

RISK MANAGEMENT IN LABOR PSYCHOSOCIAL ISSUES IN CONSTRUCTION PROJECTS

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Abstract-During past few years risk management in work based psychosocial issues has been a tremendous growth area on Occupational Health and Safety sector. Psychosocial hazards developed costs based on Direct and Indirect ways which contribute to ill health of workers and many other business factors. Risk assessment for psychosocial hazards follows the same principles as risk of the workplace, tasks, context, practices and human interactions; and the use of worker assessment for many other OHS hazards. Techniques can include analysis of data of Organization, such as absenteeism, lost-work-time injuries and turnover; assessing worker complaints; observation surveys and/or focus groups. Assessment should consist of both data collection and measurement of the relevant work stressors. The aim of this project is to analyze the relationship between psychosocial factors and musculoskeletal disorders in an attempt to find priority areas for future intervention strategies and to Study the Productivity factors, motivational and de-motivational factors of labor and preparing the correlation among them.

Keywords: Psychosocial Hazards, Occupational Health and Safety, Risk Assessment, Musculoskeletal Disorder.

1. INTRODUCTION

In the construction field, risk is often considered as the presence of potential or actual threats or chances that influence the objectives of a project during construction, commissioning, or at time of use. Risk is also defined as the exposure to the opportunities of occurrence of events adversely or favorably affecting project objectives as a consequence of uncertainty.

There are two types of risk:

- 1) Pure risk in which there is no possibility of financial gain but there is possibility of financial loss.
- 2) Speculative risk that involves the possibility of both losses and gain. It is necessary to find all risks involved at all the level of the project so as their assessment and analysis can be done accordingly with respect to that.

There are many methods to identify risks, depending on type of project. Risk management process with respect to construction industry involves following stages:

1. Primary stage –Identification of Risk
2. Secondary stage - Risk Assessment; Analysis of Risk
3. Tertiary stage - Risk Mitigation

2. RISK IDENTIFICATION PROCESS

Risks exist from the very initial stage of a project. Hence we need to identify what they are, ascertain when they might occur, what effect they may and what measures need to be taken to avoid their occurrence or mitigate their potential effect. The identification of risks may be considered as the most crucial stage in Risk Management, if only in terms of bringing considerable advantages to all parties in the greater understanding of the project, irrespective of whether further action is taken or not. When identifying risks, it is important to appreciate not only the risk itself but the source, the event that may make the risk materializing and the effect of the risk if it does materialize.

2.1 SOME OF THE MAJOR RISK IDENTIFICATION METHODS

2.1.1 QUESTIONNAIRES METHOD

Questionnaires are usually drawn up from a combination of past experience and specific project criteria. There are two types of questionnaire, one is a very general form with non-specific prompts or questions and the other can be detailed as is required by the specific project. Questionnaires also facilitate consistently presented answers from various team members which allow less time consuming and more meaningful comparisons. Hence the risk manager can ascertain more readily any apparent consensus.

2.1.2 INTERVIEW METHOD

This is Method that has been used historically by personnel departments and other consultants to extract information. It has also been used by risk managers to identify possible risk in a growth. The interviews may take place on a one to one basis or on a many to one basis. The many to one basis should consist of project members from various disciplines so that the subjects raised can be viewed from different perspectives. The problem with this technique is that it is time consuming not only to carry out the interviewing but also record the risks arrived at there from.

3. RISK ASSESSMENT

Assessment of risk is the process of estimating and communicating workplace safety risk, and deciding whether this risk is considerable or not. Conducting a risk assessment involves making a value judgment based on this data and any available evidence within the workplace and industry. This may include numbers of current and previous incidents,

severity of injuries from the identified hazard, lost work time from injuries and number of people involved in incidents. Widely used method is risk matrix. The risk matrix records the level of risk which is identified by the relationship between the likelihood of an incident occurring from the hazard, and the effect caused by the hazard.

4. PSYCHOSOCIAL HAZARDS AND OCCUPATIONAL STRESS

Psychosocial hazards pose a unique challenge to OHS professionals. This challenge is fueled by the complexity of research findings, high media interest, the disadvantages of regulations, unique skills required by professionals working in this sector, industry perceptions of the issue, and the often cumulative nature of injury or illness effects that are not proximal to one particular workplace event.

A psychologically safe workplace is defined as one that is the result of every acceptable effort being made to save and promote the psychological health of workers.

