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PROFESSIONAL RISKS INDUCED RESPIRATORY PROBLEMS ENCOUNTERED BY THE WORKERS OF SELECTED CEREAL BASED FLOUR MILLS IN DINDIGUL AND PUDUKKOTTAI DISTRICT

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Abstract:

A hazard encountered at work is referred to as an occupational hazard. Chemical, biological, psychological, and physical risks are only a few of the various kinds of hazards that fall under this category. To put it another way, occupational hazards account for the likelihood of accidents or illnesses occurring at work. Cereal- based flour units include the machinery, where the various types of grains are converted to flours and that are operated by the persons who have to work amongst the dust that spreads during the hoping of cereals, collection of flours in bags and in packing section. A lot of respiratory hazards and hearing issues due to the heavy noise created by the machinery. In these units, heavy noise created by the machinery makes hearing impairment among the workers and slips and falls in the working area. Samples from the selected flour mills are taken by random sampling method and checked for their clinical symptoms, respiratory illnesses, musculoskeletal problems. Around 21percent of them suffered from some forms of allergies, itching and dry skin, 68 percent of them have respiratory related problems like cough, 8 percent of them have breathing trouble, 23 percent of them have irritation in throat. Many of them are uneducated and they are unaware of the importance of safety measures to be followed in the industry premises. This study revealed the importance of educating and implementing safety measures among the workers.

Index words: **occupational hazard, respiratory issues, bronchitis, breathing trouble**

I.INTRODUCTION:

The food industry consists of an intricate system of process involves in sourcing, disturbing, consuming food products and services. The food industry is a critical sector globally, significantly influencing public health, nutritional standards, food safety, food security and social development. Occupational health safety is largely measured by negative outcomes such as workplace injury and illness. Numerous studies advert that illness and health response are really more complex than simple reactions to flour dust itself, in addition to flour, enzymes, and allergens (Powis,R.K.*et.al*., 2024). The flour dust is a hazardous substance with respiratory sensitizing properties and may provoke asthma in individuals with pre-existing disease and also cause bronchitis. Crivallero et.al., 2020, have done a thorough examination of the upper and lower respiratory tracts was conducted. 22% of bakers reported having upper respiratory problems, compared to 7%

who had lower respiratory symptoms. Of the bakers, 37.1% had sensitivity to occupational allergens, and 55% had allergies.

The current study has been taken up with the following objectives.

1. To identify the flour mills in Pudukkottai and Dindigul Districts.
2. To do a random survey to identify the occupational hazards with a structured questionnaire.
3. To analyze the professional-induced respiratory problems encountered by the workers of flour mills based on statistical interpretations.

II.METHODOLOGY:

2.1 Statement of the problem:

A significant concern exists regarding the elevated risk of developing respiratory problems, including asthma, bronchitis among cereal flour mill workers due to prolonged exposure to high levels of airborne flour dust, highlighting the need for the current study

2.2 Selection of the respondents:

In the current study, the workers from Cereal- based flour mills in the age group of 20-60 were chosen using a simple random sampling method. 60 samples were selected from various flour mills from Dindigul and Pudukkottai districts.

2.3 Research Design:

A simple random sampling technique was used to find out the current study on the professional risks induced respiratory problems encountered by the workers of selected mills in Dindigul and Pudukkottai districts.

2.4Tools and methos used for the data collection:

A structured questionnaire was developed and face to face interview was done to collect the details from the respondents. The questionnaire includes the details about personal criteria, job nature, physical condition, life style parameters, medical care services, other benefits. The offline survey was conducted by personal interview and explained the contents before filling the questionnaire.

2.5. Data analysis and Interpretation:

Data collected through direct interviews with the structured questionnaire. The collected data were coded, tabulated and analyzed with suitable Standard Packages for Social Sciences (SPSS).

1. Sampling method: Simple Random sampling
2. Sampling units: : cereal based flour mills
3. Sample size : 60

III.RESULTS AND DISCUSSION:

The study on **'Professional risks induced respiratory problems encountered by the workers of selected Cereal based flour Mills in Dindigul and Pudukkottai District'** was done and the results are discussed below:

Table 1

3.1Age of the respondents:

S.No	Age	Frequency (N=60)	Percent
1	20-30	12	20.0
2	31-40	21	35.0
3	41-50	5	10.0
4	51-60	21	35.0

