INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 14, Issue 12, (2024) E-ISSN: 2222-6990

Event Risk Management: A Study on Event Safety Awareness among Staffs and Students in Universiti Teknologi Malaysia

Siti Fawziah Mohd Noor[1], Roshazlizawati Mohd Nor[2], and Norafneeza Norazahar[3]

[1, 2]Faculty of Management, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia, [3]Faculty of Chemical and Energy Engineering, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia

Corresponding Author Email: sitifawziah@utm.my

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v14-i12/24118 DOI:10.6007/IJARBSS/v14-i12/24118

Published Date: 13 December 2024

Abstract

The importance of event safety has been given crucial attention around the globe. To build holistic student development and skills, various programs organized expose participants to numerous event risks. A study was conducted to investigate the awareness of event safety among 250 students and staffs of Universiti Teknologi Malaysia (UTM) who act as a control group and an intervention was done by giving awareness talk on event safety to 100 UTM staff and students who participated in service-learning program through several sessions from the year 2020 to 2023 who act as study group. The survey data were analyzed using SPSS version 27. Survey results show that 78% and 73% of the study group and the control group are highly and moderately less aware of event safety. The survey also reveals that 72% of respondents from the study group have awareness of using event safety checklist. 52% respondents from the control group did not know about the UTM order regarding the use of event safety checklist on risky program or event. Results of the survey generate further findings which indicate participants who have high awareness of HIRARC also have high awareness on SOP. Event safety education should be recommended in all student's program which has risks by promoting event safety awareness among students and participants. It is hoped that this study could create a safety culture in managing event risks.

Keywords: Risk Management, Event Safety, Safety Awareness

Introduction

Neither event organizers nor scholars involved in event management can ignore the importance of event safety (Vendelø, 2019). Reid and Reitchie (2011) stated that to date there has been a paucity of research analyzing the adoption and implementation of event

risk management by event organizers. Jacek (2021) in his research on the risk management for running events stated that the exploration of the extent for running event organizers can provide a safer environment for participants and manage the risk of their events is certainly challenging for researchers. Currently, on early 2023, Malaysia's Minister of Higher Education had highlighted the importance of ensuring student safety and welfare in any planned activity managed by educational institution. Accidents occurring in major events worldwide have been an eye-opener for the researcher to find the best solution to ensure the safety of the held event. Peng et al. (2023) stated that sport managers and event organizers should carefully monitor weather forecast and take timely interventions such as suspending or canceling the race or event before a disastrous consequence occurs. The safety aspect should be the first and most important element to be considered in all planned activities. We often track the lack of safety elements when an event or activity has been successful or when an accident has occurred. This culture should be corrected immediately to have a safe and healthy event management environment with the right safety culture in managing events. The student affairs department in educational institutions always prepares platforms for students and the community to plan high impact events. The approach of including the safety and health agenda in the planned platform should be an important step in producing an event that includes all holistic elements. The involvement of the Occupational Safety, Health, and Environment (OSHE) Office in student activity has opened a new dimension of occupational safety, health and environmental safety perspectives in conducting risky events through safety leadership. It is important and the responsibility for each educational institution's management to ensure the safety, health, and well-being of not only the students but also the staff involved during the program. It is hoped that this study could be a guideline for any student activity or event planned in any educational institution or any organization in the future.

Literature Review

Studies carried out worldwide have found safety negligence issues that cause accidents in some large events involving mass gatherings. Perhaps the largest gathering events in the world could be the Olympic games where sportsman all over the world gathered to compete in sports. Table 1 listed some of the reported accidents that occurred during an event around the world.

Table 1
Accidents in Event Around the World

1	2022	Football match between Arema FC and Persebaya Surabaya at Kanjuruhan stadium in Malang, East Java	Supporters from the losing team invaded the football pitch. Police then fired tear gas, triggering a stampede and suffocation	More than 125 killed and more than 323 injured
2	2021	Airport Race Wars 2, Kerrville-Kerr County Airport, Texas	A vehicle lost control and struck spectators.	2 young boys killed and 8 other injured

	2021	Gansu Ultramarathon, China	The weather deteriorated between the second and third checkpoints (about 15 miles into the route) and runners were pelted with hailstones and icy rain.	21 experienced professional runners died due to hypo thermia (The Guardian, 2021)
3	2017	Ariana Grande concert, Manchester Arena, England	Suicide bomber	22 killed and 59 wounded
4	2017	Half Marathon Championship, Copenhagen, Denmark	Fierce cloud burst and flood on the marathon route	Organizers called off the race for participants safety.
5	2016	Educational Innovation in Motorsport and Automotive Racing (EIMARace), Malaysia	Go-cart racing accident rammed spectators	Fatality of 2 audiences
6	2015	Pilgrims throw stones, Jamarat Bridge, Saudi Arabia	Panic broke	More than 700 people were tramped and crushed to death and more than 800 injured.

