizer Industrial Workers

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ABSTRACT
Background: This is the research about the lung disease in those industry workers for example sanitizer factory. They are working in harmful environment like they are expose to lot of chemicals Without any safety. Sanitizer production has increased significantly due to the COVID-19 pandemic, which may increase the risk of occupational exposure and adverse health effects among workers.
Aim: The aim of the study is to analyze the pulmonary disorders in sanitizer industrial workers
Methodology: 245 sanitizer factory workers (30- to 60-year-old) working at least one year in sanitizer factory included in this study the pulmonary disorder Questionnaires were distributed to 245 participants. Descriptive data regarding the working related risk factor for pulmonary disorder and health related issues information collected.
Result: Among the 245 workers included in the analyses, male 167 and female 78. There is 64% and more workers are affected by sanitizer industry. Certain symptoms are observed among their workers.
Conclusion: This study is on pulmonary disorders in sanitizer industrial workers. Based on the available evidence, there is a growing concern about the potential link between exposure to certain chemicals used in sanitizer production and an increased risk of developing pulmonary disorders.

Keywords: Pulmonary disorders, sanitizer factory workers, WHO.

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INTRODUCTION

This is the research about the lung disease in those industry workers for example sanitizer factory. They are working in harmful environment like they are expose to lot of chemicals.

WHO recommended alcohol-based hand sanitizers are mainly made up from ethanol, isopropyl alcohols, hydrogen peroxides in different combinations.

When overused, these preparations can become hazardous to both human health and the environment.[1]

At work and at home, people are frequently exposed to cleaning supplies and disinfectants; this is especially true for women. In the health care sector, exposure levels are quite high.[2]

Cleaning and disinfection product use can result in a wide range of exposure situations, some of which are linked to respiratory consequences ranging from acute, transient airway irritation to chronic obstructive pulmonary disease.[2]

The risk of asthma is elevated in professionals who use cleaning agents at work, such as cleaning staff, according to a wealth of research.[3]

One of the primary risk factors for death from chronic respiratory diseases is exposure to occupational pollutants; worldwide, workplace exposures rank third, after tobacco & environmental particulate matter, and second in some countries (Southeast Asia and Latin America).One

significant risk factor for the transmission of respiratory diseases is occupational exposure.[8]

Causes of Hand Sanitizer: While they're generally harmless and effective for hand hygiene, some people may respond negatively to hand sanitizers. The intensity of these reactions could differ and there are a number of possible causes:

1. **Sensitivity to Skin:**
- **Allergic Reactions:** Many hands sanitizer chemical compounds, such as fragrances, preservatives, or alcohols, can trigger allergic contact dermatitis for some people.
- **Irritant Contact Dermatitis:** Hand sanitizer use on frequently or prolonged exposure to it can cause skin irritation, especially for people with sensitive skin.

2. **Factors Related to Ingredients:• Ethanol:** Although ethanol is typically well accepted, some people may get dry or irritated skin.
- **Isopropanol:** Compared to ethanol, this alcohol may irritate the skin more**.**
- **Emollients:** Hand sanitizers that contain moisturizing ingredients may occasionally irritate skin or trigger allergic responses.
- **Fragrances:** A lot cheap hand sanitizers include scents in them that may aggravate sensitive skin or cause allergies.
3. **Overuse:** Using hand sanitizers excessively can deplete the skin of its natural oils, causing dryness, irritation, and cracking.
4. **Skin Conditions Underlying:** People who already have skin diseases such as psoriasis or eczema may be more prone to responses from hand sanitizers.
5. **Individual Variation:** Each person has various levels of skin sensitivity and tolerance to substances.[1]

This study includes the Age group 35-60 Both male and female subject will include from the sanitizer factory.
There is the Exposure to sanitizers or their ingredients for at least 6 months in the past or present worker.
There is limited data on the prevalence and types of pulmonary disorders among sanitizer industrial workers.
There is lack of knowledge in sanitizer workers so
there is there is need to find out the prevalence of pulmonary disorders in sanitizer industrial workers.
Spray cleaning and disinfection products generally contain complex mixtures of chemicals, including volatile organic compounds (VOCs) mainly used as solvents and fragrances, preservatives, disinfectants, and tensides [4]
Disinfectants used in health care settings contain a large variety of active ingredients, such as formaldehyde, hypochlorite, hydrogen peroxide, glutaraldehyde, all of which are capable of causing injury to the airway epithelium and oxidative stress and may be associated with neutrophilic inflammation. [5,6]
Several studies have investigated the relationship between adverse health effects, cleaning activity, and cleaning products.[7]

MATERIAL AND METHODOLOGY:
OBJECTIVES:
1. To survey and check the pulmonary disorder in industrial workers.
2. To identify the risk factors and exposure levels associated with pulmonary disorders among sanitizer industrial workers.

