ASSESSING THE PROVISION OF OCCUPATIONAL HEALTH SERVICES IN LEADING CONSTRUCTION COMPANY OF PAKISTAN & ASIA

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INTRODUCTION

Occupational health services (OHS) are unequally distributed, with great variations between countries. In developing regions, the coverage by employee health services ranges from 5 to 10% at best. Even in countries where coverage rates are high, there are still gaps, with small-scale enterprises, construction, agri-culture and certain mobile workers and the self-employed being under-served (Rantanen and Fedotov, 1998).

In the U.S. there were 1,225 fatal occupational injuries in the construction sector in 2001 with an incidence rate of 13.3 per 100,000 employed workers (BLS, 2002 (a)). For the same year the construction industry experienced 481,400 nonfatal injuries and illnesses at a rate of 7.9 per 100 full-time workers in the industry (BLS, 2002 (b)). Construction has about 6% of U.S. workers, but 20% of the fatalities - the largest number of fatalities reported for any industry sector (NIOSH, 2007). The problem is not that the hazards and risks are unknown, it is that they are very difficult to control in a constantly changing work environment. Under European Union Law, there are European Union Directives in place to protect workers, notably Directive 89/391 (the Framework Directive) and Directive 92/57 (the Temporary and Mobile Sites Directive). This legislation is transposed into the Member States and places requirements on employers (and others) to assess and protect workers' health and safety. In the United States the Occupational Safety and Health Administration (OSHA) sets and enforces standards concerning workplace safety and health.

Due to rapid increase in growth of population of Pakistan and globalization of trade, scarcity of living places is one of the major issues in Pakistan and all over the globe. In real estate sector in Pakistan many companies are in operation. One of the leading real estate developers of Pakistan and Asia is Bahria Town. Many organizations are practicing unfair labor and environmental health and safety conditions in developed world.

METHODOLOGY

A bench study followed by a detailed field survey on leading construction establishment (Bahria Town) of Pakistan was carried out. The selected establishment was sent first letter of introduction, informing them of the forthcoming interview and field visit. Telephonic interview was taken from a structured checklist prepared for this purpose a week after dispatch of letter. The respondent was the General Manager of the construction company. The checklist was based on the recommendations on OHS of the International Labour Organization. According to recommendations of ILO (Occupational Safety and Health Statistics Bulletin, 2001), OHS ILO has five main functions:

1. Surveillance of the working environment
2. Surveillance of the health of workers
3. Information, education, training and advice
4. First aid, treatment and health programmers
5. Other functions

The functions of OHS were grouped under four categories in the current study, according to the situation of construction establishment s in Pakistan and the comparing establishments of Hong Kong.

A. Surveillance of the working environment

i. Identification and evaluation of the environmental factors that might affect the workers' health
ii. Supervision and provision of personal protective equipment

B. Surveillance of the health of workers

i. Health assessment of workers before their assignment to specific tasks that might involve a danger to their health or that of others
ii. Health assessment at periodic intervals during employment that involved exposures to particular hazards to health
iii. Health assessment after the termination of assignments involving hazards that might cause or contribute to future health impairment
iv. Health assessment on resumption of work after a prolonged absence for health reasons to determine the worker's suitability for the job and needs for reassignment and rehabilitation

C. Information, education, training and advice

i. Health and safety education
ii. Job and safety training

D. First aid, treatment and health programmers

i. Provision of curative medical services.
ii. Provision of first aid services and first aid personnel.
iii. Keeping records and statistics on illnesses and injuries

TABLE 1: Components of Occupational health services and the score allocation (maximum score: 100)

