Original Article

Evaluation of Occupational Health and Safety Management System (OHSMS) Performance and Awareness among the Employees in the Faculty of Engineering, Universiti Putra Malaysia (UPM)

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ABSTRACT: *Managing safety, health and environment in the workplace is very important to prevent any injuries and associated illnesses. However, the implementation of the Occupational Health and Safety Management System (OHSMS) in the educational sector is still inadequate as compared to the industrial sector. Therefore, this study investigates the current implementation of the OHSMS in the educational sector based on the seven key elements derived from the OSHA Program Management Guideline 2015. The Faculty of Engineering, University Putra Malaysia, was selected as a sample of the educational sector in this study. The study was conducted upon reviewing related literature of previous case studies using questionnaires and interviews to determine the awareness level and perception of employees on OHSMS implementation at the faculty. It was discovered that the current OHSMS performance of the faculty against seven key elements is at a satisfactory level but there is room for improvement. Several recommendations were raised based on the seven key elements during the evaluation done on collected data on the faculty. Overall, this study can be used as a new set of findings to improve the OHSMS performance in the education sector complying with the required standards.*

Keywords: *Educational Sector, Occupational Safety and Health Management System (OHSMS), OSHA Program Management Guideline 2015, Recommendations, Seven Key Elements*

1.0 INTRODUCTION

Occupational Health and Safety Management System (OHSMS) is a systematic approach to manage safety and health in the workplace by reducing and preventing work-related accidents. Although there is no specific definition for OHSMS since it has a broad meaning. OSHA Safety and Health Program Management Manual and ILO-OSH (2001) defined the Occupational Health and Safety Management System as "A set of interrelated or interacting elements to establish and implement OSH policy and objectives, and to achieve those objectives." Meanwhile, the Occupational Health and Safety Assessment Series (OHSAS) 18001 (2007), defines OHSMS as a "part of an organization's management system used to develop and implement its Occupational Health & Safety policy and manage its Occupational Health & Safety risks."

The Faculty of Engineering, Universiti Putra Malaysia (UPM) raised the idea of this study and expressed the utmost concern on the current operational level of OHSMS and the employees' awareness within the university. According to Wu et al. (2007), there are various causes of injuries and deaths at universities that involve students, staff, and instructors. Therefore, effective implementation of OHSMS in universities is essential to reduce and prevent occupational accidents that are likely to weaken the university's objectives and in delivering a safer environment for the communities. This study is based on the Malaysian Standard Occupational Safety and Health Management Systems - Requirements MS 1722: 2011, ICS: 13.100, OSHA Safety and Health Program Management Guide and ILO-OSH's key guidelines to ensure that the standard key elements are compliant.

This study relates to the relationship between occupational safety management and firm performance by Fernandez Muniz et al. (2009) in discovering traits and features for implementing the OHSMS in the workplace. These features include the development of Safety Policy in the workplace, incentives for the employees' participation in any kind of health and safety activities, providing training, improving employees' competency and skills, enhancing communication skills at the workplace, planning for all kinds of emergency and also controlling and reviewing all the activities that were carried out within the organization.

In this study, data collected from the OHS Committees Office were measured and analysed based on the seven elements of the OSHA Program Management Guideline (2015). The seven key elements mentioned in the guideline are management, leadership, worker participation, hazard identification and assessment, hazard prevention and control, education and training, program evaluation and improvement, and coordination and communication with multi-employer worksites. Two research instruments were used to obtain reliable findings, questionnaires designed to evaluate the awareness of the employees from the faculty and interview sessions served to assess OHSMS performances.

2.0 METHOD

The details of the methodology and instruments used to assess the performances and awareness among the employees of the Faculty of Engineering, Universiti Putra Malaysia (UPM) is prescribed in this section. Instruments used include OHSMS' performance face-to-face interviews with selected representatives of OSH committees, and OHSMS questionnaires were also distributed to all Faculty employees. The interview and survey questionnaires were designed based on the seven key elements set out in the OSHA Program Management Guideline 2015. Fig. 1 shows the seven major key elements derived from the mentioned guideline.

