

A STUDY ON OCCUPATIONAL HEALTH AND SAFETY PRACTICES AT KAUSHIKH THERAPEUTICS (P) LTD

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ABSTRACT

Occupational health and safety is one of the important aspects that have a significant impact on the employees' health and the effectiveness and compliance of the organization engaged in pharmaceutical manufacturing. The workers in this sector face many kinds of hazards like chemicals, biology, and mechanics. In this research, the OHS policies practiced in Kaushikh Therapeutics (P) Ltd are discussed. This organization engages itself in pharmaceutical manufacturing and has been granted accreditation based on WHO cGMP guidelines. A descriptive approach was applied in this study and data collected through questionnaires distributed to 100 respondents. The statistical methods applied are Descriptive Statistics, Correlation Analysis, One-Way ANOVA, and Independent Sample T-test. From the results, even though there is successful implementation of basic components of OHS like training, PPE, and conducting safety audits regularly, there is a huge difference between employee participation, management participation, and emergency plans.

Keywords Occupational health and safety, pharmaceutical manufacturing, workplace hazards, personal protective equipment (PPE), safety training, safety culture, risk management, employee well-being, OHS practices, manufacturing industry.

1. INTRODUCTION

It is one of the most critical and fast-growing industries worldwide, playing an indispensable role in safeguarding public health through research, development, production, and delivery of drugs to the target populations. India has a unique place within the industry, being one of the world leaders in the production of formulations and Active Pharmaceutical Ingredients (APIs), exporting generics to more than 200 countries across the globe. The rise in the size and scope of this industry has also increased both the intensity and extent of the occupational hazards experienced by its front-line workers.

Occupational hazards in pharmaceutical manufacturing industries include various forms of exposure to chemicals, biological agents, machinery-related hazards, ergonomic hazards, and psychological risks. If left unmanaged, the above hazards can result in occupational illnesses, occupational injuries, productivity losses, among other negative impacts. This makes Occupational Health and Safety (OHS) an indispensable requirement for all organizations within the pharmaceutical industry.

Occupational Health and Safety (OHS) has become an absolute necessity in this industry. OHS management for pharmaceutical firms includes the development of safety policy, training, hazard identification, Personal Protective Equipment (PPE), emergency planning, and conducting safety audits. Companies that put emphasis on these components not only safeguard the well-being of their personnel but also enhance their regulatory compliance, reduce absenteeism, increase efficiency, and improve organizational performance.

Kaushikh Therapeutics (P) Ltd is a rapidly expanding pharmaceutical company accredited by WHO-cGMP, ISO 9001, and ISO 14001. The company runs its operations in three shifts and produces different types of drugs, such as tablets, capsules, dry syrups, and liquid orals. In this context, this research will examine the occupational health and safety management of Kaushikh Therapeutics (P) Ltd, assessing the success of the implemented safety measures, employee safety consciousness, management commitment, and other areas for improvement.

Research Gap

The topic of Occupational Health and Safety has been widely researched in many different industrial sectors such as construction and heavy engineering, and large scale manufacturing of chemicals. The majority of literature deals with the identification of general safety regulations, OHS theories, and the analysis of safety conditions in international

multi-billion pharma companies. At the same time, there is very little scientific work done in the field of OHS in small and medium scale pharmaceutical companies, especially in the Indian environment.

Moreover, much literature concentrates on the theoretical safety policy structure and does not address the actual implementation and perception of safety measures at the organizational and individual employee levels. There is no comprehensive organization-specific evaluation of OHS including employee awareness about safety, participation in related activities, PPE usage, and efficiency of training programs within a particular pharmaceutical company.

Finally, one aspect of the topic of OHS perception which was not considered by other scholars enough is its gender-specific aspect or, in other words, the question of differences between male and female employees' experience in terms of safety issues.

Research Questions

- What is the present level of employee awareness concerning the OHS policies practiced by Kaushikh Therapeutics (P) Ltd?
- How effective have been the training programs offered by the company in enhancing safety knowledge among its employees?
- How much PPE has been made available to employees and how are they using it?
- What are the potential hazards and risks present in the workplace from the perspective of workers at Kaushikh Therapeutics (P) Ltd?
- Is there any variance in OHS perceptions among different demographic segments (age, gender, experience, and employment level)?
- What is the correlation between various variables concerning safety facilities in the workplace?

Objectives of the Study

Main Aim

The occupational health and safety practices used at Kaushikh Therapeutics (P) Ltd will be examined.