Components and Items	Scores	Components and Items	Scores	Components and Items	Scores	Components and Items	Scores
Surveillance of the working environment	440	**Surveillance of the health of workers**	30	**Education and Training**	20	**Curative services and record Keeping**	10
Frequency of Assesment	12	**Pre-Employment Check Up**	**12**	**Frequency of Talks**	**8**	**Curative medical services**	**2**
At the start of work	*4*	*General*	*3*	*Weekly*	*8*	**first aid services**	**2**
Regualr	*12*	*Chest X-Ray*	*3*	*Monthly*	*4*	**first aid personnel (F.A.P)**	**3**
Change of Work process	*8*	*Audiometery*	*3*	*Others*	*2*	Employee/F.A.P.≤100	3
Type of Assesment	12	*Spirometry*	*3*	**Provision of Job Training**	**6**	Employee/F.A.P.>100	1
Dust	*4*	*Others*	*1*	*CITA*	*4*	**Compiling Statistics**	**3**
Noise	*4*	**Periodic Check-up**	**12**	*In-house*	*2*		
Chemicals	*4*	*Chest X-Ray*	*3*	*Both*	*6*		
Providing PPE for Hazards	6	*Audiometery*	*3*	*Others*	*1*		
Height	*1*	*Spirometry*	*3*	**Provision of Safety Training**	**6**		
Hands	*1*	*Others*	*1*				
Eyes	*1*	*Special (Blood test)*	*3*				
Dust	*1*	**Return-to-Work Check-up**	**3**				
Noise	*1*	**Pre-retirement Checkup**	**3**				
Feet	*1*						
Supervising PPE	10						
Distribution	*3*						
Instruction	*4*						
Maintenance	*3*						

The provision OHS in construction establishment was measured on scores for individual components of OHS. All these various components were given scores weighted for their contribution in prevention of occupational illness, taken from previous research made by a panel of occupational experts. The maximum score for the establishment was 100.

The four major components of OHS and the items included under each in the current study followed by scores are depicted in Table 1. The score of construction establishment of Pakistan was compared with the mean scores of comparing large construction establishments of Hong Kong.

RESULTS AND DISCUSSIONS

The scores obtained by the construction establishment of Pakistan were concluded in Table 2. Construction establishment of Pakistan lack OHS provision in its all components. Surveys on OHS in different industries and different countries have been reported (Isah *et al .,*1996). Researchers used different definition and tools for surveys according to their methodology and area. A study on National Health Service (NHS) OHS in England and Wales used medical staffing rather than the service content for measuring the provision (Hughes *et al.,* 1999). Standardize approach for provision of OHS lacks which do not facilitate comparison of studies. (Bratveit *et al.,* 2001) attempted to use ILO recommendation as standard for comparison of activity profiles OHS at different locations of multinational companies found this approach to be useful. Bahria Town construction company has >1500 employed workers by virtue of this they fall in large establishment in terms of construction. Among this nearly >90% of the employed workers were male and <10% of them were female with mean age of 40 years. Among the employed workers only 30% were hired on contract base job for a period of 5 years whereas 70% were on daily wages. The contract employed workers have access to medical facility of Bahria Town in shape of small type Hospital function in jurisdiction of its own area.

There were very low scores observed for performing environmental assessments and other individual components of surveillance of working environment. The overall score for surveillance of working environment obtained by establishment of Pakistan was 7.5 which is far too low than the compared large construction establishments of Hong Kong i.e. (23.6).

Surveillance of the health of workers and its various individual components also showed similar results if provision of Surveillance of the health of workers to overall employed workers (Contract base and work charge) is considered, but contract employed workers had easy access to this component of OHS. The overall score after uniting both contract and work charge employed workers were 1.0 on the other hand the mean score for large construction establishments of Hong Kong was 3.2 which is also very low according to International Standards of OHS.

The provision of education and training to the employed workers either work charged or contract employed was very bad and below satisfaction. The trainings were given only to some operators of heavy machinery and site engineers which is an in-house training mostly covering the basics regarding to their job not Occupation health and safety. Bahria town obtained low sore of 3.1 for education and training whereas the comparing large establishments scored 12.3.

The medical services were rarely provided at the construction site. The imported heavy machinery contained first aid box but they were never opened and updated for emergency use. In office of site engineers, fully equipped first aid box was maintained but no record was found regarding accidents.

