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Plant safety at workplace by reducing human errors

Suresh Pareek, Managing Director, Ideal Cures, elaborates on the need for safety in pharmaceutical plants and the required measures in such manufacturing facilities, highlighting the significance of human behaviour and human error

Minor accidents are sometimes not reported while the major ones come to our notice as they mainly occur due to accidents, human error or major machine damage or break down. This is unfortunate and it seems that we still do not consider safety as an important tool of productivity. Safety is a concern for everybody in all walks of life; home or at workplace. Activities are mostly the same only the quantum of risk varies. Driving, walking on the road, travelling in vehicles, working in the kitchen, lifting heavy loads, working with machines and use of electrical appliances are all routine activities and each activity has its own set of safe practices that need to be followed compulsorily.

Fire and electrical hazards coupled with falling of heavy loads, slippery surfaces and spillage/ leakage are some of the major causes of accidents in manufacturing plants. Apart from the consideration of the plant design and protective devices, major issues which are overlooked are training of employees and refresher courses.

In pharmaceutical or chemical plants, hazardous situations may also arise due to the operations conducted in the open or without a care for safety of plant personnel safety. Volumes have been written and talked about Safety, Health and Environment (SHE), innumerable guidance have been proposed, yet human factor and non compliance with Standard Operating Procedures (SOP's) and instructions continues.

Most of the times accidents occur due to ignorance or exhibitionism. It may be human nature to experience and explore but the pharma plant cannot be, or rather should not be, a place for this fancy.

In the plant, safety should be the first concern and the foremost objective is to work with discipline following the SOP's. The most unfortunate thing is that SOP's for plant safety, workers health and environment are prepared, but never followed. They are ignored, violated and neglected by most people. Any type of energy if not channelised or used in a systematic manner will have serious implications. In the manufacturing plants, apart from the human resources (personnel), resources such as water and energies like steam, gases, heat, electricity, mechanical power are also used. A serious and systematic handling of these energies or resources will be the first step in the right direction.

Reduction of human error

Of the several factors responsible for the threat to safety, human behaviour is the foremost and still the most challenging factor. In this era of automation and electronic controls, humans are still the main instruments to regulate process. Human error and the response to the situations contribute to the net results. It needs to be emphasised that reduction of human error at workplace will bring about a phenomenal change. It cannot be ruled out that the greatest risks as well as greatest asset to the success of any enterprise are human beings and the human error can simply make or mar. It is universally true that the misunderstanding of the key aspects of the job roles should not be overlooked or underestimated as it may be harmful in the long run. Research suggests that human errors are not only predictable, but preventable. Most of the workplace errors are caused due to human error. This makes it even more significant to understand human behaviour, as our response and reactions to situations is very relevant as individuals or as a group. The scientific basis for classification of categories of human error is well established and puts errors in six major categories. MRI techniques have made the study of the living brain even easier and explains what really may be going on at any particular situation. This classification is not exclusive or compartmentalised; it is a combination effect what emerges.

Classification of human errors

- **Learning Gap:** Due to lack of knowledge or not aware of the consequence (Don't know)
- **Memory Gap:** Not able to use the skill or knowledge at the time (Know but don't remember)
- **Inconsistency:** Inconsistent performance (Having knowledge but variability in methods)
- **Application:** Wrong outcomes, slips, transcription errors (Know but applied incorrect action)
- **Omission:** Missing information or steps, using wrong tools (Know but missing step or action)
- **Decision:** Inappropriate decision or behaviour (Wrong decision in a given situation)

This implies that each individual is going to have different levels of understanding and different response of behaviour. In the absence of a common code or accepted way of operations the actions, reactions and responses are going to vary and that is going to lead to varying outcomes including safety standards.

The pharma industry is cited as one of the most important one with the greatest level of employee misunderstanding because of the criticality in the nature of the materials and stakes (patient health) involved besides the regulatory requirements. The biggest impact of the employees misunderstanding (errors) is unplanned downtime, extraordinary delays, loss of opportunity, compromising of safety and eventually a loss of business. The human factor becomes critical to be controlled, managed and regulated because the facilities, utilities, machines and procedures can be the best yet the people who are going to operate and perform will determine the net outcome.

Since the focus is on the safety related to plant operations the effect is more on the deliveries, quality, loss or shutdown. The ultimate goal is how to reduce human errors to the minimal and if possible eliminate completely for better compliance of safety standards and SOP's and avoiding mishaps and accidents.

Mitigation of the risks and problems arising due to human error cannot be total. Sudden breakdowns or unanticipated abnormal situations will continue to be the cause of losses but the end objective is to have a safe and healthy workforce and accident free work atmosphere. Most important is that the managers must understand the strengths and weaknesses of the employees and the responsibilities need to be allocated

accordingly. Regular assessments are necessary to address the potential problems by delivering the right training programmes at right time. This is going to improve the employees confidence and productivity. Many times the employees may be reluctant to undergo the training process but a targeted and specific training approach will always be helpful. Awareness of the employees' strengths and weaknesses helps to bridge the knowledge gaps and reduce the risk of human error, in addition to this it also help managers to make more informed decisions about which people can take on additional responsibilities. To sum up, the need for the safe installations and safe working conditions cannot be neglected at any cost but human errors need to be minimised and that is possible by working under discipline, following standard methods and instructions, by assigning right responsibilities to the right people, providing necessary training and updating the same and developing people to accept the jobs of higher responsibility.

Note: The views expressed are personal and based on the observations and experience.

The author can be reached at pareeksuresh@idealcures.co.in

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