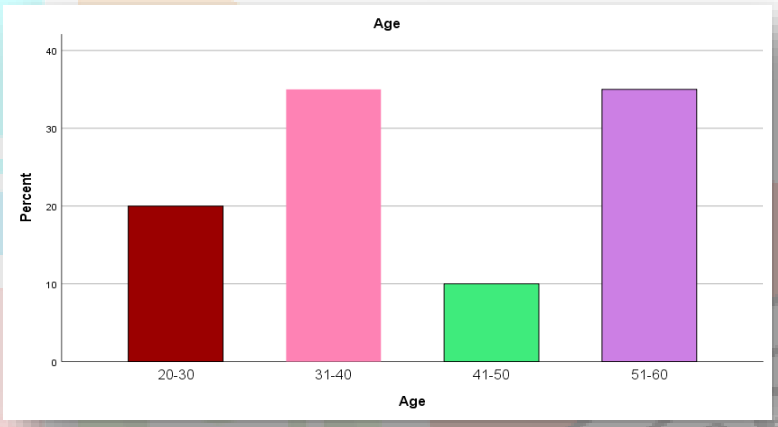

Figure 1

The table displays the distribution of workers across different age groups, with four age categories: 20-30, 31-40, 41-50, and 51-60. The highest percentages, 35.0%, are observed in both the 31-40 and 51-60 age groups, while the lowest percentage, 10.0%, is in the 41-50 age group.

Table 2

3.2 Gender Of The Workers

S.No	Gender	Frequency (N=60)	Percent
1	Male	26	43.2
2	Female	34	56.7
	TOTAL	60	100.0

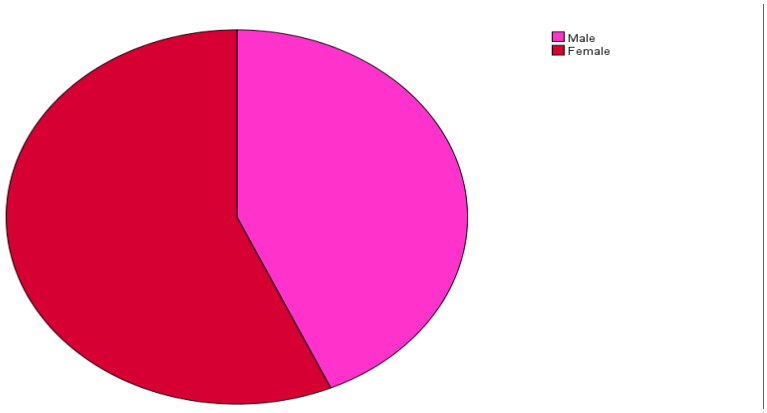

Figure 2

The table presents a distribution of workers based on gender, showing both frequency and percentage values. The data indicates that out of a total of 60 workers, 26 are male, which accounts for 43.2% of the workforce, while 34 are female, representing 56.7% of the total.

II.Clinical Symptoms:

Table 3

3.3 General Health Issues

S.No	Health Issue	Frequency (N=60)	Percent
1	Yes	26	43.3
2	No	34	56.7
	Total	60	100.0

The table presents data on the prevalence of general health issues among a sample population. The table shows that 26 individuals (43.3%) reported experiencing a general health issue, while 34 individuals (56.7%) reported no health issues.

III. Personal Habits:

Table 4

3.4 Smoking And Alcohol Consumption

S.No	Smoking	Frequency (N=60)	Percent	Alcohol Consumption	Percent
1	Regularly	3	5.0	4	6.7
2	Moderately	7	11.7	10	16.7
3	No	50	83.3	46	76.7

