

**EFFECTIVENESS OF HEALTH PROMOTION PROGRAMS IN
ESTABLISHING A POSITIVE HEALTH AND SAFETY CULTURE**

(A case study approach to Oil and Gas Construction Projects, Abu Dhabi)

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ABSTRACT:- Workplace Health Promotion Programs have proven to be a successful strategy for improving health of employees, productivity, safety and quality of work environment. The aim of this study was to evaluate the effectiveness of existing health promotion programs compared with usual care of employees to establish a positive health and safety culture in a leading oil and gas construction company in Abu Dhabi. To achieve this objective, the study adopted qualitative and quantitative approaches by collecting 3 years statistical and numerical baseline data to analyze the effect of intervention of health promotion programs. An online survey and face to face interview were conducted to collect feedback from employees on their perception of health promotion programs and benefits of existing plan. The study found that workplace health promotion programs contributed to the health and fitness of the employees, reduced illness and injuries, reduced absenteeism, improved safety performance and made people more productive. This generally increased the morale and satisfaction of employees of the organization. The study recommended that organization need to improve on stress management and ergonomic awareness, implement motivation schemes for employee involvement, and enhance effective communication.

Keywords: Health promotion programs, health and safety culture, Oil & Gas

1. INTRODUCTION

Construction workers can be exposed to many risk factors during their working life and they therefore face an increased risk of developing health problems. Workers in the Oil & Gas construction industry are often exposed to physically demanding work tasks, extreme weather conditions and stressful environment. Health problems related to lifestyle have become increasingly prominent, and the importance of health promotion in the workplace is more widely recognized. A high number of young male migrant workers from South Asia are developing hypertension, obesity and cardiac problems after adopting UAE lifestyle and 75% of them unaware of their poor health condition because of lack of regular health checks; finds study (Khaleej Times, UAE February 25, 2016). Chronic diseases can lead to a decline in the overall health of employees in a workplace, contribute to an increase in health-related expenses for employers and employees, and lead to lower productivity and/or days of work missed. Many organizations have realized the benefits of health promotion program (HPP), and to curb the costs of rising health care offer workplace health programs to their employees. Ideally, the workplace should be a place protecting the safety and well-being of employees while providing them with opportunities for better long-term health.

Case Selection

The case study was conducted on three Oil & Gas Engineering, Procurement and Construction (EPC) projects of a major Contracting Company to better understand how workplace health promotion programs are implemented, how participating employees view such programs and benefits of the program to the employees and organizations. Due to the sensitivity of the data being collected and its implications, the Contracting Company in Abu Dhabi being used in this case study will be hereinafter referred to as 'Company XYZ'

The company integrated HPP into health and safety training programs to complement the prevention of occupational accidents and diseases and the improvement of the working environment. The effective implementation of HPP has been monitored and reviewed by the Client for the last three years as part of Contractor's HSE Assurance Program. Company

XYZ has developed and implemented a number of good workplace health promotion initiatives to assist their employees such as:

- Health screening as per client requirement for all employees prior to start working in oil field and periodical medicals as per guidelines.
- Annual medical camps, health check-up and health seminars on healthy food habits, personal hygiene etc. in associated with major hospitals in the country.
- Awareness sessions on alcohol, smoking cessation and weight reduction program.
- Training on ergonomic safety and food safety awareness.
- Communication of health topics through monthly newsletters.
- Regular monitoring of blood pressure, sugar level and cholesterol.
- Stress Management Training.
- Weight reduction programs.
- Heat stress awareness trainings and campaigns.
- 24x7 functional Clinic with Male Nurses
- Recreation & gym facility

Objective of the Study

The main objective of this study was to evaluate the effectiveness of health promotion programs compared with usual care of construction workers in Company XYZ to establish a positive health and safety culture. The case study constituted a detailed review that identifies and critically examines the evidence base health and wellbeing programs conducted in the workplace and their impact on the employees and the organization.

2. METHODOLOGY:

Research Design

This study employed both qualitative and quantitative approaches to gather data.

