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Occupational Safety and Health of Laundry Employees in Hotel Industry

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Abstract *Employee safety and health is considered to be one of the major important human resource functions for any hotel organization. The current paper focuses on the application of occupational safety and health of laundry employees looking at the nature of the tasks performed in day to day operations. OSH is one of the significant factors responsible for employees' inspiration and moreover retention in a hotel organization. Health, safety and performance of the employees are dependent on understanding and application of ergonomic practices followed during laundry operations. The paper explores laundry employee protection against various critical factors such as injuries, accidents, work postures, chemical exposure, heat, fire, noise, etc. A questionnaire was used to perpetuate perception of laundry employees in regard to protection from factors concerning safety and health issues from hotels of India. The results reveal that some of the OSH practices are been followed in hotels, while some were missing from hotels such as training, periodical audit and protection against chemical hazards. The present study suggests need for adopting OSH practices and enforcing periodical check for the same in every hotel besides of its categorization.*

Keywords: *Occupational Safety and Health (OSH), Performance, Chemical Exposure, Laundry, Chain Hotels*

INTRODUCTION

Employee performance engaged within various areas of guest service in hotels is dependent on employee satisfaction. One of the major motivational tools for employees is safety and health in their working environment. Besides various operational departments, laundry has a vital role to play to attaining guest satisfaction. The management needs to identify and manage risk effectively for maintaining employee safety and health aspects. Like any other department of the hotel laundry operations involve in injuries through accidents, sprains and strains, allergy, heat and cold, chemical hazards and handling faulty equipments and machinery. Hence, it is the primarily duty of employers to be responsible for health of employees (WHO, 1995). In fact, safety gets second rank in Maslow's hierarchy need, highlighting significance of safety and health for employees not only in laundry but even in other departments of hotel and other industries. The nature of task performed by laundry employees'increases the safety and health concerns and the problems associated differ according to the work place condition of individual premises and the quality of work and the standard procedures followed. Occupational safety and health is associated with protection and promotion of health of employees by providing them safe and healthy work environment by preventing and controlling occupational disease and accidents and also providing the employees support for physical, mental, social and professional enhancement and to contribute positively to sustainable development. European agency for safety and health at work (2012), believe that effective OSH programme may help in enhancing the levels of motivation, cooperation and morale in the workforce, produce more productive workers, and more efficient working methods. OSH is related to all actions surrounding the improvement and maintenance of health and safety and the prevention and reduction of potential health and safety hazards and risks in the workplace. Nankervis, Compton and Baird, (2005) reveal that hazards and risks may arise from exposures in the job and work environment and vary from physical factors (e.g. noise, vibration, and heat), chemical factors (e.g. poisons,

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toxics), hazardous substances (e.g. dusts, oil, and coal) and workplace organization (e.g. repetition of work, supervision, training) to stress and violence. But for an effective OSH programme, it's very important to identify hazards at workplace and take steps to eliminate or minimize them. The work involves awkward postures, manual handling, chemical exposure and repetitive hand motions. Laundry employees have to deal with hazards factors while meeting their tasks. The hazards can be highlighted as: injuries, accidents, work postures, chemical exposure, heat, fire, noise, etc. Working hours, work-life conflict and health is affected by some forms of precarious employment (Maria et al., 2011). Furthermore, any damage, an accident and an injury will cost business in terms of money, insured cost and uninsured cost, best employees and time. The most effective way of providing a safe work place is to make sure all hazards have been identified, assessed and controlled. Thus, the present paper aims at investigating the commitment and practices of management towards OSH in laundry operations. Next sections briefly examine the literature review and hypothesis development in the context of OSH practices in Indian laundry operations, which is followed by details of empirical design. The survey findings are then summarized, followed by a discussion of their implications. The last section sets out the conclusions and further research.