The overall desire of the People at Work Project is to assist employers to install a 5-step psychosocial risk management process at the level of the workplace or enterprise. In accord with most process models of risk management in regards to any context, the People at Work Project follow the stages of

1. Preparing,
2. Assessing through Surveying,
3. Consulting on effects,
4. Taking Action, and
5. Reviewing and Developing.

In order for organizations to fulfill their primary duty of care to ensure, so far as it is reasonably practicable, the provision and maintenance of a work environment without risks to WHS, it is important to take investigative steps to find and assess the level of risk. In the context of work-related mental health, these steps involve finding areas of the business that have poorer mental health and how that poorer mental health is related to work characteristics.

5. OBJECTIVES OF THE PROJECT

1. To determine the occurrence of musculoskeletal disorders in both single and multiple body regions and stress symptoms among construction worker sand to identify the magnitude of the problem.
2. To examine the relationship between psychosocial factors and musculoskeletal disorders in an attempt to identify priority areas for upcoming intervention strategies.

3. To Study the Productivity factors, motivational, demotivational factors of labor and forming the correlation among them.
4. To analyze the psychosocial factors among construction labors using a standardized method that demonstrates high content validity (covers the entire spectrum of related Psychosocial factors) and reliability.

6. IDENTIFICATION OF RISK FACTORS IN CONSTRUCTION INDUSTRY

There are various risks involved in construction projects and they are separated into internal and external risks. External risks are factually of non-controllable nature so there is every need to frequently scan and make an assumption about these risks in connection of agency's strategy.

1. Due to inflation
2. Currency exchange rate fluctuations
3. Client induced changes
4. Climate and weather conditions
5. Natural disaster or major accidents
6. Politics
7. Technology change

Likewise internal risks are relatively more controllable in nature and may differ between projects. Some examples of internal risks are given below

1. Uncertainties due to labor, Plant & material
2. Resources and site conditions
3. Sub-Contractor

7. SELECTION OF PSYCHO-SOCIAL ISSUES IN HUMAN RESOURCE

Exposure to psychosocial hazards in the workplace not only creates psychological and physiological damage to individual employees, but also creates further repercussions within society-minimizing productivity in local/state economies, corroding familial/interpersonal associations and producing negative behavioral outcomes.

Psychosocial issues in Human resource include three major categories such as

1. Psychological
2. Physiological and
3. Social and behavioral issues

A. PSYCHOLOGICAL ISSUES

Some of the major psychological issues are,

1. Generalized Anxiety Disorder
2. Obsessive Compulsive Disorder
3. Depression

4. Substance Abuse Disorder
5. Acrophobia
6. Claustrophobia

B. PHYSIOLOGICAL ISSUES

1. Mental Illness
2. Musculoskeletal Disorder
3. Hyper-tension

C. SOCIAL & BEHAVIORAL

1. Physical Inactivity
2. Excessive Alcohol
3. Drug Consumption
4. Nutritional Imbalance
5. Sleep Disturbance

8. RANKING OR GROUPING OF ISSUES USING QUESTIONNAIRE

Ranking of issues was done by Questionnaire method of analysis, and the required information was obtained from the workers working in a site. The ranking was carried out by the answers given by the workers and major issues which affect the productivity and individual human health were identified by plotting graphs and with the usage of evaluation tools.

8.1 DATA COLLECTION & RANKING OF ISSUES FROM THE QUESTIONNAIRES OBTAINED FROM THE WORKERS

A Questionnaire was prepared with all the major psychosocial issues listed and the workers are asked to select the type of psychosocial disorder they are suffering from and how it affects their individual health and productivity. Based on the Information collected from the Questionnaire the issues were ranked accordingly and frequent types of disorders in workers were identified. Analysis was done based on the Age factor and Experience of Workers in order to find which range of age and experience of workers contribute to a higher level of psychosocial issues and from that developing a remedial measures in order to reduce those issues.

Fig -1: Data uploaded in Excel sheet

8.2 OBSERVED PSYCHOSOCIAL ISSUES SPLIT-UP

From the chart it is clearly viewed that Most of the workers affected with psychological issues when compared to other two issues.

