



## **An Insight Study of Workers and Locals About the Safety Measures at Rice Mills in Pakistan**

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### **ABSTRACT.**

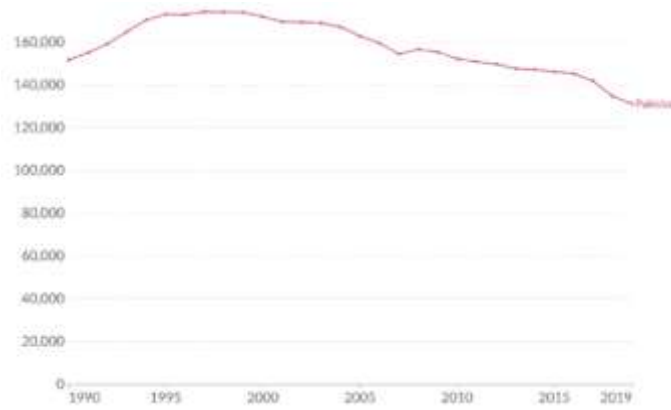
Every place possesses hazards. Everybody in this world has the right to live freely and safely. The rice sector in Pakistan is extremely important in terms of export earnings, domestic employment, rural development, and poverty reduction. Rice is an important food as well as a cash crop in Pakistan. It accounts for 3.0 percent of the value added in agriculture and 0.6 percent of GDP [1]. Every Sector in Pakistan has potential hazards. Every year thousands of workers lose life due to the lack of safety measures in mills. However, the local Governments Nevers surveyed mills for appropriate implementations of safety measures in mills. Rice Mills is the backbone of Pakistan's economy. We are aiming to highlight the potential Hazards at mills by visiting the mills several times we have also done several surveys to Locals and to highlight how far a worker knows safety measures in case of fire, etc. Methods and Methodology for this study include primary data. Primary data includes Formal Interviews conducted with locals and workers (the reason for this interview in a formal way is that workers and locals can feel easy to give the answers). and Secondary data includes the survey of mills to indicate the potential hazards and how the administration is working to control them.

**Keywords:** Rice mills, OHS, Safety, workplace safety

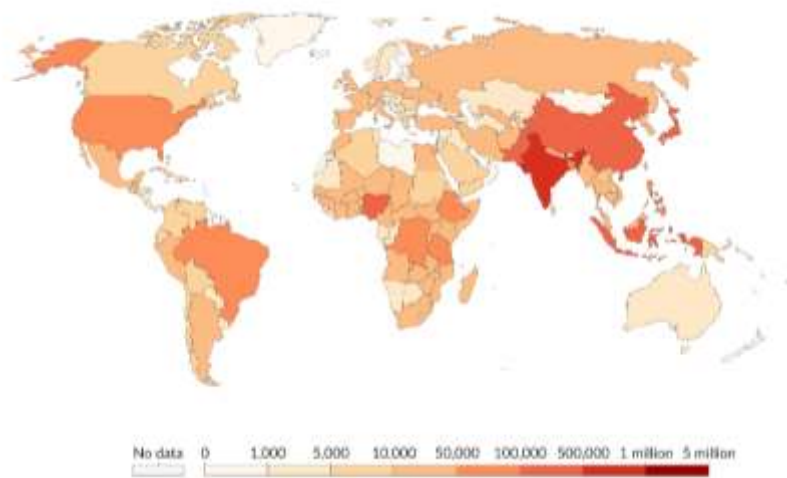
### **1. Introduction:**

Local Governments have done surveys regarding the production of rice in Pakistan, but they are not paying attention to the safety of workers working in these mills. They have data on rice production and mills but there is no data regarding the issues that a worker faces while working at mills these issues can result in severe hazards and leads to heavy injuries and deaths. There is not a proper way to report hazards in a workplace. This study deals with the potential hazards at mills and conversations with the workers and locals regarding the issues they are facing and aims to highlight them and suggest possible solutions to them and the administrations.