Aim 2

- To find out the occupational health and safety policies that have been developed in the company.
- To check whether employees are aware of the health and safety practices in the workplace.
- To determine how well Personal Protective Equipment (PPE) and other safety practices are used by the employees.
- To determine any occupational health and safety hazards that exist in the workplace for employees.
- To determine the effectiveness of the safety training provided by the company.
- To see if there are any differences in OHS among different demographic groups.
- To make recommendations on how to improve occupational health and safety practices in the organization.

Hypothesis of the Study

Hypothesis 1 – Effect of Safety Training on Employee Awareness

H₀: Safety training has no effect on employee awareness about OHS practices within Kaushikh Therapeutics (P) Ltd.

H₁: Safety training does have an effect on employee awareness about OHS practices within Kaushikh Therapeutics (P) Ltd.

Hypothesis 2 – Relation Between Safety Facilities

H₀: No relation exists between workplace safety facilities/practices (first aid, fire safety, health check-ups, safety audit, and environmental safety).

H₁: A significant positive relation exists between workplace safety facilities/practices.

Hypothesis 3 – Difference Between Groups in OHS Perception (ANOVA)

H₀: There is no difference in perceptions about workplace safety and health among various groups of employees.

H₁: There is a difference in perceptions about workplace safety and health among various groups of employees.

Hypothesis 4 – Perceptions of Occupational Health and Safety in Terms of Gender

H₀: There exists no statistically significant difference between perceptions of occupational risk and incident management by male and female employees.

H1: There exists statistically significant difference between perceptions of occupational risk and incident management by male and female employees.

2. RESEARCH METHODOLOGY

The research design used in this study is descriptive, which is suitable for analyzing the present scenario of occupational health and safety activities in the organization without any modification in the prevailing environment. It will help the researcher to obtain reliable and factual information from employees about their views about safety measures, training programs, and working environment.

Data for the study have been collected using both primary and secondary sources. The primary data were obtained from employees of Kaushikh Therapeutics (P) Ltd through a structured questionnaire developed based on a five-point Likert scale (Strongly Agree=5 to Strongly Disagree). The questionnaire includes dimensions of OHS such as safety awareness, personal protective equipment use, training effectiveness, hazard recognition, safety communication, and safety satisfaction.

The sampling method used in this research is convenience sampling, which involves choosing respondents depending on how easily they can be accessed and agree to participate in the survey. The total number of people sampled includes 100 employees taken from different departments as well as from different employment levels, ranging from permanent employees, contracted workers, apprentices, and worker/operators.

Data analysis was done using Statistical Package for the Social Sciences (SPSS). The following analysis tools were used for the various purposes in this study: Percentage and Frequency Distribution analysis for demographics, Descriptive Statistics (mean & SD) for safety perception evaluation, Cronbach's Alpha for Reliability Analysis, Pearson Correlation Analysis for testing the relationship between safety variables, One-Way ANOVA for finding group differences between safety perceptions, and Independent Sample t-test for comparison of genders.

Data Analysis

Table 1: Descriptive Statistics of OHS Practices

Table 1: Descriptive Statistics – Occupational Health & Safety Practices

Variable	N	Min	Max	Mean	Std. Dev.
I am aware of the safety policies followed in the organization	100	2	5	3.97	0.958
The organization provides adequate safety training programs	100	2	5	4.03	0.846
Safety instructions are clearly communicated to employees	100	2	5	3.89	0.942
I am aware of emergency procedures (fire, accidents, etc.)	100	2	5	3.88	0.891
Personal Protective Equipment (PPE) is adequately provided	100	2	5	3.97	0.784

Interpretation

The results obtained from the above table show that the mean scores for all the five variables lie between 3.88 and 4.03, suggesting that employees agree with the statements concerning OHS practices. The safety training adequacy variable had the highest mean score, Mean = 4.03, SD = 0.846, suggesting high employee confidence in the training programs provided by the organization. The awareness of safety policies and the availability of personal protective equipment (PPE) variables scored a mean of 3.97, demonstrating that there was high agreement among employees. The safety communication variable, Mean = 3.89, and the emergency procedure awareness variable, Mean = 3.88, scored slightly lower mean scores, implying that these variables need improvement.

Table 2: One-way ANOVA – Employee Perceptions of Workplace Safety and Health Conditions

Null hypothesis (H₀): There is no significant difference between employee perceptions of workplace safety and health conditions among various groups.

Alternative hypothesis (H₁): There is a significant difference between employee perceptions of workplace safety and health conditions among various groups.