REVIEW OF LITERATURE

Occupational safety and health management is related to reducing potential health and safety hazards at workplace by improving and maintaining safety and health of employees. Quinlan and Bohle (2008) stressed on safe and healthy environment as legal right of employees, but found service industries having limited knowledge regarding health and safety. Nankervis, Compton and Baied (2005), identified hazards and risks may arise from exposures in the job and work environment and vary from physical factors (like: noise, vibration, heat), chemical factors (like: poisons, toxics), hazardous substances (like: dusts, oil, coal) and workplace organisation (like: repetition of work, supervision, training) to stress and violence. A healthy and safe workplace can strongly affect the productivity, quality of work and efficiency of the employees (Wooden & Vandenheuvel, 1999). OH&S relates to absenteeism and turnover Wood et al., (2001) related OH&S to absenteeism and turnover in organisations. In fact, absenteeism and turnover can be used in OH&S evaluation (Mikkelsen & Saksvik, 2004; Taylor et al., 2003). Buchanan et al., (2010) during a period of three-year analysed injury rates by job, company and demographic characteristics and found that overall injury rate was 5.2 per 100 workers and the highest rate was found for housekeepers. Moreover, injury risk was associated independently with age, job title and company. Gonca and Murat (2009) stated that as long as the risk level on the occupational health and security increase the satisfaction level of the employees will accordingly decrease. Ambardar (2013) revealed that poor OSH practices are followed by North Indian hotel industry. Somehow luxury hotels found to have better OSH practices in comparison to budgeted but some practices were found to be missing from both categories of hotels. Study suggests acute need for adopting OSH practices and enforcing periodical check for the same. Josephine and Boy (2011) findings show if health and safety is not managed effectively, both the employees and the employers would suffer because of inefficiency caused due to accidents, major and minor injuries, etc. Hsieh and Sonmez (2013) stated that hotel cleaners are exposed to disproportionately high work-induced hazards during their operational practices resulting in adverse physical, ergonomic, chemical, biological, and psychosocial afflictions and conditions. Katsuro, Gadzirayi, Taruwona and Mupararano (2010) revealed that due to negativity raised form OHS related problems, reduced worker output through in terms of their productive capacity in the food industry. Odile, Isabelle, Nicolas and Annette (1999), pointed out that there is association between manual material handling and other occupational hazards relating to musculoskeletal disorders which is not only extended to shop and store employees, but even to hotel and restaurant workers, and care workers. Kjellstrom, Lemke and Venugopal (2013) stated that increasing air temperature or humidity creates new workplace risks from heat stress, particularly in already hot locations, as temperature or humidity increases. And no exceptions are laundry operations with undesired climatic conditions for workers.

METHODOLOGY

This study is based on the results of a survey of 250 laundry employees from various categories of hotels in North India. These hotels were selected because of their similarity in type of services provided. The data was collected using questionnaires. The questionnaires were addressed to the employees working in laundry of these properties. The data was analyzed using SPSS. The questionnaire was tested for reliability and internal consistency using Cronbach α. This test calculates the reliability coefficient (α) if one variable is removed from the original set of the variables in the questionnaire. This test helps to determine the set of variables with high reliability based on the α coefficient above 0.80. The survey instrument was comprised of two sections. The first section asked for respondent demographic data. The second section consisted of variables identified from the literature review that affect the safety and health of employees working in different workplaces and the employees were asked to rank these factors using a five-point Likert scale (range: 1 = not agree to 5 = strongly agree). Descriptive statistics percentage analysis, mean, standard deviation and t-test are used for analysis.

ANALYSIS OF DATA

To address the objectives of the study, respondents were asked to indicate their level of agreement with various factors from their most their working experiences, using a 5-point Likert-type scale (1 = not important to 5 = very important). As shown in Table 1, the category composition of the hotels was 61.2% luxury and 97% budget. The largest represented type of management was non-chain (55.2%) and (44.8%) chain. Maximum of 60% hotels had employee's strength below 300 while 12% hotels had above 500 to 700 employees. 76 % of hotels were dealing with single product while 24 % hotels had multiple products to offer. In respect to the age of the properties 76 % hotels were below 10 years and 4% were below 20 years of age.