A rice grain is made up of an external husk layer, a bran layer, and the endosperm. The husk layer (Lemma and Palea) accounts for 20 % of the weight of paddy. The husk layer is removed from the paddy by friction and the process is called de-husking or de-hulling. De-husking was traditionally done using mortar and pestles but, in modern rice mills, it is done by passing the paddy grains between two abrasive surfaces that move at different speeds. After separating the husk from the paddy, the husk is removed by suction (aspirated) and then transported to a storage dump outside the milling plant [2]. A study found that workers in the agricultural industry are highly exposed to harmful factors in their work environment, such as dust, unfavorable microclimatic conditions, excessive noise, and insufficient light. In addition, there are numerous safety and health hazards associated with grain handling operations, among them suffocation and falls are the two leading causes of death. Other hazards include fires, explosions, electrocutions, and injuries from improperly guarded machines [3]. Occupational respiratory disease can be defined as an acute or chronic disorder that arises from the inhalation of airborne agents in the workplace. Subjects with workplace exposure to organic dust have a high prevalence of respiratory diseases [4].



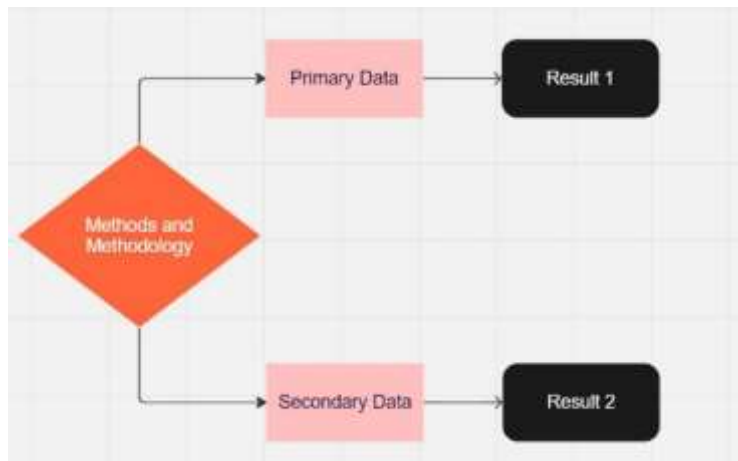
**Fig.1.** Deaths from respiratory infections, 1990 to 2019 (Pakistan), [Data source: IHME, Global Burden of Disease (2019)]



**Fig.2.** Number of deaths from respiratory infections, including tuberculosis (Pakistan in Millions of deaths), [Data source: IHME, Global Burden of Disease (2019)].

## 2. Methods and Methodology

Methods and Methodology for this study include primary and secondary data. Primary data includes Formal Interviews conducted with locals and workers (the reason for this interview a formal way is that workers and locals can feel easy to give the answers) and Secondary data includes the survey of mills to indicate the potential hazards and how the administration is working to control them.



**Fig 3.** Flow chart for method and methodology

### 3. Objective:

The objective of this study is:

- To evaluate the level of safety at the workplace
- To highlight the problem faced by workers
- To Interview workers and locals
- To Provide possible solutions

### 4. Workplaces:

To understand the gap in OHS in the below workplaces 5-6 times we have done surveys:

- Rana Rice mill
- Enam Rice Mill
- Tufail Rice mill

All were located in Narowal, Punjab Pakistan. We are focused on the Rana rice mill because it was under operation 24/7 even in winter however in winter Govt. of Pakistan shut down plants due to a reduction in smog.



Fig.3. Rice Production (Pakistan), [Data source: IHME, Global Burden of Disease (2019)]

Table 1. Production capacity in visited mills

Name of Mills	Production Capacity/hour
Rana Rice Mill	12M
Tufail Rice Mill	7-8M
Enam Rice Mill	4M

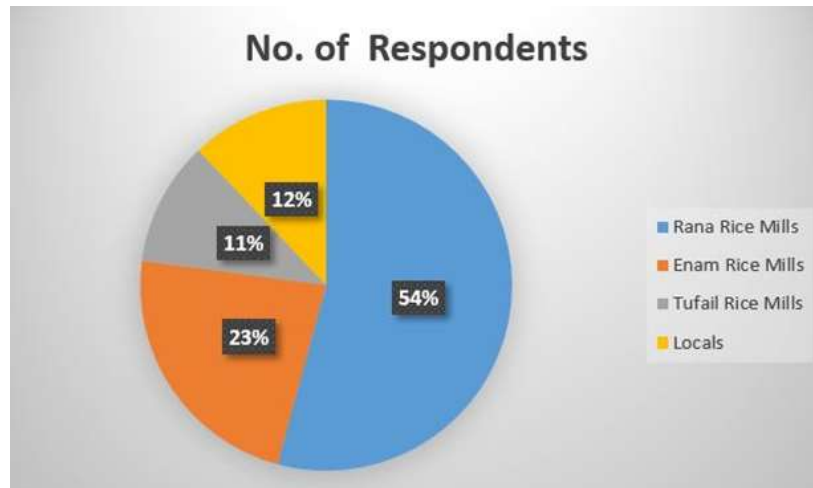
### 5. Results:

#### 5.1. Primary and secondary data:

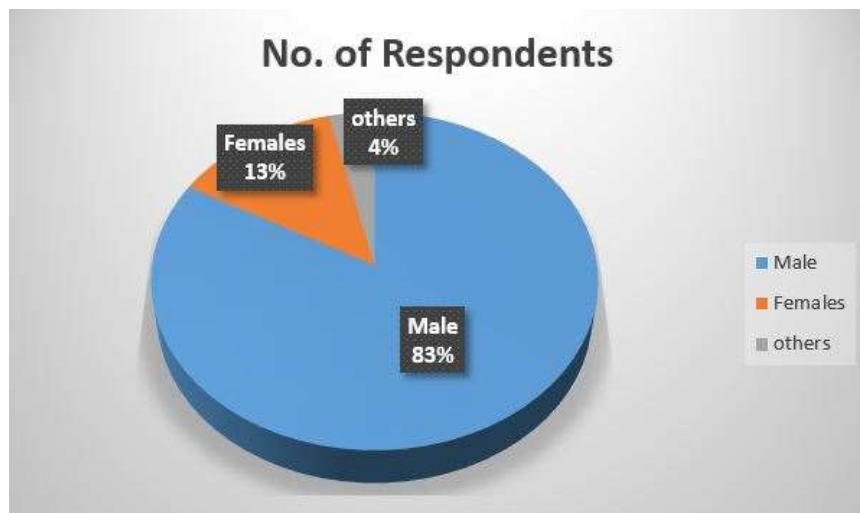
This Data Includes the Formal Interviews, The results are below. There are a total of 83 respondents. We have visited more than 2 mills so, Rana Rice Mills has the highest Respondents nearly 54%. While Enam Rice Mills has the second highest number of respondents for this study nearly 23% and vice versa. There are a total of 83 respondents. Males have the highest Respondents nearly 83%. Females have the second highest number of respondents for this study nearly 13% and vice versa.

**Table 2.**Numbers of Respondents in visited mills

Rice Mill names	No. of Respondents
Rana Rice Mills	45
Enam Rice Mills	19
Tufail Rice Mills	9
Locals	10

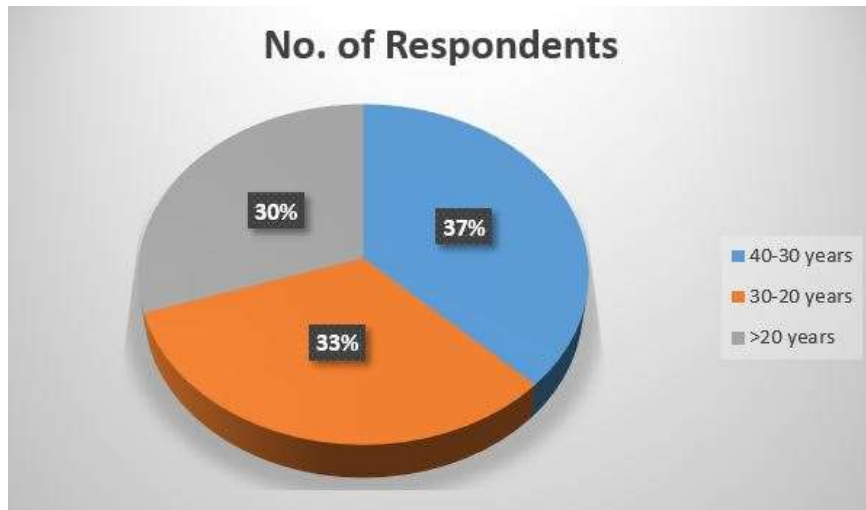
**Fig.4.** Total numbers of respondents in percentages**Table 2.** Genders of Respondents in visited mills