Table 2: One-Way ANOVA Analysis

Variable	Sum of Sq. (Between)	df	Mean Square	F Value	Sig.
I feel safe while working in my workplace	2.357	3	0.786	1.126	0.343
The workplace is free from major health hazards	0.856	3	0.285	0.358	0.783
Machines and equipment are safe to operate	1.705	3	0.568	0.778	0.509
Proper ventilation and lighting are maintained	1.557	3	0.519	0.727	0.538
Cleanliness and hygiene are maintained in the workplace	1.634	3	0.545	0.610	0.610

Interpretation

From the above table, it can be seen that the Sig. values for all five variables are above 0.05. It suggests that there are no significant differences in OHS perceptions among employees belonging to different demographics. For the statement 'I feel safe while working in my workplace', the F value is 1.126, and its significance level is 0.343, which is insignificant. In the same way, all other variables, i.e., freedom from hazards at workplace (Sig. = 0.783), safety equipment (Sig. = 0.509), lighting and ventilation (Sig. = 0.538), and hygiene maintenance (Sig. = 0.610), show uniformity in their perceptions, too. Hence, H₀ is accepted. It shows that safety measures are followed uniformly throughout the organization without regard to employees' ages, experiences, or their ranks within the organization.

Table 3: Pearson Correlation Test for Workplace Safety Facilities

H₀: There is no correlation between workplace safety facilities and practices.

H₁: There is a positive correlation between workplace safety facilities and practices.

Table 3: Pearson Correlation Analysis

Variable	First Aid	Fire Safety	Health Check-ups	Safety Audits	Environ. Safety
First aid facilities are easily accessible	1.000	0.438	0.449	0.538	0.501
Fire safety equipment is available and functional	0.438	1.000	0.449	0.468	0.446
Regular health check-	0.449	0.449	1.000	0.460	0.496

Variable	First Aid	Fire Safety	Health Check-ups	Safety Audits	Environ. Safety
ups are conducted					
Safety audits and inspections conducted regularly	0.538	0.468	0.460	1.000	0.520
Organization ensures proper waste disposal and environmental safety	0.501	0.446	0.496	0.520	1.000

Interpretation

From the correlation analysis using the Pearson correlation, it can be seen that there is a significant correlation (at $p < 0.01$) between all five workplace safety facilities. It proves that safety practices are related and dependent on each other. The highest correlation coefficient was between first aid facilities and safety audits (0.538), which shows that organizations that have an effective system of audits ensure first aid availability. Also, safety audits and environmental safety show high correlation (0.520). It indicates that inspection plays a significant role in environmental safety management. All correlations were found to be in the range from 0.43 to 0.54 and positive. That means that improvement in one safety aspect leads to improvement in all others, making it holistic and integral. Thus, H_0 is rejected and H_1 is supported.

Table 4: Independent Samples T-Test on OHS Perception by Gender

H_0 : There is no significant difference between males and females in terms of their perceptions regarding occupational risk and incidents management at work.

H_1 : There is a significant difference between males and females in terms of their perceptions regarding occupational risk and incidents management at work.

Table 4: Independent Sample T-Test (Group Statistics)

Variable	Gender	N	Mean	Std. Dev.	Std. Err. Mean	Sig.
Organization takes necessary steps to prevent accidents	Male	50	3.94	0.935	0.132	0.638
	Female	50	3.86	0.904	0.128	
Employees are encouraged to report unsafe conditions	Male	50	3.90	0.863	0.122	0.910
	Female	50	3.92	0.922	0.130	
Management responds quickly to safety issues	Male	50	4.06	0.890	0.126	0.541
	Female	50	4.16	0.766	0.108	
Proper procedures followed	Male	50	3.82	0.983	0.139	0.218

Variable	Gender	N	Mean	Std. Dev.	Std. Err. Mean	Sig.
after an accident occurs						
	Female	50	4.06	0.935	0.132	
Risk assessment is conducted before performing tasks	Male	50	4.04	0.781	0.111	0.812
Variable	Gender	N	Mean	Std. Dev.	Std. Err. Mean	Sig.
	Female	50	4.08	0.829	0.117	

Interpretation

As indicated in the table presented above, the levels of significance for all the five variables are more than 0.05, implying no statistically significant difference between the perceptions of risk and incident management by male and female employees. As such, we accept the null hypothesis. Furthermore, the average scores for both categories appear relatively similar, starting at 3.82 and ending at 4.16. From these results, it becomes clear that male and female employees seem to believe that the safety processes used in the organization are effective, with little variation across genders. In some cases, however, female employees have a slightly higher agreement with regard to things like response to safety concerns (Average female score = 4.16; Average male score = 4.06) and post-accident protocol (Average female score = 4.06; Average male score = 3.82).