The research design and methodology consist of following strategies:

- Review of all critical health and safety statistical data (period of three years)
- Online survey for staff to assess their perception on HPP and its benefits.
- Face to face interview of randomly selected workers from project sites.
- Data analysis and presentation for evaluating the effectiveness, identifying gaps and communicating results.

Target population & Sample Size

The target population of this study was the staff and workers engaged in three main EPC projects of the contracting company. Responses were received from staff and workers from various departments. A sample of 140 respondents (16% of the target population including 78 staff and 62 workers) were drawn from the possible 854 target population using survey and face to face interview which gave each item in the population an equal probability of being selected. The sample was divided into two groups, staff and workers; staffs include Managers, Engineers, Supervisors and job Performers from various departments, and workers from different technical disciplines.

Data Collection

The researcher used health and safety statistics reports of the study period, and questionnaires for survey and interview as tools to collect required data.

Health & safety data collected from 2014 to 2016 (study period in which effective implementation of HPP was initiated) and analyzed to identify trends. Statistics of 2014 was considered as primary data; whereas data of 2015-2016 was considered as secondary data for the analysis.

An online survey was conducted to assess the perception of employees on HPP and how effective is ongoing practices. A questionnaire developed and forwarded to 100 staff (out of 122) through interoffice mail system requesting their

participation in the survey. Feedback from 78 staff was received with few recommendations for improvement. Data received then used for preparing tables and charts for analysis.

A face to face interview was administered to randomly selected workers as they were perceived by the researcher to be more experienced in realizing the benefits and drawbacks of HPP at site level. The researcher constructed guiding questions which led the interview to extract more information relevant to the study

Data Analysis & Presentation

Microsoft Application was used for data analysis in the course of the study. Data has been presented in tables, charts, graphs, and other graphical presentations, for ease of understanding and analysis.

The basic steps in the analytical process consists of identifying the issues, determining availability of suitable data, deciding trends, applying the methods and evaluating, summarizing and communicating the result.

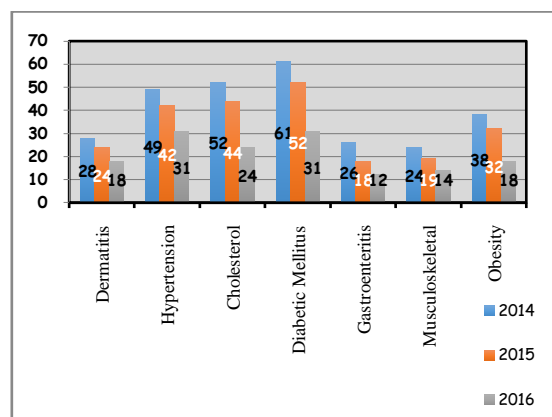
3. RESULTS & DISCUSSION

Health & Safety Statistical Analysis

Analysis of all critical health and safety statistical data shows that effective implementation of HPP can demonstrate positive changes in health and safety culture of the organization.

The documents reviewed are: monthly health statistics, injury/illness report, employee absence records, safety statistics, manpower history and list of smokers, daily progress report, medical/health monitoring records, first aid & hospitalization cases , medical claim and HSE audit reports.

Cases of ill-health issues such as dermatitis, hypertension, high cholesterol, diabetic mellitus, gastroenteritis, musculoskeletal disorders and obesity were reduced significantly in the review period (2014-2016). The reduced rates of injury and illness resulted in reduced absenteeism and medical care cost and thus increased employee morale and productivity. This analysis found that employee health education, physical activity interventions, changing workplace environment could lead to moderate improvement in employee health



A total of 148 ill-health issues were reported and addressed in 2016 where as the number of cases in 2014 and 2015 were 278 and 231 respectively (as per the health statistics)

Reviewing the record of smokers indicates that workplace health promotion programs could encourage employees to reduce or drop smoking habits. Organization has conducted many awareness programs, group/individual counseling and campaigns on smoking and alcohol cessation. The number of smokers reduced to 9% (2016) from 12 % (2014) indicates the benefits of HPP in changing perception and behavior of employees.