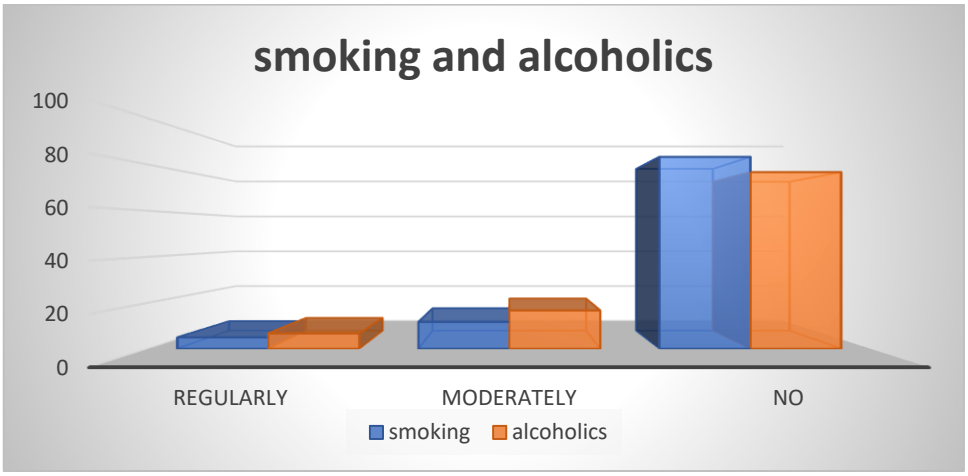

Figure 4

The frequency distribution shows that only 3 individuals (5.0%) smoke regularly, while 7 individuals (11.7%) smoke moderately. The majority, 50 individuals (83.3%), do not smoke. This indicates that a significant proportion of the sample population abstains from smoking, with a smaller percentage engaging in smoking either regularly or moderately. Further, the data reveals that 4 individuals (6.7%) drink alcohol regularly, while 10 individuals (16.7%) consume it moderately. The majority, comprising 46 respondents (76.7%), reported that they do not drink alcohol.

Table 5

3.5 Problem Due To Dust

S.No	Problem Due To Dust	Frequency (N=60)	Percent
1	Yes	4.9	81.7
2	No	11	18.3
3	Total	60	100.0

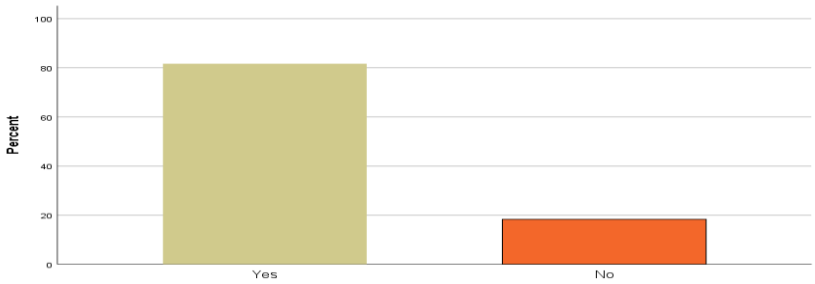

Figure 5

The table presents data on problems caused by dust in the workplace. Out of 60 respondents, 49 (81.7%) reported experiencing issues due to dust, while 11 (18.3%) stated that they do not face any problems related to dust. These findings indicate that a significant majority of employees are affected by dust, which could lead to health issues such as allergies, respiratory problems, and reduced workplace comfort.

Table 6

3.6 Any Difficulty Faced In Industry

S.No	Any Difficulty Faced In Industry	Frequency (N=60)	Percent
1	Yes	16	26.7
2	No	44	38.9
	Total	60	100.0

The table presents data on the difficulties faced by employees in the industry. Out of 60 respondents, 16 (26.7%) reported experiencing difficulties, while 44 (73.3%) stated that they did not face any challenges. These findings suggest that while the majority of employees do not encounter significant difficulties, a notable portion still faces challenges in the industry.

Table 7

3.7 Breathing Trouble

S.No	Breathing Trouble	Frequency (N=60)	Precent
1	Cough	41	68.3
2	Shortness Of Breath	5	8.3
3	Frequent Throat Irritation	14	23.3

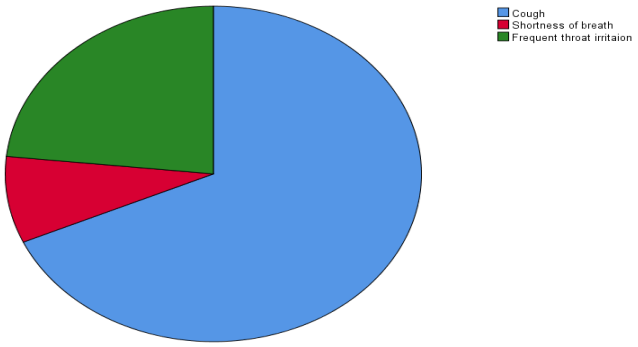

Figure 6

The table presents data on breathing troubles experienced by employees. Among the 60 respondents, the majority (68.3%) reported experiencing cough-related issues, while 23.3% suffered from frequent throat irritation, and 8.3% experienced shortness of breath. These findings indicate that a significant number of employees face respiratory issues, which could be linked to workplace conditions such as poor air quality, dust exposure, or inadequate ventilation. Implementing proper dust control measures, ensuring adequate ventilation, and providing respiratory protective equipment can help reduce these health concerns and improve overall employee well-being.