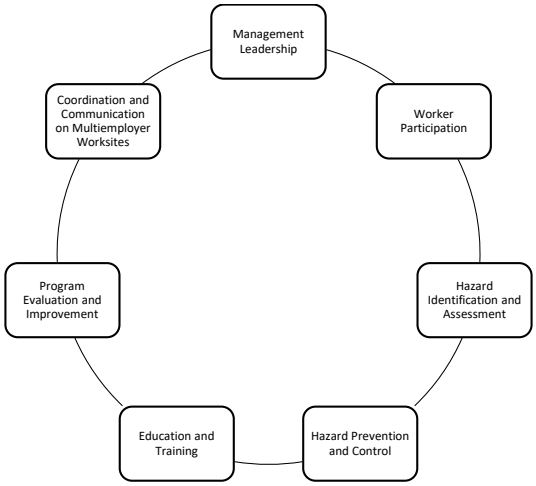

Figure 1 Seven Main Key Elements Derived from OSHA Program Management Guideline 2015

2.1 Questionnaire

The questionnaire was used as the main tool to assess the perception and attitude of employees towards OSH practices within the faculty. There are a total of four sections in the questionnaire and the first section started with the demographics of respondents. This section aimed to gain more insights into the employee's background and related information. The second section was designed to evaluate employees' awareness of OSHMS practices within the engineering faculty. The third section dealt with employees' participation in any activity organized by the OSH committee. The final section of the questionnaires was designed to gain a better understanding of the views and attitudes of employees where these respondents can raise individual recommendations to further improve on OHS practices.

Table 1 Questionnaires for Evaluation of OHSMS' Performance and Awareness among the Employees in the Faculty of Engineering, UPM

Part	Elements	Questions Item
A	Respondent's Information	2
B	Employees' Awareness	4
C	Employees' Participation	2
D	Employees' View and Perception	7

2.2 Interview

The interview is designed for the Faculty of Engineering, UPM OHS management committee. The interviews targeted to learn more about the committees' perceptions, views, knowledge and experiences, especially about the Occupational Health and Safety Management System at the university. Interview questions are designed based on key elements taken from the OSHA Health and Safety Program Management Guidelines 2015. Three interviewees were selected to answer the interview questions due to time constraints. There are six parts with 21 questions developed in the questionnaire, and all participants received the same questions.

3.0 RESULTS AND DISCUSSION

This section discusses the findings on performance and awareness level for Occupational Health and Safety Management System (OHSMS) among the Faculty of Engineering employees at Universiti Putra Malaysia (UPM) based on the distributed questionnaires.

3.1 Demographics

Respondents came from eight engineering departments; chemical, civil, mechanical, electrical, food, computer and aerospace. A total of 70 respondents was involved in the survey. Fig. 2 shows the respondents who participated in the survey. 69.57% of the total respondents are lecturers, 8.7% are assistant engineers and laboratory technicians respectively, 4.7% are engineers and 8.7% are in the “Other” category. The “Other” category refers to the participants representing faculty members, e.g., executive officer, research officer who responded to the survey. Among all respondents, only 13.04% are faculty OSH committees, while 86.96% are ordinary employees.

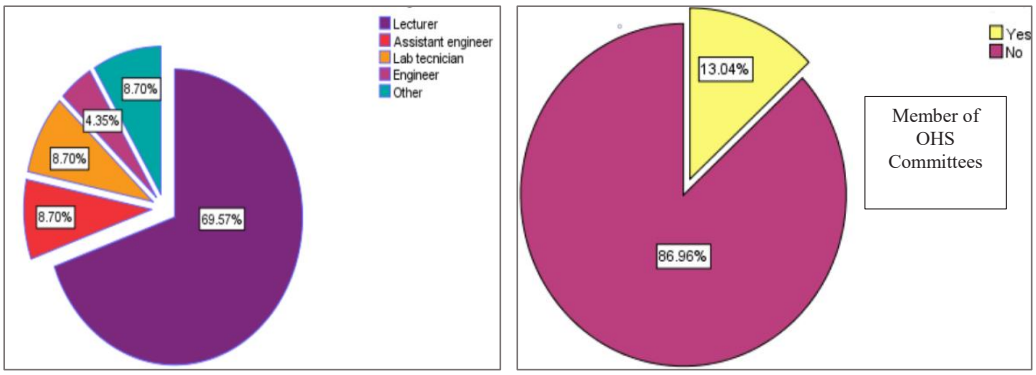

Figure 2 Respondent’s Demographic Information

3.2 Employees' Awareness

The findings for employees' awareness level for OSH-related activities and individual OSH responsibility are presented in Fig. 3. 86.96% of employees who participated in the survey are aware of OSH. Conversely, 13.04% are not aware of any of the OSH activities and individual responsibilities for health and safety at work. The percentage reflects that most faculty, employees were well-informed on safety and health-related programs because the OHS committees constantly disseminate the information to them via email. This encourages employees to actively participate in OSH-related activities.