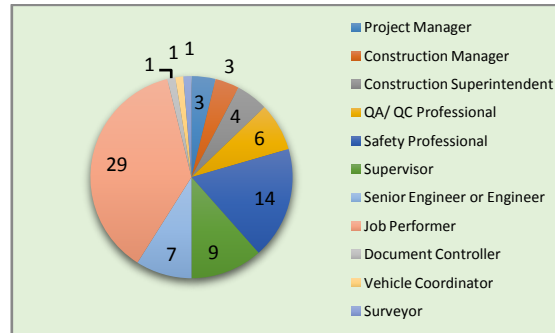
Organization maintained a positive safety culture during the review period achieving 8.3 million cumulative man-hours without an LTI. First aid injury cases dropped to 7 in 2016 compared with 14 in 2014. Vehicle accident and property

damage cases dropped to 'zero' compared to 3 accidents and 2 property damage cases in 2014. Worker's compensation costs and hospital admission rate per employee dropped and the company achieved 32% decrease in sickness absence. Non compliance to HSE requirements dropped to 2 in 2016 from 10 in 2014.

Results of Survey Responses

The survey could gather general information about 78 participants, their perception on health promotion programs and provided with data as evidence of effectiveness of existing programs.

Employees from various departments were participated in the survey where 'Job Performer' has the highest value of the series with 37.25% (29).



Age of participants was categorized into five groups such as 20-29, 30-39, 40-49, 50-59 and > 60 years. Employees from the age group of 30-39 years found highest in numbers 35 (44.9 %) and no one was in above 60 group. This indicates the majority of young employees in the contracting company executing Oil and Gas construction jobs. 38.5% (30) respondents found with Oil & Gas construction experience between 5-10 years and 34.6 % (27) employees with less than 5 years experience. 12.8 % (10) of participants marked that they are with excellent health condition, 76.9 % (60) are with good health and 10.3 % (8) with moderate health. 25.6 % (20) were very active at worksite, 71.8 % (56) are active and only 2.5 % (2) mentioned that they are less active at site.

All employees responded positively to the statement that implementing workplace health promotion programs can result in increased productivity and profits where 38 participants 'strongly agreed' and 40 participants 'agreed' with this. 60.3 % (47) agreed and 39.7 % (31) strongly agreed that HPPs are important to any organization to reduce the cost and absenteeism. 56 respondents strongly agreed and 22 agreed that HPPs are effective in reducing accidents and improving safety performance. 34 respondents were 'very satisfied' and 50 were 'satisfied', where as 4 people were 'neither satisfied' nor dissatisfied on communication of risk by the employer.

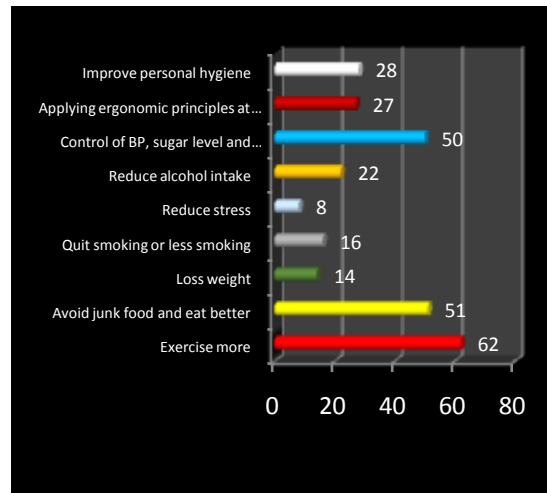
Company XYZ has implemented a number of good workplace health promotion programs in association with client to motivate their employees to choose healthier behaviors and to ensure they are always fit to work.

The survey responses show that pre-employment & periodical medicals, heat stress awareness campaign, medical camp & health seminar, awareness session on smoking alcohol cessation, and regular monitoring of blood pressure, sugar level & cholesterol are the events found most effective in the workplace. However stress management, weight reduction program, communication of health topics through monthly newsletter and ergonomic training (manual handling) programs found less effective.

76.9 % of the participants indicated that they have been involved in identifying risks to health present in workplace. 52 members believed that 'lifestyle' is the key determinant factor that influence a person's health whereas 15 people indicated that 'genetics' as key factor.

Organization uses variety of mediums to communicate information regarding HPP at worksite. Meetings, E-mails and interoffice letters / circulars and newsletters found very effective means for communicating health and safety matters to employees.