The overall mean scores for all four components were < 25% for the study under discussion and were < 50% for comparing establishments of Hong Kong.

It was observed that the larger International establishments have better provision of OHS as this is easy and much under financial scale according to the growth of their company. With reference to the overall score it is depicted that the entire establishments one under study and others with whom the scores are compared are below satisfaction for which many reasons and limited factors were noted, with provision of these identified limited factors better provision of OHS can be mandatory.

The findings confirmed after comparison with International establishments that OHS in construction Industry is usually under-served (Rantanen and Fedotov, 1998). Financial implication that includes increased health care cost was one of the major factors for provision of OHS in Pakistan, this contradicts with the comparing establishments of Hong Kong.

It is concluded that the provision of OHS in Pakistan is below satisfactory level in construction industry to the employees which is same when compared to the construction establishments of Hong Kong. The lack of OHS becomes a probable reason for high rates of injuries, causalities and other occupational illnesses.

TABLE 2. Provision of OHS measured by scores for under study establishment and Compared International establishment

Components of Services	Maximum Score	Establishment of Pakistan	Mean scores of Comparing Large Establishments of Honking
Surveillance of the working environment	40	7.5	23.6
Surveillance of the health of workers	30	0.4	3.2
Education and Training	20	3.1	12.3
Curative services and record Keeping	10	1	5.7
Overall Scores	100	12	44.8

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Annexure I

Checklist for Construction Company

EXCAVATIONS			
Do excavations of all types have barricading and hand railing of substantial materials so as to prevent persons from failing into them?	Yes	No	N/A
Are excavations or trenches exceeding 1.5 metres have shoring to walls and faces or as stipulated by regulations?	Yes	No	N/A
Is ladder access provided to and from ALL excavations and trenches?	Yes	No	N/A
POWER TOOLS			
Do power saws, grinders and other power tools have proper guards in place at all times and be protected at all times by an ELCB unit?	Yes	No	N/A
Are cords and hoses placed so as not to create a tripping hazard, or be subjected to damage from equipment or materials?	Yes	No	N/A
Are these equipments repaired by licensed electrician only?	Yes	No	N/A
Are these equipments tested as per the relevant regulations?	Yes	No	N/A
COMPRESSED AIR			
Are airlines and tools checked before use, are all hose connections fasten securely?	Yes	No	N/A
GUARD RAILS			
Are all openings in the ground and all penetrations in floors fitted with guard rails or handrails?	Yes	No	N/A
Are barriers removed to carry out work replaced before leaving the area?	Yes	No	N/A
LADDERS			
Are all ladders inspected for damage before using?	Yes	No	N/A
Are wooden ladders painted?	Yes	No	N/A
Are damaged ladders being used under any circumstances?	Yes	No	N/A
Are ladders being soundly constructed, long enough for the job and secured at the top and/or bottom?	Yes	No	N/A
Are ladders set at the correct angle of 1 in 4 before climbing?	Yes	No	N/A
Are tools being carried in workers hands when climbing up or down?	Yes	No	N/A
Are metal ladders used adjacent to suspended electrical conductors?	Yes	No	N/A
Do workers clean mud and grease off footwear before using ladders?	Yes	No	N/A