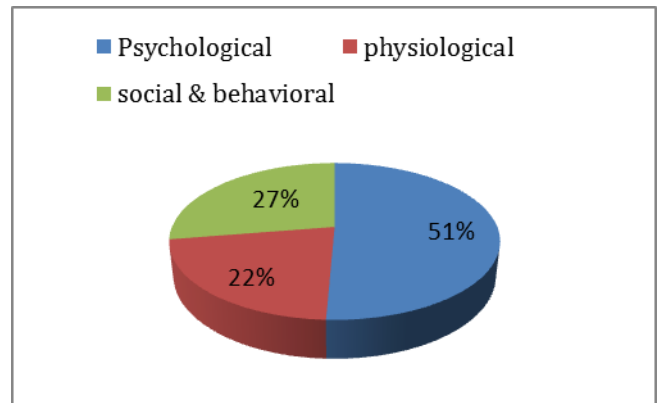


Chart -1: Split up of psychosocial issues

8.3 ANALYSIS DONE BASEDON AGE FACTOR OF WORKERS

In this chart No. of workers vs Age range of workers it is clearly viewed that all three issues affect more number of workers in the age range between 31-40, hence adequate importance to be given in that age range of workers by providing them adequate guidance and making them comfortable by advising them to consult psychiatrists and obtain treatment process like medication, meditation etc.,

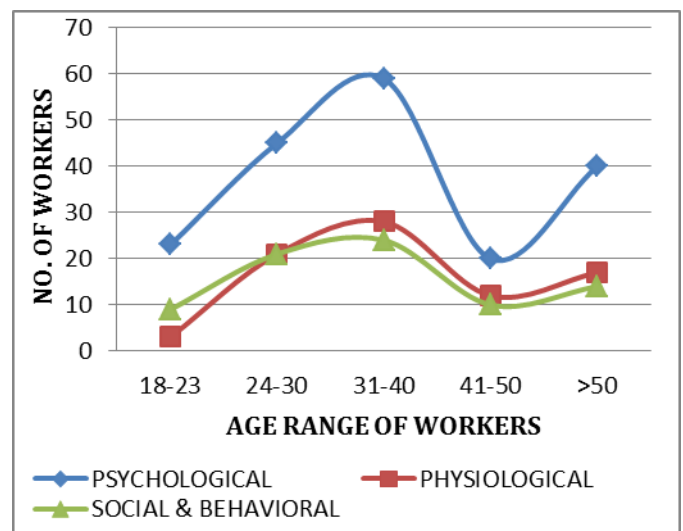


Chart -2: Analysis Based On Age of Worker

8.4 ANALYSIS DONE BASED ON EXPERIENCE FACTOR OF WORKERS

In this chart No. of workers vs Experience range of workers it is clearly viewed that psychological, physiological, and social and behavioral issues affect more number of workers in the experience range between 15 to 18 years of

experience. Hence workers ranging from 15 to 18 years of experience should be monitored with adequate supervisors and they should be given regular counseling and should be made to have good healthy habits and maintain their health with good nutrition with proper balance in nutrition for performing their daily job actively by avoiding unwanted accidents.

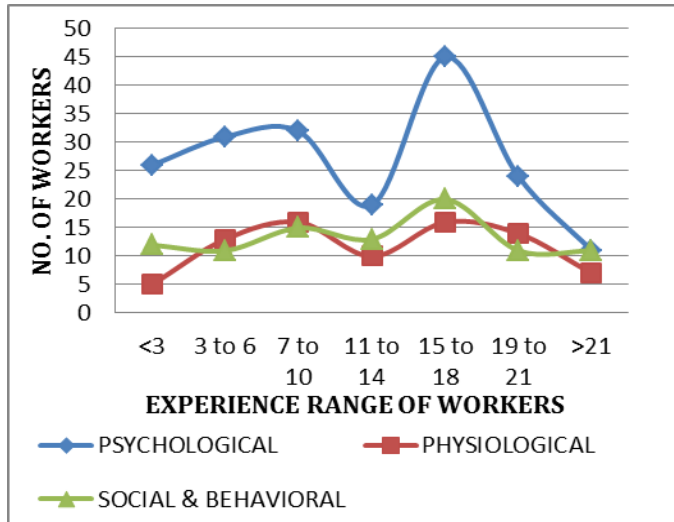


Chart -3: Analysis based on Experience of worker

8.5 BASED ON NO. OF ISSUES vs NO. OF WORKERS

In this chart No. of Issues vs No. of Workers it is clearly viewed that more number of workers are affected with 7 major types of psychosocial issues such as,

1. Musculoskeletal Disorder
2. Nutritional Imbalance
3. Claustrophobia
4. Acrophobia
5. Generalized Anxiety Disorder
6. Obsessive Compulsive Disorder
7. Sleep Disturbance