INCLUSION CRITERIA-: -
1. Age group – 35-60
2. Both male and female subject will include
3. Exposure to sanitizers or their ingredients for at least 6 months in the past or present

EXCLUSION CRITERIA: -
1. Subject with previous history of pulmonary infection.
2. Smoking history, either current or past

STUDY DESIGN: - Observational study
STUDY POPULATION: 245 sanitizer factory workers from rethare factory in karad were studied both male and female sanitizer factory workers included in this study and having an experience at least one year of work at factory below 30 year and above 60-year workers were excluded in this study

PROCEDURE: -
1. This will be a study of prevalence of pulmonary disorders in sanitizer industrial workers.
2. The study will be conducted in karad.
3. Certification will be taken from protocol committee. Then permission will be taken from authorities and ethical committee.
4. Patients will be selected according to inclusion and exclusion criteria.
5. Informed consent will be taken and data will be collected.
6. A structured questionnaire will be circulated among the patients for data collection.
7. Based on collected data the statistical analysis will be done.

STATASTICAL ANALYSIS AND INTERPRETATION

- **GENDER ANALYSIS CHART**

GENDER	NO. OF GENDER	PERCENTAGE
MALE	167	68%
FEMALE	78	32%

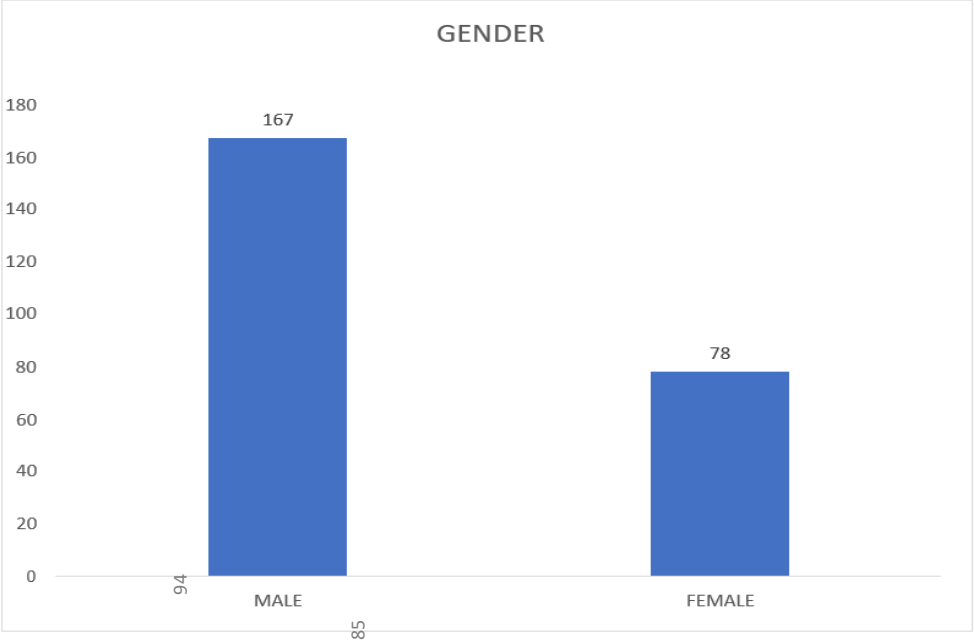

Figure 1

INTERPRITATION: Out of 245 there are 78 female and 167male patients taken in the study.

