

IMPLEMENTATION OF BEHAVIOUR BASED SAFETY IN IT INDUSTRY**R. Gokula Krishnan*, T. Dheenathayalan**, Dr. K. Visagavel*** & Dr. PSS. Srinivasan******

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Abstract:

This project deals with the useful understanding and the application of the concept of behavior-based safety about correcting unsafe behaviors for reduction of accidents and promoting safe behaviors for developing injury free culture in the organization. Organizations all over the world have attempted to decrease risk behaviors by concentrating on leadership, engagement, training, communication and recognition to motivate behavior change. These styles may either be effective or ineffective or have impact on the demonstrated safety behavior within the organization. Various approaches have been taken against accidents and had reasonable success in reducing them. Still "zero accident" state can't be reached at any cause. The various analysis resulted in a conclusion that it is because of human behavioral changes other than accidents caused by unsafe conditions/acts. Hence behavioral based safety (BBS) which is a bottom-up approach with top-down support from management should be enacted into the organization's safety culture.

Key Words: Behavior Based Safety (BBS), Safety Culture, Unsafe Acts/Conditions, Safe behaviors & Accident Reduction.

Introduction:

Behavior Based Safety (BBS) is the "application of science of behavior change to real world problems". A process that creates a safety partnership between management and employees that continually focuses people's attentions and actions on theirs, and others, daily safety behavior. The case of human behavior is associated with attitude, personality, motivation and memory, together with those physical and mental characteristics which constitute a person and his environment. BBS is not based on assumptions, personal feelings, and/or common knowledge. To be successful, the BBS program used must be based on scientific knowledge. Behavior based safety must also have attitude adjustment to be sustaining. It has been proven that "behavior influences attitude and attitude influences behavior". The goal should be small gains over and over again; continuous growth. BBS is not quick fix. It is a commitment. There are numerous programs on how to implement behavior based safety programs. They vary in price, detail and commitment. But the goal is always the same, eliminate injury. A review of all scientific publications on behavior based safety since the mid of 1970's to date shows that different approaches exert different effects. Focusing on workgroups, in static settings was demonstrated to be the most efficient at behavior change and injury reduction.

Fundamentals of Behavior Based Safety:

According to Thomas R. Krause, 80- 95% of accidents came from unsafe behaviors. The accident ratio in fig 1 shows that, according to Thomas R. Krause, behavior is a leading indicator of safety. That is, human is the elementary factor resulting in accidents. Unsafe behaviors will lead to risk conditions and various mistakes which ultimately lead to loss or more severe accidents. To reduce the number of accidents we must start from building safe behavior first. Behavior underlies as a root cause for all the accidents. Hence, we are concentrating on behaviors of the employee.



Behavior Based Safety (BBS) is a safety management practice that has originally been used in the process industry to improve the safety level on the work floor. It also improves the safety culture with the employees. Behavior-based safety (BBS) has been around for more than 30 years and is one of the most trusted employee-driven safety systems out there. Still, there are many misunderstandings about this tool and how best to use it. The points below draw on our experience implementing BBS systems at more than 3,500 locations around the world. It focuses on what people do, analyses why they do it and then applies a research supported intervention strategy to improve people what to do. In a safety management system based upon the hierarchy of hazard control, BBS may be applied to internalize hazard avoidance strategies or administrative control. BBS is not an assumption, personnel feeling, and or common knowledge.

Problem Definition:

The followings are the unsafe behaviors defined by the industry while the employee working.

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- Floor & restroom cleaning without wearing personal protective equipment by supporting staffs.
- Handling chemicals without PPE's.
- Improper logout & tag out in electric panels by maintenance.
- Improper working posture by employees while using laptops.
- Handling of hot foodies without proper PPE's by cafeteria helpers.
- Improper usage of seat belts in cabs by driver and employees
- Using mobile phone while driving & over speed by cab drivers.
- Pulling the trolley during material movement affects the spine.
- Cleaning glass window at height without safety belt& helmet.

From the above stated problems, the five problems are related with non-adherence the personal protective equipment (PPE). Hence the above problems are compressed to following:

- Floor & restroom cleaning without wearing personal protective equipment by supporting staffs.
- Handling chemicals without PPE's.
- Handling of hot foodies without proper PPE's by cafeteria helpers.
- Improper usage of seat belts in cabs by driver and employees.
- Cleaning glass window at height without safety belt& helmet.