96.2 % (75) participants stated that they have changed their lifestyle as a result of HPP interventions to improve or maintain their health. Only 3.8% (3) responded that they couldn't take any initiatives. 79.5% (62) indicated that they have started exercising more, 65.4 % (51) avoided junk food and started eating healthy diet, 64.1% (50) controlled blood pressure, sugar level and cholesterol through regular monitoring and exercise, 2.5% (16) reduced or quit smoking and 28.2% (22) reduced alcohol intake.



Majority of the participants (82.1%) marked that 'time constraints in the workplace' is the main barrier in undertaking and participating in HPP at worksites. 38.5% (38) indicated 'lack of interest among employees' and 21.8% (17) indicated 'lack of information/ awareness about such programs'.

Employees were asked to provide their recommendation to upgrade HPP, where 22 employees responded with their suggestions for improving the existing program though it was not a mandatory question.

Results of Worker's Interview

Face to face interview conducted for randomly selected 62 workers from three project sites of Company XYZ. A semi-structured questionnaire was used for interviewing workers by explaining them in regional languages as most of them have primary or high school qualifications.

Employees are working with various departments and are from India, Pakistan, Nepal and Bangladesh. Majority of the employees are with an experience of 5-10 years in oil and gas construction and all the employees interviewed were stated that HPP are effective in reducing accidents and improving safety performance at site. 56 employees attended health promotion programs and 6 were not attended any of such programs. Greater number of them received training on heat stress awareness, smoking & alcohol cessation and food safety awareness. Participation on stress management and ergonomic trainings were found less compared to other training programs.

13 workers confirmed that they are with 'Excellent' health condition and 42 with 'good' status, only 3 marked that they are 'poor' in health condition. 12 workers strongly agreed that the general and occupational health risks are adequately addressed by existing HPP whereas 42 workers agreed and 2 disagreed with the same. 59(95%) employees responded positively stating that there are significant changes in workforce's health since the introduction of HPP at worksites. Knowledge level on healthy diet and food habits shows 3 employees with 'excellent', 35 with 'good' and 22 with 'moderate' knowledge; however 2 employees disclosed that they have poor knowledge in this subject. 12 employees informed that the communication about HPP in the organization is effective and good, and for 42 employees it is moderately effective. 6 employees declared that the communication is not effective and need improvement.

3. CONCLUSION & RECOMMENDATIONS

The analysis of health and safety statistics of the review period concluded that workplace health promotion interventions have positive effects with regard to behavioral risk factors, health risk factors, productivity, sickness absence and safety performance of the organization

Conclusion

Implementation of health promotion programs in Company XYZ created conditions that support and teach the best possible health for their employees. This has given employees a sense of ownership and they learned to work together to form a coordinated action to improve well being. Areas such as health promotion, heart health, nutrition, fitness, back care, recreation, tobacco and alcohol awareness and workplace safety where health promotion in the workplace found very effective. Wellness programs were generally more focused on prevention which facilitates a proactive approach to healthcare. This, in turn, led to an overall decrease in injury or illness rate, health care costs and sickness absence. Support from clinic in disease management, health education and health maintenance were all crucial in creating a solid wellness foundation within the organization.

Recommendations

The Organization could reap the benefits of workplace health promotion via healthier employees, reduced absenteeism, increased productivity & safety performance, a boost in morale, and reduced health care costs; however the study identified few gaps in the existing HPP and established recommendations for improvement.

a. Stress Management

Respondents identified stress due to nature of work is one of key factors affecting their health in the Oil & Gas construction environment and the existing wellness promotion programs are not adequately addressing workplace stress. The study recommended to conduct Stress Management workshops by experts to educate employees with many techniques to help them better cope with stress. The workshop should include a variety of coping techniques, some of which include yoga, briefing, meditation, etc. These techniques relax stressed individuals by helping to rebalance body and mind.

b. Ergonomic Awareness Sessions

Workers in the Oil & Gas construction sector are often exposed to physically demanding work tasks which increase the risks of musculoskeletal disorders (MSDs) among employees. Company XYZ has been conducting periodical awareness sessions on manual handling, but many of the workers were unaware of ergonomic hazards associated with their job and don't know how to apply work practices and tools/devices to reduce ergonomic risk at their workstations and tasks. The organization needs to improve trainings on ergonomic awareness and ensure employees are able to identify potential ergonomic issues in their workplace and to adjust the workplace to control the issues to avoid or reduce MSDs.

c. Communication Plan

The study identified gaps in existing communication plan of health promotion programs as employees were not informed in advance about HPP, language barrier for workers since most of the communications are in English and most of the employees have limited access to company intranet.