Ütük & Baraçlı (2024) in their study found that risk management can offer insights into the factors influencing response and how preparedness for such events can be enhanced. A study done in Malaysia towards event management industry found that, most event management organizations involved in the activity did not take measures towards risk and safety issues, especially in their planning stages (Masrur, 2014). On September 25, 2016, Malaysia was shocked by a tragedy that involved UTM as the organizer. The event as visualized in **Figure 1** was 2016 Educational Innovation in Motorsport and Automotive Racing (EIMARace) which was held in Kuantan Pahang. It was reported that the location of the event had been changed during the last minute of the planned event. It was found that there are elements of negligence or criminality that existed that were related to safety aspect (Bernama, 2016). As a result, an accident happened that took the lives of two family members: the 39- year-old father and his 5-year-old daughter. This accident gives UTM a highly vulnerable experience in the importance of event safety management. Kowalski et al. (2024) stated that to raise awareness is by learning from adverse events and thus could promote safety.

According to Makda et al. (2012) policies and legislation are the most powerful risk management tools which can have a positive impact on the success of events and the event organization. At the end of 2016, UTM issued a Management Circular No. 26 / 2016; Abide of Occupational, Safety and Health Aspect for all UTM Official Event. The Occupational Safety, Health, and Environment (OSHE) Office of UTM during that time has published a form entitled Event Safety Checklist as an administrative control measure to ensure the

safety and health of any organized risky event. This form must be filled in by the organizer of the program if there is any potential risk in the planned activities. The form shall be submitted to OSHE UTM at least two weeks prior to the beginning of the program for document review and location inspection. This shows that safety leadership is one of the important tools in creating and developing safety culture in managing events safely.

Figure 1. The accident during EIMARace in 2016 in Kuantan, Pahang

Event Safety Management

Event Safety has attracted the attention of many researchers across the world. It has been researched in many domains. Event safety and risk management is one of the most important aspects in the multi-disciplinary nature of event management and planning (Tarlow, 2002; Silvers, 2005; Fallon & Sullivan, 2005; Silvers, 2008; Mallen & Adams, 2008; Robson, 2008; Jennings and Lodge, 2009; Masrur, 2012). Recent work on event safety includes study in the domain of sport tourism (Peric et al., 2018), health care (Puthumana et al., 2021), motorsport (Garisson & Chander, 2018), transportation (Jharko & Sakrutina, 2017).

Health and safety in events management is essential and needs to be undertaken and understood both at the practitioner level and at the academic level (Ian Arnott, 2020). Reid and Ritchie (2011) noted that, occupational health and safety requirements, legal duty of care, and the capacity of organizations to deal with risks and crisis are important considerations for the sustainability of event organizations and events themselves. Even if an organization has its own procedure in managing event safety, the question is, how effective are the actions taken to make sure that all the safety measures have been taken care of? The communication of safety regulations or orders in every organization should be done carefully by leaders to ensure that all affected parties are well known and understand the information given.

Service / Community Based Learning (SULAM)

Through the Malaysia Education Blueprint 2015-2025 (Higher Education), the First Leap outlined under Initiative A1 is to strengthen the curriculum where Higher Education

Institutions (HEIs) must adopt High-Impact Educational Practices (HIEPs) that combine experiential learning and entrepreneurial incorporation into the curriculum. Among the elements implemented in HEIPs is Service / Community Based Learning. SULAM is a teaching and learning method that combines the learning objectives of the course with community service that involves students interacting with the community to solve local problems by using the knowledge and skills they learn in the lecture room.
Before the planned event of SULAM is carried out, the safety element must be included starting from the initiation of groundwork. The SULAM "Eco Tourist Heritage" program organized by UTM in Pulau Tanjung Surat, Kota Tinggi Johor has become the sample for this safety event study. The aim of event safety in this study is to ensure that all the participants and attendees, as well as those affected by this SULAM event, are protected from risk and hazards to ensure their health and safety through the event.

Research Methodology

This section describes the methodology used in the investigation of event safety awareness. Generally, the study is carried out under the SULAM "Eco Tourist Heritage" Program. The six stages involved in conducting the study are illustrated in Figure 2. During the initial stage, the organizer of SULAM "Eco Tourist Heritage" Program invited representative from the Office of OSHE, UTM to join the program as a safety leader for the program. The involvement of OSHE officer has opened a new dimension of the SULAM program from an event safety perspective. A couple of meetings and discussions were held between the organizer, participants and OSHE officer regarding the event safety issues associated with the SULAM program. The second stage involves checking out the event location to ensure that the SULAM program is viable and to assess any risks that could occur. This is followed by the preparation of event safety checklist form, Hazard Identification, Risk Assessment and Risk Control (HIRARC) and Safe Operating Procedure (SOP), in stage 3. The Event Safety Checklist form is a unique, holistic form designed for organizers who organize any type of risky event to ensure the safety of their program and detect any faults in it. In this study, the event safety checklist form was filled up by the organizer's safety committee.