Table-I Distribution of Sample According to Demographic Characteristics (N=250)

	Number	Percentage
Category of hotels		
Luxury Hotels	153	61.2
Budget Hotels	97	38.8
Type of Management		
Chain	112	44.8
Non-Chain	138	55.2
Employees (numbers)		
101 – 300	150	60
301 – 500	70	28
501 – 700	30	12
Product line		
Single	190	76
Multiple	60	24
Age in years		
6-10	190	76
11-15	50	20
16-20	10	4

Principal Component Analysis for OSH factors

The results of principal component analysis on 29 items are presented in table 2. The output shows Eigen value of eight factors more than 1 explaining 69.2 percent of total variance thus placing 29 variables to underlying 8 factors.

Table 3 presents the results from exploratory components factor analysis is taken into consideration for grouping of all variables. First factor comprises of 6 items i.e. 'are staff trained in the safe use of machinery and equipment', 'is there adequate work space', 'is machinery securely guarded', 'are proper tools and equipment provided', 'is the laundry equipment in good working order and properly maintained', 'is the dry cleaning machine regularly maintained'with factor loading values of .618, .654, .730, .642, .629, .585. This factor can be named as Protection from faulty Equipments and Machinery.

Second factor show the highest loading of 3 items i.e. 'are the floors dry or made of non- slippery material', 'are measures taken to protect from knocking against overhead structures', 'are the walkways and work areas free from obstruction and tripping hazards'with factor loading values of .497, .736, .650. This factor can be named as Protections from injuries and accidents.

Third factor show the highest loading of 6 items i.e. 'are containers clearly labeled', 'are chemicals properly stored', 'are there adequate facilities and procedures to deal with chemical spills and splashes', 'are material safety data sheets provided for all chemicals', 'training is given to all the staff in the proper handling of chemicals', 'are measures in place to prevent excessive chemical exposure'with factors loading values of .512, .557, .536, .486, .610, .856. This factor can be named as Protection from chemicals hazards.

Factor 4 does not show any highest loadings. So this factor is not considered

Fifth factor show the highest loading of 8 items i.e. 'Are measures in place to reduce work with arms above shoulder height', 'Are work surfaces of suitable height for the work', 'proper manual handling methods and work postures training is given to staff', 'Are staff protected from excessive heat', 'Are staff protected from excessive or irritating noise', 'Are measures in place to reduce use of excessive force', 'Are measures in place to reduce excessive back or neck bending'with factors loading values of .655, .661, .676, .693, .625, .771, .683, .574. This factor can be named as Protection from sprains and strains.

Factors 5th, 6th and 7th does not show any highest loadings. So these factors are not considered.

Eight factor show the highest loading of 5 items i.e. 'Are measures in place to prevent electrocution', 'Are proper safety shoes provided used to protect feet from injuries', 'Are measures in place to prevent fire and explosion risk', 'Do staff involved in dry cleaning undergo regular medical examinations', 'Are measures in place to prevents burns and scalds'with factors loading values of .540, .758, .784, .614, .656. This factor can be named as Preventive measures.

So results of principal component place 29 variables into 5 factors. Loading of meaningful grouping are given in Table -3