Findings of the Study

- As can be observed in the descriptive statistics above, the employees have a positive perception regarding OHS in the work environment as evidenced by the mean values of all safety measures ranging between 3.88 and 4.03 on a scale of five.
- Safety training had the highest mean value (4.03), and it means that the training offered in the organization is generally regarded by the employees as satisfactory.
- The awareness of safety policies and PPE provision both had an equal mean score of 3.97, showing that the employees have a good awareness of the safety provisions at work.
- On the other hand, the awareness of emergencies procedures had the lowest mean (3.88), and thus, there seems to be some problem with the preparedness of the employees in terms of fire, accidents, and other kinds of emergencies.
- Correlation analysis showed that all five variables regarding safety facilities, namely, first aid, fire safety, health check-up, safety audit, and environmental safety had significant correlations ($p < 0.01$).
- Among these five variables, the highest correlation was recorded between first aid facilities and safety audit ($r = 0.538$).
- One-Way ANOVA test indicated that there is no statistical difference in OHS perceptions among different demographic groups (age, experience, employment level) with significance value exceeding 0.05 in all cases.
- Independent Sample T-test indicated that there is no significant difference in perception of OHS based on gender because the significance values of all variables exceed 0.05.
- Women were perceived to be more satisfied with management responsiveness and procedures following accident than men, but the difference was not significant.
- Overall satisfaction with the safety culture and safety commitment of management is still an issue since the majority of participants were dissatisfied with it.

Practical Implication

The results obtained from this study have several implications for Kaushikh Therapeutics (P) Ltd, as well as other SMEs manufacturing medicines in India.

First of all, this study emphasizes the need to go beyond OHS compliance and develop a safety culture. Safety must be incorporated as an integral part of organizational activities, not just as an obligation. The active participation of managers in such practices as safety walks, audits, and communication has proven to be one of the most effective measures influencing employee trust and safe behavior at work. The second important implication is related to emergency preparedness. The low scores for this dimension indicate a major deficiency in organizations. Thus, they should introduce mandatory drills, visible emergency procedures on the shop floor, and training employees regarding what to do in case of emergency. Thirdly, the positive correlations between all dimensions of safety facilities highlight the importance of adopting an integrated approach toward OHS investments. Improving any one aspect – for instance, safety audit – will have a positive impact on other aspects of safety, namely the ease of accessibility to first aid treatment, health monitoring, and environmental safety. The finding therefore provides a strong case for developing comprehensive OHS strategies based on allocation of investments into different areas.

Fourth, no differences between different demographic groups in their OHS perceptions show that the organization succeeded in implementing safety measures uniformly at all organizational levels. However, considering the low overall level of satisfaction, it seems important that companies need to receive feedback about the implementation of safety practices through employee committees and surveys.

Finally, the findings of this study may be useful for OHS evaluation within mid-sized manufacturers in the Indian pharmaceutical industry. Policy-makers can adopt these results in order to develop OHS audit and safety culture improvement programs.

3. CONCLUSION

An empirical method was adopted to investigate the OHS practices of Kaushikh Therapeutics (P) Ltd among 100 employees from varying demographics. The findings revealed that the company has developed a sound OHS system, with efficient safety training programs, sufficient provision for PPE, availability of first aid, and safety audit practices. From the descriptive statistics, it is clear that there is a generally favorable attitude towards the safety systems that have been established. Correlation analysis shows that there exists a strong relationship between the dimensions analyzed, thus confirming the significance of adopting a comprehensive approach in managing safety systems.

The results also highlight some significant issues that require organizational action. It appears that employee satisfaction levels are not high regarding the general safety culture within the organization and safety management systems. This indicates that although OHS systems may exist formally, employees do not fully perceive them within the organization. Emergency preparedness was rated as the lowest, showing an area of weakness that needs to be tackled through frequent emergency drills, proper signs, and training sessions. Employee involvement in safety-related activities needs to be promoted actively through various mechanisms such as safety committees.

Tests prove that OHS perceptions are consistent among different demographics and genders because of equal and uniform application of safety procedures within the organization, which is an important achievement for the organization. However, making this structure an integral part of the organization's culture requires visible leadership and continuous improvement along with active involvement of employees.

Conclusively, OHS is not only about compliance but a critical element that impacts on employee welfare, organizational productivity, regulation status, and sustainability. Kaushikh Therapeutics (P) Ltd is well on the way to establishing an effective OHS framework; what it needs to do now is advance into creating an entrenched safety culture, bridge communication barriers, and ensure that each and every employee, irrespective of position, feels safeguarded, heard, and involved in the quest for a safer workplace environment.

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