Organization must communicate and market your workplace health promotion program to increase employee awareness and drive maximum participation. Some changes in existing methods can be used to drive employee awareness and participation:

- Involve employees in the planning and implementation process;
- Enroll the senior management representative to encourage participation;
- Use multi language posters, bulletin boards, and company newsletters.
- Information should reach to all one week in advance
- Motivational schemes to encourage maximum participation
- Keep it simple and easy by making activities easy to sign up for and participate in.

d. Motivation Scheme

The study recommended company XYZ to develop and implement incentive scheme to encourage employee participation in HPP and to reward employees who follow instruction and make positive changes in their health condition (e.g. smoking cessation).

e. Welfare Issues

Organization needs to address following welfare issues as recommended by employees during survey and interview.

- A Program Coordinator shall be appointed to coordinate, communicate and follow-up all health promotion activities. This Coordinator shall also be responsible for coordinating Welfare Committee to fulfill all welfare requirements in timely manner. Need to change existing welfare committee by including worker's representatives from various departments and nationalities.
- Company has to purchase equipment with advanced technology for both staff's and worker's gymnasiums as most of the equipments available are in damaged condition and are of old technology.
- Workers suggested improving the quality of food in Worker's mess by changing the menu, including more fruits and variety of dishes.
- Company has to ensure the air conditioners inside accommodation cabins are serviced and maintained as per schedule. Ensure all ice making machines are functional to provide adequate cool drinking water at site during summer.
- Ensure adequate rest breaks (as per TWL guidelines) and electrolytes are given to employees during summer.

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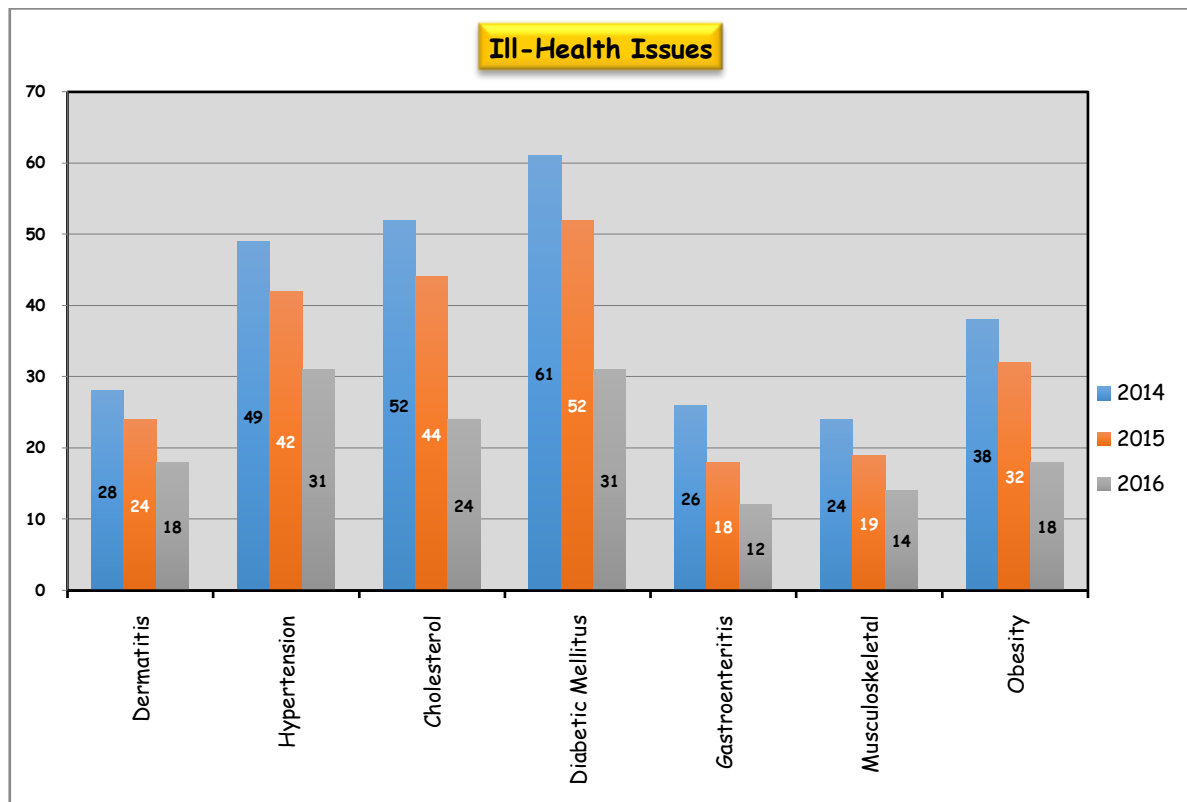
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TABLES & FIGURES