Table 2. Principal Component Analysis to group OSH Variables

Variable	Communality	Factor	Eigen Value	% of variance	Cumulative %
are staff trained in the safe use of machinery and equipment	1.000	1	9.580	33.035	33.035
is there adequate work space	1.000	2	2.567	8.853	41.888
Is machinery securely guarded	1.000	3	1.830	6.311	48.199
Are proper tools and equipment provided	1.000	4	1.413	4.873	53.072
Is the laundry equipment in good working order and properly maintained	1.000	5	1.263	4.357	57.429
Are measures taken to protect from knocking against overhead structures	1.000	6	1.196	4.124	61.552
Are the walkways and work areas free from obstruction and tripping hazards	1.000	7	1.153	3.975	65.527
Are the floors dry or made of non-slippery material	1.000	8	1.080	3.726	69.253
Are measures in place to prevent electrocution	1.000	9	.886	3.056	72.308
Are measures in place to prevents burns and scalds	1.000	10	.804	2.771	75.080
Are proper safety shoes provided used to protect feet from injuries	1.000	11	.690	2.381	77.460
Are measures in place to prevent fire and explosion risk	1.000	12	.679	2.342	79.802
Are measures in place to reduce excessive back or neck bending	1.000	13	.652	2.248	82.050
Are measures in place to reduce work with arms above shoulder height	1.000	14	.567	1.954	84.004
Are measures in place to reduce use of excessive force	1.000	15	.544	1.876	85.880
Are work surfaces of suitable height for the work	1.000	16	.514	1.771	87.652
proper manual handling methods and work postures training is given to staff	1.000	17	.460	1.585	89.237
Are sufficient rest breaks provided	1.000	18	.410	1.415	90.653
Are staff protected from excessive heat	1.000	19	.376	1.296	91.949
Are staff protected from excessive or irritating noise	1.000	20	.335	1.156	93.105
Are measures in place to prevent excessive chemical exposure	1.000	21	.304	1.047	94.152
Are material safety data sheets provided for all chemicals	1.000	22	.272	.937	95.090
Training is given to all the staff in the proper handling of chemicals	1.000	23	.265	.913	96.003
Are relevant personal protective equipment provided	1.000	24	.239	.823	96.826
Are containers clearly labeled	1.000	25	.234	.807	97.633
Are chemicals properly stored	1.000	26	.218	.750	98.383
Are there adequate facilities and procedures to deal with chemical spills and splashes	1.000	27	.177	.612	98.995
Is the dry cleaning machine regularly maintained	1.000	28	.160	.552	99.547
Do staff involved in dry cleaning undergo regular medical examinations	1.000	29	.131	.453	100.000

Table 3. Factors of OSH

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Protection from faulty Equipments and Machinery					
are staff trained in the safe use of machinery and equipment	.618				
is there adequate work space	.654				
Is machinery securely guarded	.730				
Are proper tools and equipment provided	.642				
Is the laundry equipment in good working order and properly maintained	.629				
Is the dry cleaning machine regularly maintained	.585				
Protections from injuries and accidents.					
Are the floors dry or made of non-slippery material		.497			
Are measures taken to protect from knocking against overhead structures		.736			
Are the walkways and work areas free from obstruction and tripping hazards		.650			
Protection from chemicals hazards					
Are containers clearly labeled			.512		
Are chemicals properly stored			.557		
Are there adequate facilities and procedures to deal with chemical spills and splashes			.536		
Are material safety data sheets provided for all chemicals			-.486		
Training is given to all the staff in the proper handling of chemicals			-.610		
Are measures in place to prevent excessive chemical exposure			.856		
Protection from sprains and strains					
Are measures in place to reduce work with arms above shoulder height				.655	
Are work surfaces of suitable height for the work				.661	
proper manual handling methods and work postures training is given to staff				.676	
Are sufficient rest breaks provided				.693	
Are staff protected from excessive heat				.625	
Are staff protected from excessive or irritating noise				.771	
Are measures in place to reduce use of excessive force				.683	
Are measures in place to reduce excessive back or neck bending				-.574	
Preventive measures					
Are measures in place to prevent electrocution					.540
Are proper safety shoes provided used to protect feet from injuries					.758
Are measures in place to prevent fire and explosion risk					.784
Do staff involved in dry cleaning undergo regular medical examinations					.614
Are measures in place to prevents burns and scalds					.656

