International Journal of Advance Research in Science and Engineering
Vol. No. 5, Special Issue No. 01 , May 2016
www.ijarse.com
IJARSE
ISSN 2319 - 8354

IDENTIFICATION OF HEALTH BEHAVIOUR FACTORS OF WORKERS INFLUENCING IN CONSTRUCTION PROJECT

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ABSTRACT

In general, productivity is one of the main aspects in the construction sectors. In history of the construction sectors the workers suffer from many health problems in work environment and routine work. Most of the study reviewed that the factors influencing the health behaviour of construction workers as a most critical issues in construction projects. However, In this paper the additional factors are also included based on the recommendation by experts in the construction industry. The study was carried out to identify the health behaviour factors that influence the construction productivity in the Indian construction. The health behaviour factors of the construction workers were identified and analysed for improving the productivity of construction projects. The structure questionnaire was developed and circulated to the project manager, site supervisors, mastery, mason, carpenters, electricians and plumbers and the construction workers for rating their health behaviour using likert's scale (5 points). The questionnaire were consist of six major groups such as physical, lifestyle, social relationship, ergonomic, environmental and maintenance & management factors. Each group having multiple sub-question for evaluating the health behaviour factors of the construction workers. The descriptive statistical approach was carried out to identified the most influencing the health behaviour of the construction workers. This study would help the construction workers to improve the productivity of the construction by enhancing the influencing health behaviour of workers.

Keywords: Health Behaviour,Behaviour Factors, And Improve The Productivity.

I. INTRODUCTION

In Indian construction facing the challenge of the health behaviour factors influencing the construction worker's . About 70-80% of the issues developed in Indian construction like life style related factors, physical factors, psychological factors and etc., Health behaviour factors were affected workers life style and declined the construction productivity. Neverthless, many prevention and intervention measures are still focussed solely on modifying isolated behaviour such as physical inactivity, tobacco use and excessive alcohol consumption. Proper attention would be given to improve the worker's health of construction projects and to prevent causes of construction accident. In a country like India, identifying the health behaviour factors would be focused an most important because of the worker's life save is duty of civil engineering community. Similarly the construction

productivity if also by savings of worker's health increased most of our nation duty. The scope of this work is to present tools that are able to identify the behaviour factors and injury risk exposures as well as able to lead to the prevention or at least a significant reduction of injuries.The purpose of this study was to explore the associations of health behaviour factors at work like such as physical factors,life style related factors,ergonomic factors, environmental factors, social relation factors, and maintenance management in project factors among the construction worker's.

II. BACKGROUND OF THE STUDY

The health behaviour factors are influenced by the social, cultural and physical environments. Positive health behaviours help promote the construction worker's health and prevent accident. The health behaviour factors which affecting the construction worker's will result in declined productivity at construction work. It is an important consequence worker's health problem. Workers in a construction site will be exposed various behaviour such as communication, motivation, decision making and good leadership. The following study was carried out by various author's are following . Petri et al.(2001) says the psychological factors at work were measured by the stress and strain. The original monitor is mainly consist of four dimensions, whereas three dimensions like such as team work, handling stress and self-developement.the three dimension consist of 27 items used on likert scale (5 points) varying from "totally agree" to " totally disagree". The dimension team work reflects social support and work spirit and consist of 12 items.For example " I can rely on my colleagues and trust them" and " We are not a team at work". The stress handling dimension reflects active coping and self-efficasy and consists of seven items like such as "In difficult situation I do not wait the demands of my job".The dimension self-development reflects possibilities for self-fulfillment and consists of eight items. For example "My abilities are full employed" and "I need a new challange".

Van den Berg (2007) says work ability of white-collar workers in commercial services industry was strongly associated with psychological factors at work such as team work, handling in stress, self-development, to a lesser axtent, with stressful life events, lack of physicall health was influenced primarily by life style factors. With respect to work ability, the influenced of unhealthy life style seems more important for older workers,than for their younger colleagues.Among white-collar workers mental and physical were of equal importance to work ability.

Pinchao liao (2014) says communication is vital for construction safety, but how it influences unsafe behaviour in the work-place remains unclear.This study aims to explore the relationships between communication,cognitive failure, and unsafe behaviours in ochinder to clarify those mechanics. We defined communication as management input,worker cognitive failure as process, and actual behaviours as management output. We collected data from three Chinese steel construction crews and utilized experience behaviour sampling and questionnaire surveys to collect project information. Bivariate statistical analyses were conducted to explain how communication affected unsafe behaviour. The result shows that, rather than communication frequency, management communication style was significantly related to worker cognitive failure,specifically,communication style was related to perception of convenience and self-capacity,which could be upstream factors explaining unsafe behaviour at the construction jobsite.

Balkrishna B. Adsul (2011) Says the construction sectors is a booming industry and involves many health behaviours activities. Migrant labour in the industry is susceptible to various health and occupational hazards. The average number of health problem in the construction workers was involved in regular consumers of tobacco and alcohol were respectively 14.65 persent.