Scope and Objective of the Project:

Scope of the project is to eliminate the unsafe behaviour to develop safe environment. General unsafe behaviours exhibited from the employees are:

- Non-adherence of PPE
- Handling of hot foodies without proper PPE's by cafeteria helpers.
- Improper usage of seat belts in cabs by driver and employees.
- Cleaning glass window at height without safety belt& helmet.
- Floor & restroom cleaning without wearing personal protective equipment by supporting staffs
- Main objective of this project work is
- To develop injury free culture in organization.
- To reduce the incident rate of the company.

Literature Survey:

Ahong Haeetal (2012) the relationship between safety culture and safety performance are the basic problems of the safety culture. In this paper, the basic problems of safety culture on the basis of literature reviews were introduced. First, the concept of safety culture was defined as safety management items, making the border of safety culture construction clearly.

E. Scott Geller (2009) the behavior based approach to managing occupational risk and preventing workplace injuries is reviewed. Unlike the typical top-down control approach to industrial safety, behavior-based safety (BBS) provides tools and procedures workers can use to take personal control of occupational risks.

Anam Parand et al (2013) The steering team directs the operatives through the 6 phases of programmed, which involve self and peer observations as the behavioral measure, and feedback, goal-setting and rewards as the instigators for behavior change.

Jason DePasquale et al (2009) one-on-one interviews and focus-group meetings were held at 20 organizations that had implemented a behavior-based safety (BBS) process in order to find reasons for program successes/failures. A total of 31 focus groups gave 629 answers to six different questions. A content analysis of these responses uncovered critical information for understanding what employees are looking for in a BBS Program. A perception survey administered to individual employees (n=701) at these organizations measured a variety of variables identified in prior research to influence success in safety efforts.

Julia Clancy (2011) an approach to behavior-based safety that was undertaken in the manufacturing industry. The approach has overcome many of the problems associated with more traditional approaches to behavior-based safety. We believe that this approach holds a lot of promise for the mining industry.

Methodology and Implementation:

This project deals with the promoting safe behaviour to develop injury free culture in the organization. The incident rate has been growing due to unsafe behaviours exhibited by the employees while working. While promoting safe behaviours automatically the unsafe actions will decrease, and the incident rate will come down.

Promotional Activities:

Promotional activities which involve the various competitions conducted in order to motivate.

- Board displays.
- Pamphlet distributions
- Safety posters
- Special campaigns.
- Issuing of safety pocket card
- Motivation
- Behavior based safety training

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- Easy way to spread the information about the importance of PPE's.
- Right PPE's for right job
- Self-protective of employee
- To increase the own commitment

Pamphlet Distributions:

- Safety pamphlet is a small booklet or leaflet safety information in a single subject.
- Pamphlet contains very clear and meaningful safety information.
- Easy way to spread the safety information.

Pamphlet distribution summary

- Visitors = 70
- Suppliers = 60
- Contract Employees = 320
- Supporting Staffs = 240
- Maintenance Team = 10

Safety Slogan:

- Safety slogans are containing very clear and meaningful safety information.
- Safety slogan writing competition has been conducted to all employees and staffs of the company.
- Best slogans are sort listed by safety department persons and prizes has been issued.

Member participation summary:

- Contract Employees = 320
- Supporting Staffs = 240
- Maintenance Team = 10
- Assistant Managers = 20

Safety Drawing Competition:

Theme: "Be Safe Think Smart"

- Safety drawing competition is an event designed to promote the safety culture message among the employees and their families.
- It is a platform for everyone to showcase their creativity and help spread a very important message.
- Member participation summary:
- Contract Employees = 90
- Supporting Staffs = 80
- Maintenance Team = 10

Benefits:

- Improves employees understanding & awareness on safety culture.
- Employee's motivation.

Safety Essay Competition:

- Safety essay writing competition has been conducted to all employees and staff of the company.
- Best essays are selected (Top 3 essays) by safety department persons and a prize has been issued for participation persons.

Member Participation Summary:

- Contract Employees = 28
- Supporting Staffs = 15
- Maintenance Team = 5

Benefits:

- To assess and identify the awareness of safety culture among the employees.
- Helps to promote safety in the workplace.
- Safety essay competition is used to grasp the safety knowledge of the employees.