OSH PRACTICES IN INDIAN HOTEL INDUSTRY

Further to find out the extent to which Indian hotel industry manages and takes care of occupational safety and health of their employees, respondents were asked to rate the OSH practices in their hotel (Table-4). The mean values of the responses indicate that some OSH practices are followed in the Indian hotel industry. Mean value of Factor 1 i.e. protection from faulty equipments and machinery is (M-3.33). .The mean value is above average. 60 per cent of respondents agree that “staffs are trained in the safe use of machinery and equipment” (M- 3.72), 54 per cent of respondents are of the opinion that “the laundry equipments are in good working order and properly maintained “ (M-3.58), 54.4 per cent respondents agree that “machinery is

securely guarded" (M- 3.40), 44.4 per cent of respondents agree that "proper tools and equipment are provided" (M- 3.35), 40 per cent of respondents agree that "there is adequate work space" (M- 3.22). The handling of laundry requires considerable force. But proper design of machines and automation can reduce the amount of manual handling and excessive force.

For Factor two i.e. Protections from injuries and accidents the mean value is above average (M- 3.90). The handling of laundry requires considerable force and some task may repetitive and involve awkward postures and prolonged standing. So it's important to create such a work space and work flow which is protected from injuries and accidents due to slippery floor, over head structures and obstruction free walk ways and areas. 96 per cent respondents agree that "measures are taken to protect from knocking against overhead structures" (M- 4.42), 65.2 per cent respondents agree that "the walkways and work areas are free from obstruction and tripping hazards" (M- 3.65), 63.3 per cent respondents agree that "the floors are dry or made of non-slippery material" (M- 3.63). Occupational accidents and injuries can result in suffering, sickness absenteeism, productive loss, disability and sometimes even death. So it becomes necessary to implement safety and health programmes and identification of work hazards and their prevention.

But for factor third i.e. Protection from chemicals hazards the mean value is below average (M- 2.85). Only two variables in this factor score more than average i.e. "Are containers clearly labeled" (M- 4.26), and "Are chemicals properly stored" (M- 4.13). But for rest of the variables the mean value is below average such as 48 per cent respondents are strongly disagree and 52 per cent respondents disagree that "Are measures in place to prevent excessive chemical exposure" (M- 1.52). 72 per cent respondents disagree that "Training is given to all the staff in the proper handling of chemicals" (M- 2.18), 82 per cent respondents disagree that "material safety data sheets are provided for all chemicals" (M- 1.90). Chemicals are hazardous and may be corrosive, irritating, and flammable. Direct skin contact with some chemicals may cause burns and skin rashes from irritation or allergy. It is therefore important that employees who work with chemicals are aware of the hazards and adopt safe work practices to avoid chemical exposure. So it can be inferred that hotel industry need to adopt some measures to provide employees safe working environment.

For fourth factor i.e. Protection from sprains and strains the mean value is below average (M- 2.65). When asked from respondents whether proper manual handling methods and work postures training is given to staff, only 19.6 per cent respondents agree on this issue (M- 2.62). sufficient rest breaks are also not provided to the staff working in laundry (M- 2.29), even hotels are not having measures to protect its employees from excessive heat (M- 2.05) , noise (M- 2.05), and force (M- 2.62). if staff are exposed to heat and noise for longer time, this can lead serious health issues such as headache, fatigue, discomfort and illness. To avoid this proper ventilation, well planned exhaust system and air conditioning system should be provided at working area. Some task in laundry can lead to strain on back and other parts of body. To avoid this it's important that employees are aware of working hazards and proper work practices. All equipments and working table should be at proper height in proportion to the height of employees. But when asked from respondents whether measures are in place to reduce excessive back or neck bending (M- 2.29), 58 per cent of respondents disagree on this issue and 41.2 per cent respondents are neutral on this issue. Prolonged wrong body posture increase stress on the muscles and ligament and increases the risk of injuries.

For fifth factor i.e. preventive measure the mean value is above average (M- 3.33). Respondents were asked that 'Are measures in place to prevent electrocution (M- 3.39)', 'Are measures in place to prevent fire and explosion risk (M- 4.24)','Are measures in place to prevents burns and scalds (M- 4. 068)'. For above these 3 variables mean score is above average. but for two issues mean score is below average i.e. 'Are proper safety shoes provided used to protect feet from injuries (M- 2.42)', 'Do staff involved in dry cleaning undergo regular medical examinations (M- 1.92)'. Time to time medical examination of employees is very important. Management needs to implement an effective safety and health programme and welfare facilities like medical examination facility for employees, proper rest areas and first aid boxes.