Fallon (2006) says the accurate knowledge of the health labour force is of critical importance to health planners and policymakers worldwide. This is because careful,informed decision making is necessary to achieve the right balance between the supply of labour and population health demands, insufficient or in accurate information about the health labour force.s

III. MATERIALS AND METHODS

The research will be identified using source such as academic research journals, dissertations, textbook, articles and the self- interest. The structure questionnaire was consist of six main groups such as the physical factors consist of 11 sub-question, life style factors consist of 9 sub-question,social relation factors consist of 9 sub-question, ergonomics factors consist of 7 sub-question,environmental factors consist of 6 sub-question and maintenanve & management factors consist of 3 sub-question.The survey were conducted among the construction workers totally 100 samples were retrived and analysed in this study. The following tools were used in analysed and evaluate and most influencing factors of health behaviour of the worker's.

IV. RESULT AND DISCUSSION

Table 5.1 Work Progress of Construction Activity (Physical factors)

S.No.	Factors	Mean	SD	Ranks
1.	Manual materials handing (pain from over exertion)	2.49	1.19	9
2.	Repetitive manual tasks, or working Awkward back postures	2.35	1.13	10
3.	Static working postures	2.31	1.11	11
4.	Bending and /or twisting upper body (injury from physical over exertion)	2.76	1.33	5
5.	Heavy equipment handling without training	3.47	1.67	1
6.	Safety materials using not properly	2.84	1.36	3
7.	Carelessness	2.74	1.32	6
8.	Using vibrating machine	2.67	1.28	7
9.	Working in extreme temperature	2.67	1.28	7
10.	Excess vibration (Arms or body from power tools or equipment.)	3.47	1.67	1
11.	Low illumination (working at night work)	2.84	1.36	3

From Table 5.1 Shows the physical factors influencing the construction projects.The physical factors are considerd in overall 11 sub-question. The highest mean value was considered in between above 2.5-5.0 in the physical factors. The physical factors are one of the main factors in the construction work because 90% of factors obtaining more than 2.5 mean values. Among the 11 sub question factors ranking the highest mean value obtained for the following factors " Heavy equipment handling without training and excess viberation tools using (3.47)", and following with that factors "Not in using safety materials and low illumination using in work place (2.84)", "bending/twisting upper body (2.76)", "Carelessness (2.74)", and "Using vibrating machine (2.67)". Hence heavy equipment handling without training , excess viberation tools machine using, safety material are not using , high level ceiling work, carelessness and low level of illumination are the major area should improve to avoid health issues of construction worker's.

Table 5.2 Descriptive statistics for Life style factors

S.No.	Factors	Mean	SD	Ranks
1.	Personal Character	1.96	0.94	6
2.	Obesity and Age	1.96	0.94	6
3.	Migrant Issues	1.71	0.82	9
4.	Job demands and Working-life satisfaction	1.90	0.91	8
5.	Work impairment	2.67	1.28	5
6.	Food	3.47	1.66	1
7.	Water	2.84	1.36	2
8.	Pollution	2.74	1.32	3
9.	Lighting	2.74	1.32	3

From Table 5.2 shows the lifestyle factors influencing the construction projects. The lifestyle factors are considerd in overall 9 factors. The highest mean value was considered in between above 2.5-5.0 in the life style factors significant in the construction workers. The lifestyle factors are one of the main factors in the construction work because 60% of the factors obtaining more than 2.5 mean values. Among the 9 sub question factors ranking the highest mean value obtained for the following factors "food(3.47)", "water (2.84)", "pollution and lighting (2.74)", and "work impairment (2.67)". Hence to provide the basic amenities of the hygienic food, drinking water facilities, control the pollution in surrounding, proper lighting facilities in accomadation area should improve to avoid health issues of construction worker's.

Table 5.3 Descriptive statistics for Social relations factors

S.No.	Factors	Mean	SD	Ranks
1.	Low job security	2.23	1.07	9
2.	Low trust in management	2.65	1.27	3
3.	Lack of control over working hours	2.74	1.32	2
4.	Female worker	2.59	1.24	5
5.	Timing	2.60	1.25	4

6.	Employee fairness	2.55	1.22	6
7.	Work intensifications	2.25	1.08	7
8.	Working place	2.25	1.08	7
9.	Medical facilities are poor	2.96	1.42	1

From Table 5.3 shows the social relation factors influencing the construction projects. The social relation factors are considerd in overall 9 factors. The highest mean value was considered in between above 2.5-5.0 in the life style factors significant in the construction workers. The social relation factors are one of the main factors in the construction work because 50% of the factors obtaining more than 2.5 mean values. Among the 9 sub question factors ranking the highest mean value obtained for the following factors "medical facilities are poor (2.96)", "lack of control over working hours (2.74)", "Low trust in management (2.65)", "timing (2.60)", "Female worker (2.59)", and 'employee fairness (2.55)". Hence to focused most important of the social relation factors in the construction worker's. Among the social relation factors should be created good relationship and developing the bond level of the of both side in construction worker's and construction projects.