Pocket Cards:

Summary of Pocket cards distribution:

- Contract employees = 320
- Full Time Employee = 220
- Supporting staffs = 240
- Maintenance team = 15
- Assistant managers = 35

Benefits:

- Commitment
- Remembrance
- Handling of PPE's

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- Use correct PPE's for correct job
- Maintain PPE's always in good condition
- To aware the importance of PPE's

Motivation Through Training:

Cartoon competitions have been conducted for all category employees in the topic of "Unsafe behaviour and its effect". By conducting these types of competitions among employees it has become easy to get their views on unsafe behaviours. Around 450 employees eagerly participated in the competitions. The cartoons drawn by the employees were finally evaluated and winners are honoured by vice president.

Employees participation:

- Regular: 220 persons.
- Contract: 170 persons.
- Others: 60 persons

Employees were continuously motivated by both in house and expert training.

- Physical well being
- Mental well being
- Social well being
- Spiritual well being

In House Training:

In house training which involves training provided to the contract employees in daily fashion, when is a team of all contract employees training is provided before involving them into work. Need based training is provided to the contract employees. Employees should not engage in the risk process. So, they will be in engaged in light work areas.

Induction Training:

Temporary workmen were inducted on regular basis. These employees should be trained on safety before involving into the job.

Summary of training attended:

- Contract persons = 270
- Temporary workers= 2180

Safety Committee:

Safety committee is formed in all the plants. It has been to discuss the existing problem concerned with safety. Safety committee is comprised with only with the union category members. The problems which are discussed during the safety committee meeting will not reach the middle level management. Team leaders and supervisors are not concerned with the safety aspects; they are keen about the production increases. So, it was planned to change the existing safety committee members.

Modified Safety Committee:

Middle management people were involved in the modified safety committee. By involving the middle management people, it will be easy to rectify the problems stated by the employees. Modified safety committee members

- Technical directors: 4
- Managers: 5
- Assistant managers: 10
- Team leaders: 15

Result and Discussion:

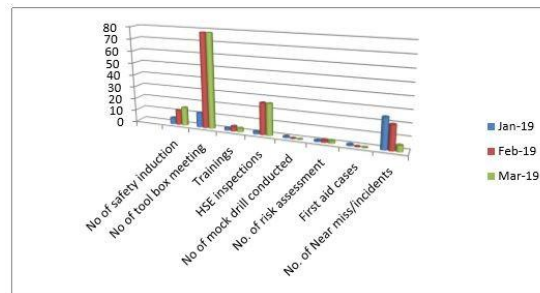
The incident rate was noted during the month of Jan, Feb & March 2019. The incident rate has come down due to elimination of unsafe behaviors. The employees started to wear the required personal protective equipment issued by management.

The awareness level regarding safety has gone up among employees.

The various promotional activities have been introduced and implemented in order to reduce the incident rate. The various promotional activities are cartoon competition, motivation through training; in house training, induction training, and modification of safety committee were improved. The incident rate and improved safety performance statistics was noted.

SAFETY PERFORMANCE STATISTICS					
SL.NO	DESCRIPTION	JAN-2019	FEB-2019	MAR-2019	CUMMULATIVE
1	Total safe man hours worked	49920	48880	48880	147680
2	No of safety induction	5	12	15	32
3	No of tool box meeting	12	78	78	168
4	Trainings	2	4	3	9
5	HSE inspections	2	26	26	54
6	No of mock drill conducted	1	0	0	1

7	No. of risk assessment	1	2	2	5
8	First aid cases	1	0	0	1
9	No. of Near miss/incidents	25	20	5	50
10	Unsafe act/conditions	55	51	15	121
11	Non reportable cases	0	0	0	0
12	Frequency rate	0	0	0	0
13	Severity rate	0	0	0	0

**Conclusion:**

By involving the concept of BBS and behavior modification techniques such as intervention, the accident will be reduced and also diminish the incident rate gradually. The PPE consumption from the store will be increased, due to continuous monitoring by team leaders the PPE adherence will increase, especially with the contract employees. By passing the safety mechanisms will come down due to intervention with plant maintenance supervisors. The findings of this study suggest are as follows.

- Proper procedures, SOP must be recommended and to be followed.
- Employees interactions towards BBS must be evolved.
- The management support to be evolved.
- PPE must be used, and the importance of PPE must be known.
- Proper training must be initialized.

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