Thus the above analysis indicates that some of OSH practices in laundry are followed by hotel industry. But in some practices hotel industry is lacking. Hence results of this study indicate that more initiative is required form the hotel management.

RESULTS AND RECOMMENDATIONS

Result of analysis found adequate requirement of OSH practices in hotel industry. The present study finds poor practices followed by laundry employees in hotel industry. The non-presence of OSH practices reduces the morale of the employees and hence the efficiency and effectiveness resulting in poor productivity and performance. Training to the staff is given for some procedures and most of the other important procedures are been ignored resulting in meager knowledge of OSH practices and related significance of the same for employees. All factors: protection from faulty

Table 4. OSH Practices in Luxury and Budget Hotels

	Mean	SD	Factor Mean
Protection from faulty equipments and machinery			
Are staff trained in the safe use of machinery and equipment	3.7240	.85952	3.33
is there adequate work space	3.2200	.74148	
Is machinery securely guarded	3.4040	.72310	
Are proper tools and equipment provided	3.3520	.64323	
Is the laundry equipment in good working order and properly maintained	3.5880	.79295	
Is the dry cleaning machine regularly maintained	2.7120	.66243	
Protections from injuries and accidents			
Are the floors dry or made of non-slippery material	3.6360	.48211	3.90
Are measures taken to protect from knocking against overhead structures	4.4240	.55629	
Are the walkways and work areas free from obstruction and tripping hazards	3.6520	.47729	
Protection from chemicals hazards			
Are containers clearly labeled	4.2640	.61630	2.85
Are chemicals properly stored	4.1320	.56200	
Are there adequate facilities and procedures to deal with chemical spills and splashes	3.1120	.61069	
Are material safety data sheets provided for all chemicals	1.9000	.65400	
Training is given to all the staff in the proper handling of chemicals	2.1880	.90550	
Are measures in place to prevent excessive chemical exposure	1.5200	.50060	
Protection from sprains and strains			
Are measures in place to reduce work with arms above shoulder height	3.1240	.65601	2.652
Are work surfaces of suitable height for the work	4.1880	.64678	
proper manual handling methods and work postures training is given to staff	2.6280	.92793	
Are sufficient rest breaks provided	2.2920	.72722	
Are staff protected from excessive heat	2.0520	.61548	
Are staff protected from excessive or irritating noise	2.0560	.72593	
Are measures in place to reduce use of excessive force	2.6200	.72505	
Are measures in place to reduce excessive back or neck bending	2.2920	.66972	
Preventive measures			
Are measures in place to prevent electrocution	3.3960	.49005	3.33
Are proper safety shoes provided used to protect feet from injuries	2.4280	.94678	
Are measures in place to prevent fire and explosion risk	4.2400	.75411	
Do staff involved in dry cleaning undergo regular medical examinations	1.9200	.64128	
Are measures in place to prevents burns and scalds	4.6800	.46741	

equipments and machinery, protections from injuries and accidents, protection from chemicals hazards, protection from sprains and strains, preventive measures are4 found to be important areas to be covered in OSH programme for its effectiveness and to increase morale of the employees. The study recommends that hotel industry should upgrade their OHS practices through training programmes and use up-to-date equipment for its laundry employees. It should be made mandatory for employees to participate in such training programmes and apply the same in daily operations. Standard procedures to monitor, measure and recording OSH performance on the basis should be developed for its right implementation. Proper check and documentation should be developed indicating underlying causes of work related injuries, diseases, and accidents of the employees. Periodic audit should be conducted in order to determine whether the OSH practices and management is in place, its effectiveness in protecting safety and health of laundry employees.

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