Table 5.4 Descriptive statistics for Ergonomic factors

S.No.	Factors	Mean	SD	Ranks
1.	Heavy, frequent or awkward lifting	2.28	1.09	7
2.	Repetitive tasks	2.35	1.13	5
3.	Awkward grips, postures	2.31	1.11	6
4.	Using excessive force over exertion	2.52	1.21	4
5.	Using wrong tools	2.57	1.23	2
6.	Hand intensive work	2.61	1.25	1
7.	Using improperly maintained tools	2.49	1.20	3

From Table 5.4 shows the ergonomic factors influencing the construction projects. The ergonomic of factors are considerd in overall 7 factors. The highest mean value was considered in between above 2.5-5.0 in the ergonomic factors significant in the construction worker's. The ergonomic factors are one of the main factors in the construction worker's because 50% of the factors obtaining more than 2.5 mean values. Among the 7 sub questions factors ranking the hieghest mean value obtained for the following factors "The hand intensive work (2.61)", "using raw materials (2.57)", "using improperly maintained tools (2.49)", using excessive force over exertion (2.52)", Hence the ergonomic factors to focused most important because their factors should be avoided unnecessary work, keep the time control and improve the working progress in the costruction projects.

Table 5.5 Descriptive statistics for Environmental factors

S.No.	Factors	Mean	SD	Ranks
1.	Humidity	1.64	0.78	2
2.	Noise	1.65	0.80	1
3.	Odour	1.53	0.73	6

4.	Irritation	1.63	0.82	3
5.	Emission of gases	1.55	0.78	5
6.	Outdoor pollution	1.59	0.85	4

From Table 5.5 shows the environmental factors influencing the construction projects. The environmental factors are considerd in overall 6 factors. The highest mean value was considered in between above 2.5-5.0 in the environmental factors is not influencing and affecting the construction worker's.The environmental factors are one of the main factors in the construction worker's because their factors should be affected the workers skin, lungs and breathing problem directly. Among the construction should be focused and given the importance in the working side for the purpose of avoid the unhealthy problem of the construction worker's.

Table 5.6 Descriptive statistics for Maintenance and management factors

S.No.	Factors	Mean	SD	Ranks
1.	Poorly maintained in building fabric, system and controls	1.86	1.04	3
2.	Cleanliness routine	1.98	1.10	1
3.	General office hygiene	1.90	1.08	2

From Table 5.6 shows the maintenance and management factors influencing the constrction worker's. The maintenance and management factors are considerd are in overall 3 factors.The highest mean value was considerd in between above 2.5-5.0 in the maintenance and management factors is not influencing and affecting in the costruction projects. Among their factors should be considerd and focused most important because this factors to improve the worker's health and avoid the wastage material in the construction side.

V. CONCLUSION AND RECOMMENDATION

The physical factors influencing the majority of the factors in the construction projects like " Heavy equipment handling without training and excess viberation tools using", "Not in using safety materials and low illumination using in work place", "bending/twisting upper body", "Carelessness", and "Using vibrating machine". Hence the construction sectors to avoid heavy equipment handling without training and excess viberation tools machine using. Proper training would to develop the construction productivity and improve the worker's life style. Strictly followed the safety rules and regulation and encouraging wear the safety material in working conditions. Wear the Safety materials would to prevent the causes of construction accident and reduced the injury level in worker's side. To provide the proper scaffolding arrangements in high level ceiling work in construction because the improper arrangements of the scaffolding work should be create the accident. To avoid carelessness and provide the lighting facilities in low level of illumination of working areas.

The lifestyle factors influencing the majority of the factors in the construction projects like food, water, pollution and lighting and work impairment. Among the basic needs of amenities should be provided must in the construction sectors because their factors would affect the worker's health. The construction sectors to provide the foods in proper time and give the drinking water in site because food and water is the basic needs.Otherwise

the company is not take care of this issues suffering the worker's health directly and declined the efficiency of productivity outcome sourses. However the lighting facility arrangements are one of the major problem in the construction side because to prevent causes of the accident in construction areas. To avoid partiality of the movement in working side. The impairement of working condition should be affected inner mind of worker's level. Particularly in this factors not create the confidence level inbetween employee and employers.Their factors should be developed job security and peace full of life style.

The social relation factors influencing the majority of the factors like the Poor Medical facilities, Lack of control over working hours, Low trust in management, timing, Female worker, and employee fairness. So the Medical facilities and incentives were provided to be a must. It has increased the good health in working conditions and increased the productivity of the construction industry.

The ergonomic factors influencing the majority of the following factors like the intensive hand work, Using raw materials, using improperly maintained tools, using excessive force over exertion, Repetitive tasks, awkward grips postures and heavy, frequent or awkward lifting. Therefore, these factors have overcome to increase quality and better productivity of construction. These factors have overcome to increase the economics, increase the construction productivity and increase the time and financial control management. The works related illnesses of factors have identified in the worker's level of health conditions and affecting productivity outcome in constructions.

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