Do workers face the ladder when climbing and use both hands to hang on?	Yes	No	N/A
Does the ladder is long enough to do the job and protruded at least one metre above the work platform or landing platform?	Yes	No	N/A
ACCIDENT REPORTING			
Are all accidents on the site reported?	Yes	No	N/A
INJURY REPORTING			
Do all injuries reported to the first-aid attendant/foreman for treatment and recording?	Yes	No	N/A
CHEMICALS and FIBRE-BASED PRODUCTS			
Do all chemicals and fibre-based substances introduced to site being used unless accompanied by a Materials Safety Data Sheet (MSDS)?	Yes	No	N/A
PERSONS FALLING			
Do slippery boards on scaffolds and walkways, missing guardrails, openings in floors and penetrations are correctly protected?	Yes	No	N/A
Are all openings or missing railings reported so they can be protected?	Yes	No	N/A
SAFETY HELMETS			
Are safety helmets provided to workers and they wear it?	Yes	No	N/A
ELECTRICAL			
Does a qualified electrician carry out all repairs to electrical equipment and electrical installations?	Yes	No	N/A
Do electrical leads are kept off the ground and on stands?	Yes	No	N/A
Do leads are hanged from scaffolding?	Yes	No	N/A
The use of double adaptors and 'piggy back' fittings are permitted on any site?	Yes	No	N/A
Does electrical leads and equipment checked in accordance with appropriate regulations and codes of practice?	Yes	No	N/A
Does during inclement weather, covers provided for equipment exposed to the elements?	Yes	No	N/A
EXPLOSIVE-POWERED TOOLS			
Are only trained persons allowed to use explosive-powered tools?	Yes	No	N/A
Do the workers wear safety glasses and hearing protection?	Yes	No	N/A
Do signs placed in the area of operation of this equipment?	Yes	No	N/A
Do the tools left in loaded condition?	Yes	No	N/A

Do all explosive-powered tools inspected and maintained on a regular basis? (Complying with relevant regulations.)	Yes	No	N/A
Does the tools locked away when not in use?	Yes	No	N/A
ADJUSTABLE PROPS			
Do the unauthorized alterations to adjustable props are allowed?	Yes	No	N/A
SCAFFOLDING			
Do all scaffolds erected in compliance with statutory regulations and such scaffold and accessories are conforming to regulations?	Yes	No	N/A
Do all persons erecting or altering scaffold over 4 metres holders of a current certificate of competency in scaffolding?	Yes	No	N/A
Does damaged planks being used and on the site?	Yes	No	N/A
Does Kickboards secured in place and guardrails installed?	Yes	No	N/A
Do mobile scaffolds are fitted with wheel locks, which are to be in place whenever persons are working on them?	Yes	No	N/A
CRANES			
Does only authorized certificated operators permitted to operate cranes?	Yes	No	N/A
Do Crane Operators and Doggers work in close terms with each other?	Yes	No	N/A
Do riding the load is prohibited?	Yes	No	N/A
Do slings, ropes and chains are checked on a daily basis, hands kept clear of pinch points and away from slings on loads?	Yes	No	N/A
Do crane and mobile machinery operators check clearance of electrical power lines when setting up or operating?	Yes	No	N/A
Does any defects with cranes, machinery and associated gear reported to the foreman in charge?	Yes	No	N/A
Do all crane hook blocks with detachable weight plates inspected to ensure the integrity of the attachment?	Yes	No	N/A
Does the cracks are present within welded components?	Yes	No	N/A
Do all lifts are planned and all parties involved are consulted?	Yes	No	N/A
DOCUMENTATION			
Does following documentation are kept at the site for all excavation and tenching work over 1.5 metres: • Copy of engineer's report. However, an engineer's report does not need to be prepared for trenching work?	Yes	No	N/A

• Copy of daily site inspections?	Yes	No	N/A
• Copy of systems of work employed (work method statement, job safety analysis)?	Yes	No	N/A
Personnel Protective Equipment (PPE)			
Do all persons working in the vicinity of the trench wear the appropriate PPE? This may include hard hats, safety boots, safety vests, safety glasses and gloves?	Yes	No	N/A
DEMOLISHING			
Does an assessment of the risks associated with the demolition of the building or structure is completed by a person competent in all phases of demolition work before the start of demolishing?	Yes	No	N/A
PREVENTATIVE MEASURES			
Does a hazard identification and risk assessment of any workplace is performed prior to the commencement of any work?	Yes	No	N/A
Does a work method statement is prepared which identifies the appropriate trained personnel, tools and equipment for the task to be completed?	Yes	No	N/A