- **AGE ANALYSIS CHART**

AGE GROUP	AGE 30-35	AGE 36-40	AGE 41-45	AGE 46-50	AGE 51-55	AGE 56-60
NO. OF PARTICIPIENT	33	94	85	28	3	2

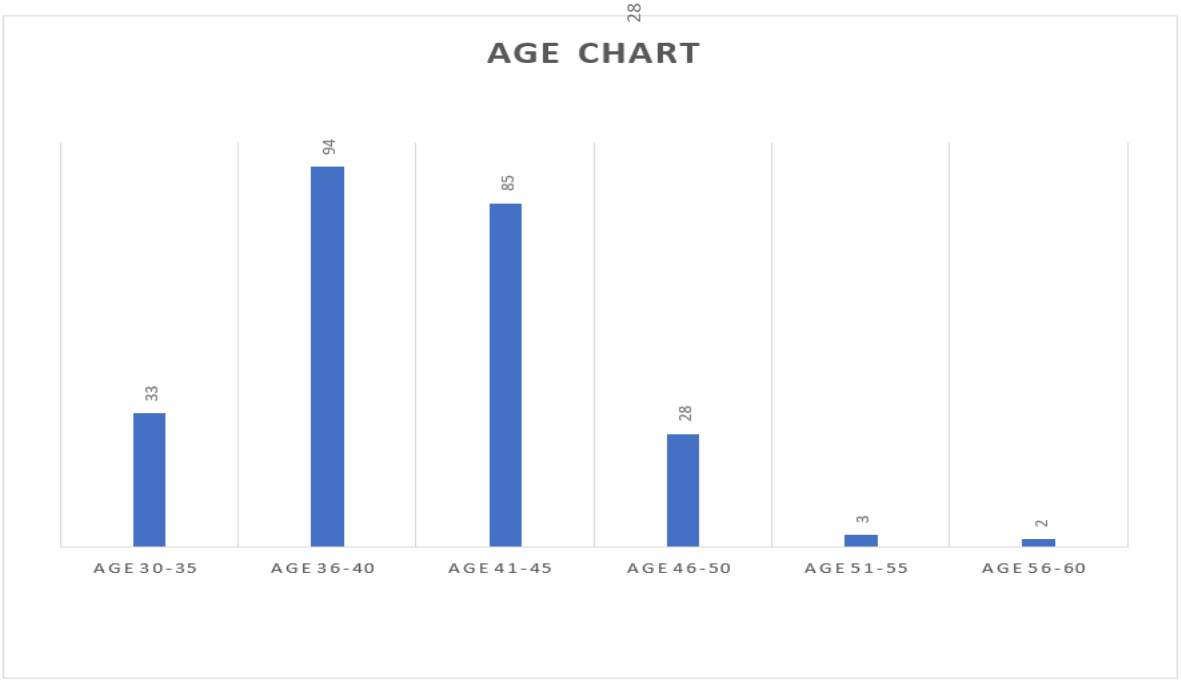

Figure 2

INTERPRITATION: This chart represents demographic data of collected samples of sanitizer industrial workers. 245 participants are giving their ages.

- **WORKERS WITH BREATHING PROBLEM =**

YES	NO
152	93

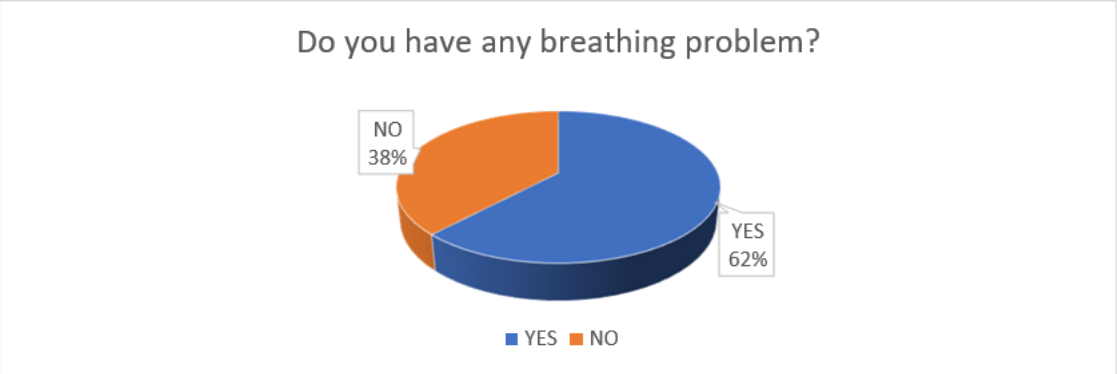

Figure 3

INTERPRITATION– This data showed in pie diagram was about sanitizer industrial worker who have been facing with breathing problem. There are 62% (152) workers facing breathing problem.