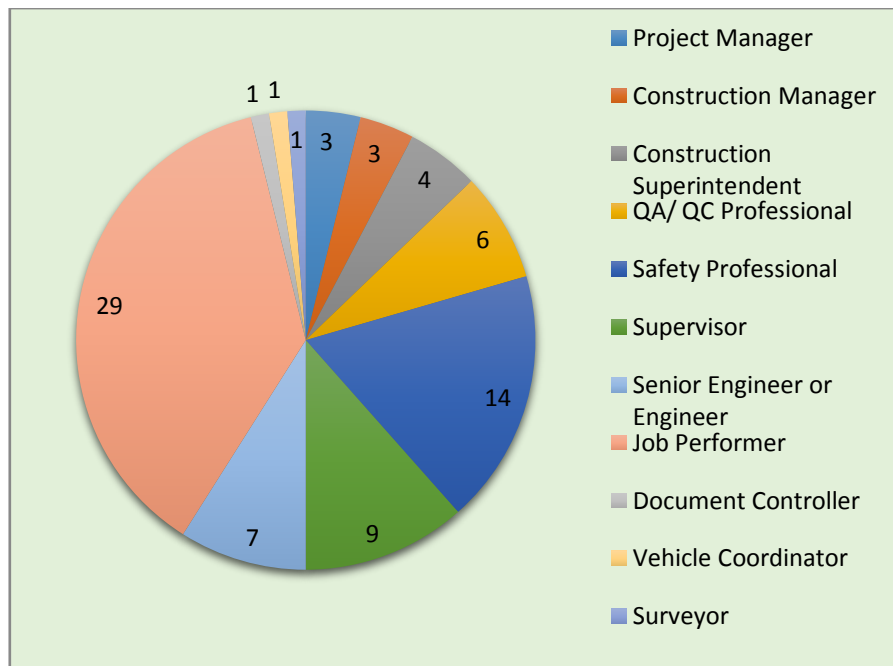
1. Ill-Health Issues

Health issues	2014	2015	2016
Dermatitis	28	24	18
Hypertension	49	42	31
Cholesterol	52	44	24
Diabetic Mellitus	61	52	31
Gastroenteritis	26	18	12
Musculoskeletal	24	19	14
Obesity	38	32	18
Total Manpower	790	842	858



2. Role of Survey Respondents

Role	Numbers
Project Manager	3
Construction Manager	3
Construction Superintendent	4
QA/ QC Professional	6
Safety Professional	14
Supervisor	9
Senior Engineer or Engineer	7
Job Performer	29
Document Controller	1
Vehicle Coordinator	1
Surveyor	1



3. Changes Made to Improve or Maintain Health

Activity	Numbers
Exercise more	62
Avoid junk food and eat better	51
Loss weight	14
Quit smoking or less smoking	16
Reduce stress	8
Reduce alcohol intake	22
Control of BP, sugar level and cholesterol	50
Applying ergonomic principles at work	27
Improve personal hygiene	28