Genders	No. of Respondents
Male	69
Females	11
others	3

**Fig.5.** Genders of respondents in percentages

**Table 4.** Ages of Respondents in visited mills

Ages	No. of Respondents
40-30 years	31
30-20 years	27
>20 years	25

**Fig.6.** Ages of respondents in percentages**Table 5.** Available of Safety Measures Used against Assessment of OHS

Face Mask	55	28
Face Mask	55	28
Hand Gloves	49	34
Apron	9	74
Safety Caps	71	12
Goggles	20	63
Safety Shoes	14	69
First Aid kit	79	4
Fire Extinguish	21	62

**Table 6.** Checklist Questions

CHECKLIST QUESTION	YES	NO
Have you ever used a Fire extinguisher	50	33
Have you known Emergency Exit?	60	23
Do you know the Emergency Contact number?	41	42
Have You Know About OHS	12	61
Have you Got training?	11	62
Have you felt uncomfortable during Duty?	56	
Are You familiar with OSHA standards?	6	77
Do you know how to work on heights?	8	75
Have You done any Diplomas or courses in HSE?	11	72
Are employees aware of what types of accidents to report?	4	79
Do you know how to Report an accident?	35	48
Do you know how to give a patient Primary Treatment?	10	73
Are Accident Report Form is available?	2	81
Is the health and safety poster prominently displayed?	44	39
Are "NO SMOKING" areas enforced?	21	62
Do employees have proper ID badges?	12	71
Ceiling tiles are not damaged, loose, or missing?	2	81
Are pipes, pumps, hoses, and valves free of leaks or defects?	23	60

Are hazardous waste containers properly identified and labeled with the words, "HAZARDOUS WASTE?"	76	7
Are trash cans free of hazardous waste?	77	6
Are trash cans free of scrap metal?	80	3
Are extension cords used only for temporary wiring applications (60 days max.)?	10	73
Are all fixed machines bolted to the floor?	82	1
Are heat lamps and work light bulbs guarded?	76	7
Are fans inspected annually for damage (cracked blades, guards, cords, etc.)?	3	80
Are all ladders in good condition with no structural damage?	55	28
Are rubber feet on ladders in good repair?	6	77
Are fixed stairs being used (instead of ladders) where regular travel is needed?	80	3
Are areas marked as a "HEARING CONSERVATION" area, as needed?	54	29
Are respirators clean and stored properly?	65	18

## 6. Locals Opinions:

"It was like something solid entering in nostrils. We feel uncomfortable during the mill season" said Shafaqat Saleem (Resident)

"A lot of people have developed asthma," said Khatun Zoora (Resident)

"Most of us sleep on our rooftops because of the heat but the dust doesn't let us sleep as we have trouble breathing," said resident Abdul Karim.

"A large quantity of dust is generated into the environment of grain processing industries when agricultural commodities are converted into an edible form for human consumption, thus causing a potential health risk to workers due to inhalation of vegetable dust," explains the study

"Every year hundreded of people died due to improper loading in tractors" Khatun Zoora added

"The Sound of Machine disturbs our daily life which is coming out from the mill during the padding process," a child said.

"We feel like there is a lack of oxygen around us sometimes" he added.

## 7. Discussion:

We have done this study for 2-3 weeks, and we have seen some kind of lack in administration control as well as Engineering control. They are not allowed (workers) to give their opinions which leads to an uncertain situation. No training has been given to them. They don't know what to do in fire situations. They don't know the proper emergency exit gates. Although fire alarms are working their maintenance should be done. Ladders should be repaired. The rice grain test should be conducted properly by using Lab safety equipment. Loading both on the machine or worker should be done according to the instructions given by OSHA, IOSH, or IIRSM. If it not be done it will lead to Property damage or injury of the spinal cord of the worker which can lead to permanent injury or death. First aid Training should be given to workers so they can be able to give temporary treatment to patients until they are taken to hospitals. Chlorine levels in water should be checked. A break should be given to them so they can feel free. Govt. of Pakistan has to play a vital role. We have given the solution to the administration as we can, now they have to play their role as well.

## 8. Recommendations:

This study's results are greatly beneficial for External or internal Audit to find out what are the difficulties the workers are facing. Worker should give complete training. There should be a proper way to report accident. A Dispensary should be made near workplace to avoid serious accident. Emergency route should be clean. Hazardeous material shouls be labelled.

## 9. Acknowledgement:

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## 11. Conflict of Interest Statement:

All authors declare that they have no conflicts of interest

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**Some Clicks during Survey and Research:**

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