- **SANITIZER INDUSTRIAL WORKER WHO HAS BEEN EXPOSED TO ANY CHEMICALS OR SUBSTANCES AT YOUR WORKPLACE.**

YES	NO
156	89

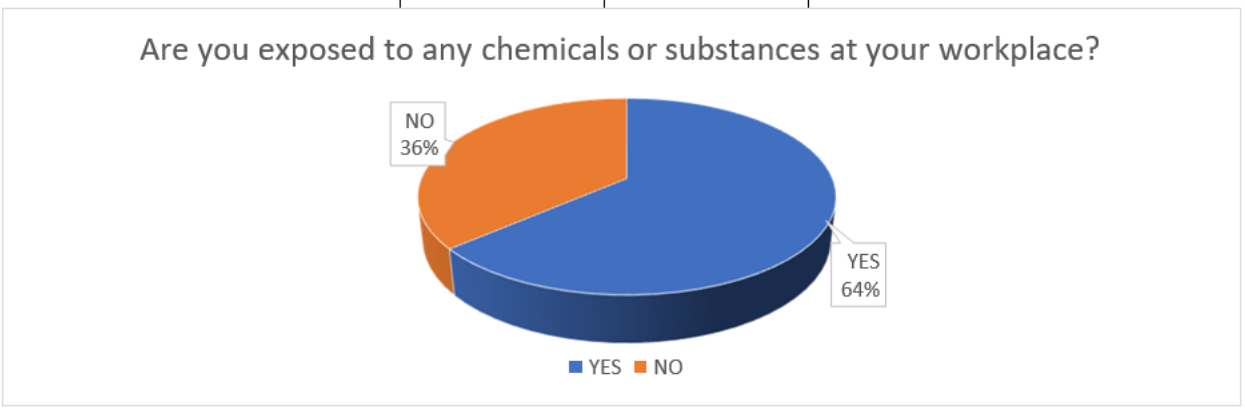

Figure 4

INTERPRITATION – This data showed in pie diagram was about sanitizer industrial worker who have been exposed to any chemicals or substances at your workplace. There are 64% (156) workers and doesn't expose to any chemicals or substances at your workplace is 36% (89).

RESULT:

The study included 245 sanitizer industrial workers. (78 females and 167 males). There are more than 70% of workers are affected to the sanitizer. In this study that was the on pulmonary disorder in sanitizer industrial workers. According to this study, lungs are additionally affected by industrial chemicals used in disinfecting. sanitizer industrial worker who has been facing with breathing problem. There are 62% (152) workers facing breathing problems out of 245. sanitizer industrial worker who have been exposed to any chemicals or substances at your workplace.

There are 64% (156) workers and doesn't expose to any chemicals or substances at your workplace is 36% (89).

DISCUSSION-

Prevalence of pulmonary disorders in sanitizer industrial workers in this study. Discuss the potential risk factor and contributing factor identified in the study that may explain the Prevalence of pulmonary disorders in sanitizer industrial workers.

Discuss the implication of the study findings for occupational health and safety in sugar factories identify strategies to reduce the Prevalence of pulmonary disorders in sanitizer industrial workers such as ergonomics modification

Specific Chemicals: List the usual ingredients included in hand sanitizers, particularly those that are known to cause respiratory hazards. Fragrances and alcohol, particularly methanol, are examples.

Health Effects: Discuss about how breathing in these pollutants could affect your health. Asthma attacks, inflammation, and even chronic obstructive pulmonary disease (COPD) may fall under this category.

Available Research: there is the no any current state of research on this topic. Are there any existing studies that explore the link between sanitizer production and pulmonary disorders? If so, summarize the findings. Emphasize the need for more research in this area.

Preventive Measures: Discuss about the precautions that sanitizer manufacturers may use to maintain workers safety. This might involve using masks and other personal protective equipment (PPE), installing proper ventilation systems, and routinely checking the health of exposed workers.

There is the working in the sanitizer industry there are the more then 2-year experience 109 (44%) and less than 2-year experience 136 (56%).

The number of sanitizer industrial workers who have more than 6 hours of experience was 98 (40%), while those who have less than 6 hours of experience were 147 (60%).

There are 62% (152) workers in the Sanitizer industrial sector who are experiencing breathing problems.

I have noticed an increase in respiratory issues (like coughing and shortness of breath) since starting work in this industry, with 65% (159) of respiratory issues being noticed and 35%

(86) not being used.

CONCLUSION-

While keeping things clean is important, there's a chance working with sanitizer ingredients could raise your risk of lung problems down the line. We're not totally sure yet, but some of the chemicals used, like strong alcohols and certain disinfectants, might irritate lungs if breathed in too much.

Sanitizer companies should definitely take steps to protect their workers. This means good air circulation in factories, giving workers proper masks to wear, and keeping an eye on their health. More research is needed too, to fully understand the connection.

Concern over a possible connection between exposure to specific chemicals used in the manufacture of hand sanitizer and a higher risk of developing respiratory illnesses is emerging in light of the research that is currently available. The information that is now available indicates that sanitizer workers may be more vulnerable than the general public, even though further investigation is required to prove a clear causal link.

Specified Chemicals: Alcohols and quaternary ammonium compounds, two substances frequently utilized in the manufacture of hand sanitizers, have been found to have the potential to irritate the respiratory system.

Increased Risk: Research has linked the incidence of lung illnesses, including as asthma, bronchitis, and other respiratory ailments, among sanitizer workers to exposure to these chemicals.

Research Needed Further: Even while the data that is now available is alarming, larger, longer-term research are required to conclusively determine the connection between sanitizer exposure and lung diseases.

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