Table 8

3.8 Allergy Symptoms

S.No	Allergy Symptoms	Frequency (N=60)	Percent
1	Yes	18	30
2	No	42	70
	Total	60	100.0

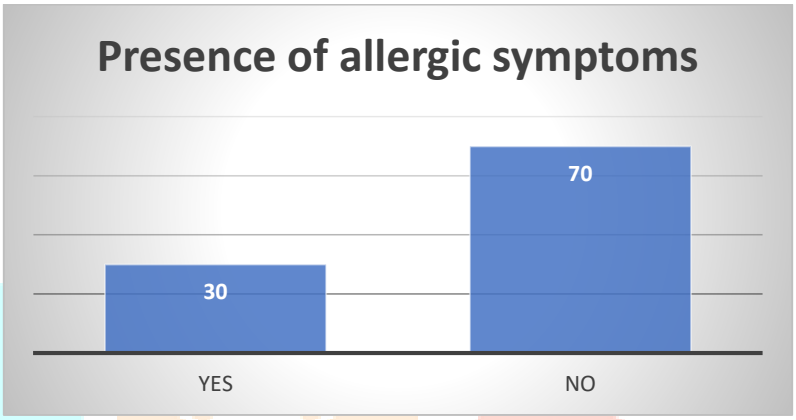

Figure 7

The table presents data on the prevalence of allergy symptoms among employees. Out of 60 respondents, only 8 individuals (13.3%) reported experiencing allergy symptoms, while the vast majority, 52 respondents (86.7%), did not suffer from any allergies. This suggests that workplace allergens may not be a significant issue for most employees. However, for those affected, potential allergens such as dust, chemicals, or airborne particles should be identified and controlled to ensure a healthier work environment.

Table 9

3.9Lung Infections

S.No	Lung Infections	Frequency (N=60)	Percent
1	Yes	11	18.3
2	No	49	81.7
	Total	60	100.0

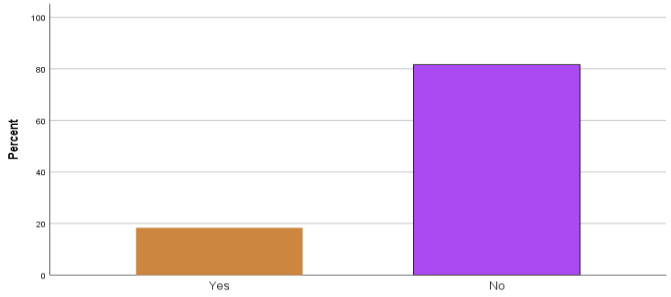

Figure 8

The table presents data on the occurrence of lung infections among employees. Out of 60 respondents, 11 individuals (18.3%) reported experiencing lung infections, while the majority, 49 respondents (81.7%), did not. Although the percentage of affected employees is relatively low, it highlights a potential health concern in the workplace.

Table 10

3.10 Skin Infections

S.No	Skin Infections	Frequency (N=60)	Percent
1	Itching	34	56.7
2	Rash	18	30.0
3	Dryness Or Cracking	8	13.3
	Total	60	100.0

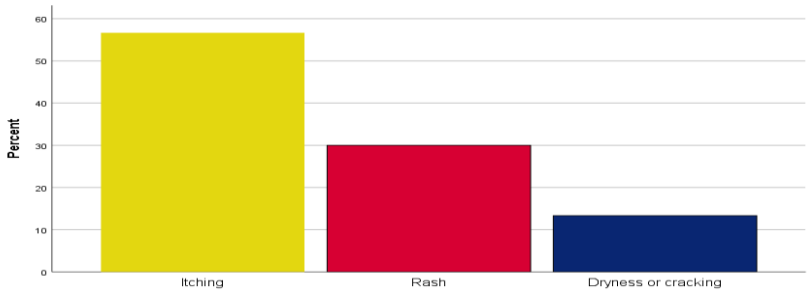

Figure 9

The table presents data on the prevalence of skin infections among employees. Out of 60 respondents, the most common issue reported was itching, affecting 34 individuals (56.7%). This was followed by rashes, which were experienced by 18 respondents (30.0%), while dryness or cracking of the skin was reported by 8 individuals (13.3%).

IV. Conclusion:

The current study clearly explains that there, a lot of work- related occupational hazards found in industrial atmosphere. Many workers who work in cereal-based mills face professional risks- induced respiratory problems like lung infections, cough, throat infections, and skin allergies. The industry should implement basic first aid kits, to teach the workers about the use of PPE to mitigate the risk factors. The use of spirometry should be made mandatory in all flour mills to check the lung functions and the rate of allergies created by the allergens and small fine fragments blown during milling process. Addressing the difficulties through better workplace policies, employee support programs, and process improvements can enhance overall job satisfaction and productivity.

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