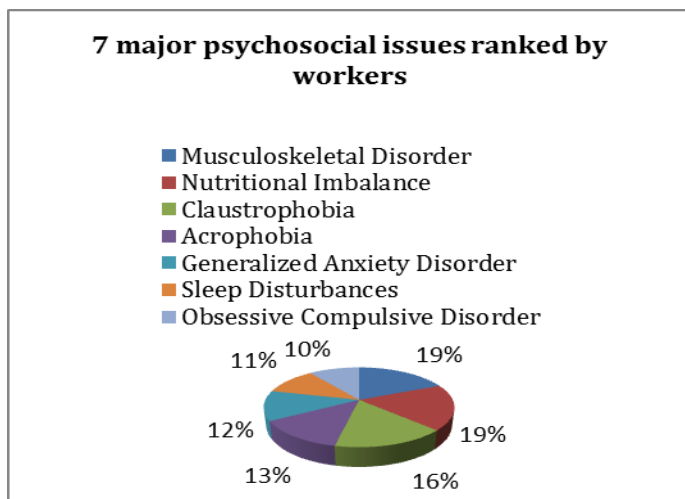


Chart -3: Major ranked psychosocial issues

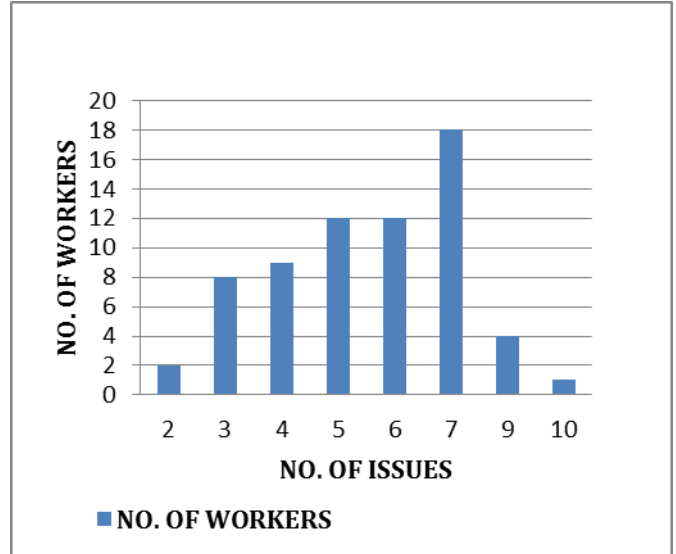


Chart -4: Seven major issues affect more number of workers

9. USING OF PEARSON CORRELATION COEFFICIENT CALCULATOR

This is a type of online calculator where correlation between two issues like, for example psychological(X) and physiological(Y) can be identified and based on the value obtained the remedial measures can be developed .

9.1 BASED ON THE AGE FACTOR OF WORKERS

9.1.1 CORRELATION BETWEEN PSYCHOLOGICAL, PSYCHOLOGICAL, AND SOCIAL

The value of R obtained from correlation calculation are 0.9158,0.9348,0.9564 respectively, hence they form a strong positive correlation and all three issues play a major role in age factors of workers ,mainly the age range between 31 to 40.

So factors such as Overloading of work, improper communication between the workers, improper regular health check-ups, substance abuse during the work, nutritional imbalance in food etc., should be avoided and managed properly for higher productivity and reducing of psychosocial issues.

9.2 BASED ON THE EXPERIENCE OF WORKERS

9.2.1 CORRELATION BETWEEN PSYCHOLOGICAL, PSYCHOLOGICAL, AND SOCIAL

The values of R obtained from the correlation calculation are 0.6851, 0.5548, and 0.7846 respectively and hence they form a moderate positive correlation and strong positive correlation and here psychological and social issues plays major role and physiological plays a moderate role mainly the range of experience between 15 to 18 years.

So to avoid many such type of issues proper monitoring of workers by providing adequate counseling if required, by providing them with good incentives, helping them by providing the essential needs for their families etc.,

10. CONCLUSION

- There are a number of psychosocial issues increasing in the construction sector that affect workers' health and wellbeing. Economic and performance factors are considered to be the most stressful.
- It is important for construction management to have knowledge on the range of factors that have the potential to cause stress. Managers should consider strategies for finding and reducing psychosocial risks.
- In that Musculoskeletal Disorders, Generalized Anxiety Disorders, Substance Abuse Disorders, Acrophobia, and Claustrophobia, Obsessive Compulsive Disorder, and Sleep Disturbance are some of the psychosocial issues which are ranked in top levels by the workers and hence additional importance in reducing these type of issues should be made and adequate treatments for respective disorders should be carried out by the Organization where the workers are working.
- These include raising construction workers awareness of psychosocial issues to promote a culture in which labors actively raise potential stressors to management and putting in place adequate support mechanisms like work design, social support networks and training.

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