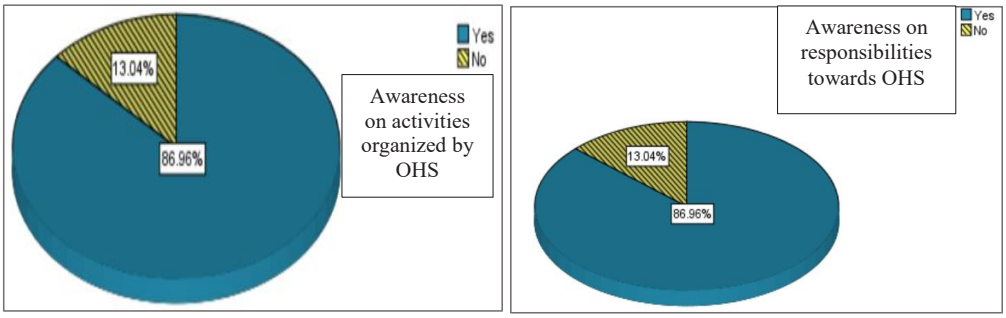

Figure 3 Awareness of the Employees on Activities Organized by OHS Committees and Responsibilities towards OHS

Employees were evaluated on the awareness of hazards in their workplace. Based on Fig. 4, 95.65% of the employees were fully aware of the hazards in their workplace and 4.35% were unaware of the hazards, this is probably due to the fewest hazards encountered in the respective area. Fig. 5 displays the type of common hazards encountered in the faculty, for example, a falling object, slippery ground, contact with chemicals, burns, falls from height, machine hazard, electric shock, injury from moving parts and other hazards such as collapsing ceiling.

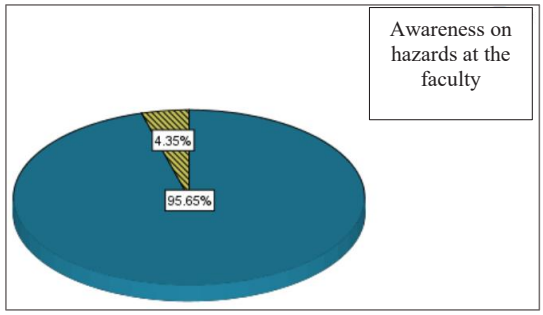

Figure 4 Awareness of the Employees on Hazards Encountered at the Faculty of Engineering, UPM

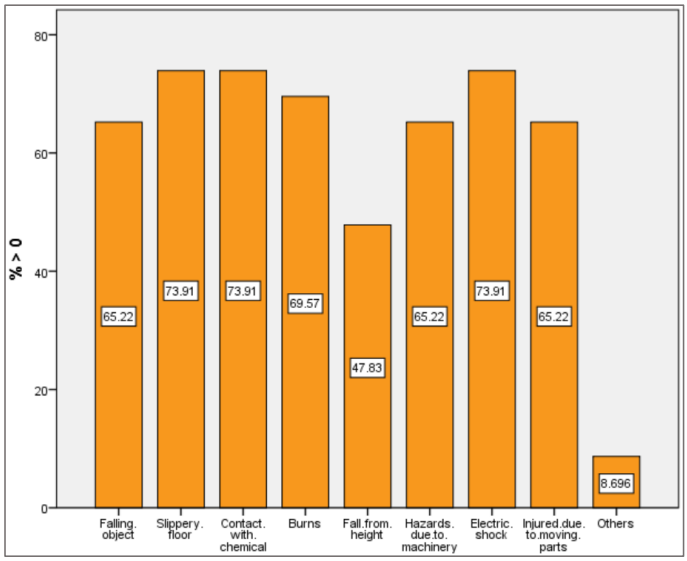

Figure 5 Type of Common Hazards Acknowledged by the Employees in the Faculty of Engineering, UPM

73.91% of the total survey respondents selected slippery floors, contact with chemicals and electric shock as the most common hazards in the faculty. 69.57% voted for Burns and 65.22% voted for falling objects and moving parts injury, both are considered common hazards. In contrast, falls from height and other types of hazards scored the least percentage with 47.83% and 8.696%, respectively. This is because most of the activities in the department are carried out in the laboratory.

3.3 Employees' Participation

The employees' participation in any activity organized by the OHS committees of the faculty was evaluated in the survey. According to Fig. 6, 65.2% of the employees attended the seminar and training related to safety, such as Fire Safety Seminar, Electrical Safety Seminar and Safety and Stress Management Seminar the most preferred among other activities. The second-highest employee participation by 43.5% comes from two main activities: job hazard analysis and employees that contribute to the development of safe work procedures and guidelines. While 30.4% of the respondents assist with accident investigation and 26.1% participated in the safety inspection at the faculty. Only 8.7% of the respondents have the least participation in the development and implementation of the OHS program.

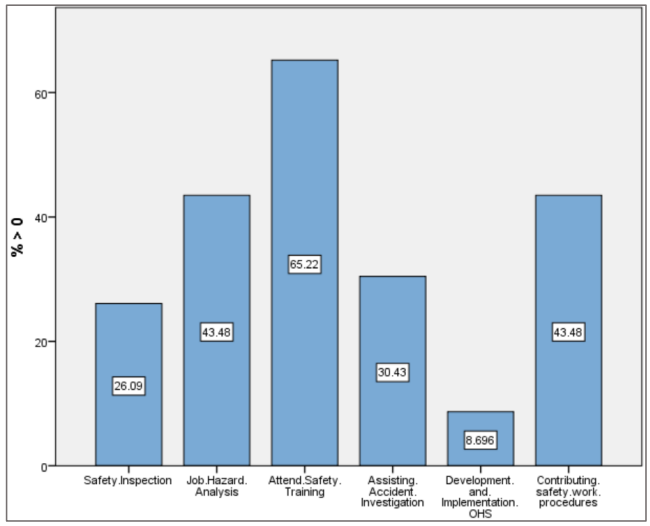

Figure 6 Participation of Employees in OHS Activities in the Faculty of Engineering, UPM

3.4 Employees' Views and Perceptions

3.4.1 Employees' Understanding of UPM OHS Policy

Table 2 summarizes the employees' level of understanding of UPM's OSH policy as part of the survey. Based on the OSH policy, respondents acknowledge that the management shall be responsible for protecting the safety and health of workers in the workplace and it is mandatory to comply with safety standards. 82.6% of the respondent agreed with these statements. Concerning the other two aspects of workers' safety and health issues which is one of the main priorities and the responsibility of management to provide the necessary safety training and supervision, both these two have the same and a lower percentage of 69.6%.

Table 2 Employees' Understanding of UPM OHS Policy

	Aspect of OHS Policy	Percentage
i	Management is responsible for protecting worker's safety and health at the workplace	82.6%
ii	Comply with the standard safety regulations	82.6%
iii	Safety and health issues of the workers are the top priority	69.6%
iv	Management provides necessary safety training and supervision	69.6%

The employees' levels of understanding are highly dependent on the policy. However, the percentage for the aspect of taking "Safety and health issues of the workers is the top priority" was considered low. This is probably related to the OHS Policy content, which is not directly applicable in this case. There might be other factors that limit the employees' level of understanding for example communication barrier that provoked the management to deliver a clear policy content. According to International Labor Organization-OSHA (2001), the OHS Policy should be communicated to all people in the workplace. It shall convey the key principles of protecting the safety and health of all members at the workplace by preventing any kind of work-related injuries and illness.

3.4.2 Employees' Perception of OHS Responsibilities

Table 3 illustrates the findings on the respondent's perception towards the management of OSH responsibilities. 82.6 %, of the respondents presumed that both the employer and employees shall be responsible for Safe Management Measures at the workplace, while 17.4 % perceived that only the employer shall be fully responsible for managing employees' safety and health at the workplace.

Table 3 Perception of OHS Managing Responsibilities

OHS Managing Responsibilities	Percentage
Both Employer and Employees	82.6%
Employer	17.4%

According to Malaysian Standard on Occupational Health and Safety Management System (2011) and International Labour Organization: OSH (2001), the responsibilities of OHS primarily fall under the employer, but the employees should also understand the individual roles in managing safety and health at the workplace and comply with the safe work procedures. Furthermore, the employer should prioritize the worker's safety through regular monitoring so that undesirable events can be prevented.

4.0 CONCLUSION

This study aims to evaluate employees' performance and perceptions towards OHSMS implementation at the Faculty of Engineering, UPM. Overall, the OHS management system's performance in the faculty has achieved a satisfying level, yet not fully complied with the seven key elements derived from the OSHA Program Management Guideline 2015. The OHS committees should be fully aware of this situation and appropriate measures shall be applied to ensure the OHSMS implementation in the faculty is on the right track and well-conducted based on the standard key elements, especially in terms of hazard identification and control aspect.

In summary, the level of awareness among employees on the OHSMS in the faculty is acceptable based on the evaluation and findings gathered from the questionnaire. All the employees (the respondents) shall be aware of the OHSMS function, but OHS policy needs to be kept or placed in a safe corner at the faculty. This is to ensure the awareness level of the safety policy could be increased among the employees as well as the students.

The implementation of the OHSMS in the education sector could be improved through developing a specific design cater for universities that differs from the industries. The adoption of OSHMS alone will be insufficient as if there is no continual improvement to ensure that the system is fully capable to enhance safety and health in the workplace. Beyond that, UPM has taken initiatives to enhance the OSH management system at the Faculty of Engineering and the university also serves as a starting point to strengthen OHSMS performance in the education sector in Malaysia, adhering to the required standard.

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