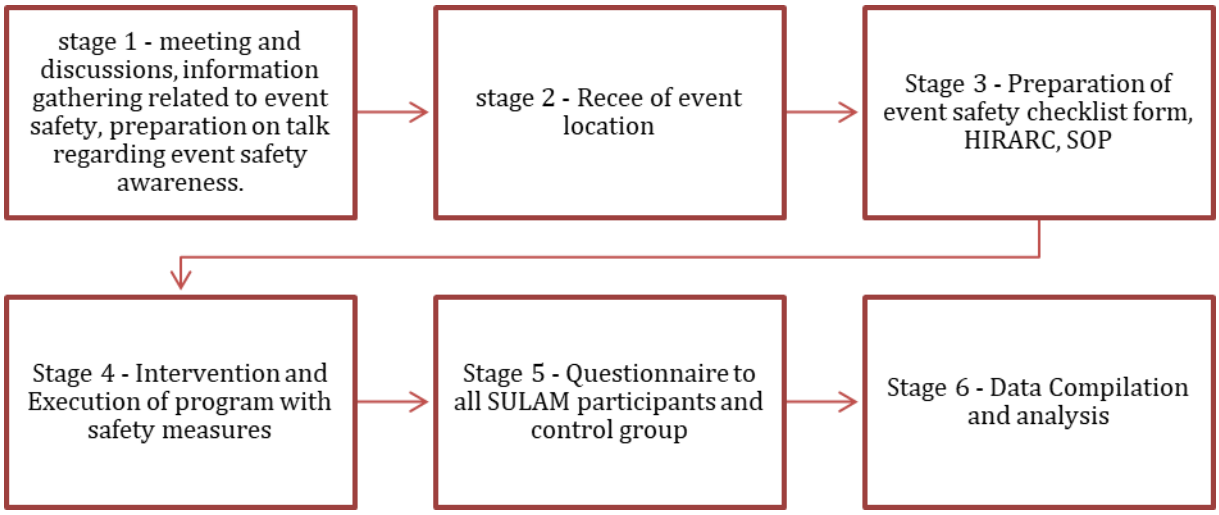

Figure 2. Stages in the Event Safety Awareness Study

Next is stage 4 where the SULAM program is delivered. As mentioned earlier, an event safety briefing is conducted prior to the SULAM program. An introduction on event safety was given to participants of the program. An intervention was applied by giving safety awareness talk regarding event safety among organizer and participants in this SULAM program by OSHE Officer. Information on event safety that was highlighted in the briefing was the Event Safety Checklist, HIRARC and SOP. At the end of the SULAM "Eco Tourist Heritage" Program, all 100 participants were asked to fill-out a questionnaire that was distributed online as well as to the 250 respondents from the control group. This activity occurs in Stage 5. The final stage of the study involves Data Compilation and Analysis.

The survey carried out under this study is of "descriptive survey" type. These types of studies collect data quantitatively and the data from participants are analyzed quantitatively using descriptive statistics such as frequencies, percentages, averages, or other statistical analyses. The instrument used in the study is a set of questionnaires that includes two sections. The first section is the profile of respondent and the second section composed of ten items related to awareness of the importance of event safety in a SULAM program. The measurement level used in the second section is of the Likert scale with six elements which are "Do not know", "Low", "Medium low", "Satisfying", "Medium high" and "High". These scales allow the respondent from the SULAM participants group and the control group to express the level of awareness on specific question related to safety event.

The questionnaires were distributed online by means of the Google form. Responses from the respondents were compiled into an Excel file and then copied into SPSS version 27 for statistical analysis. During the data analysis, the data obtained from the questionnaire were measured and analyzed using descriptive statistics and a correlation method. Conclusions were then drawn about the awareness of event safety. An in-depth analysis of the results is presented in the next section.

Results and Discussions

The variables of the collected data were first analyzed through a descriptive analysis. This is followed by correlation analysis that promotes in-depth understanding of the variables of the study. The total number of survey respondents were 100 from the SULAM "Eco Tourist Heritage" Program participants and 250 from the control group who did not join the SULAM program. Of the SULAM participants and control group, the mean ages are 42 and 27 respectively. The minimum and maximum ages for SULAM participants are 21 and 59 respectively, while for the control group are 20 and 57 respectively. The statistics are shown in Figure 3.

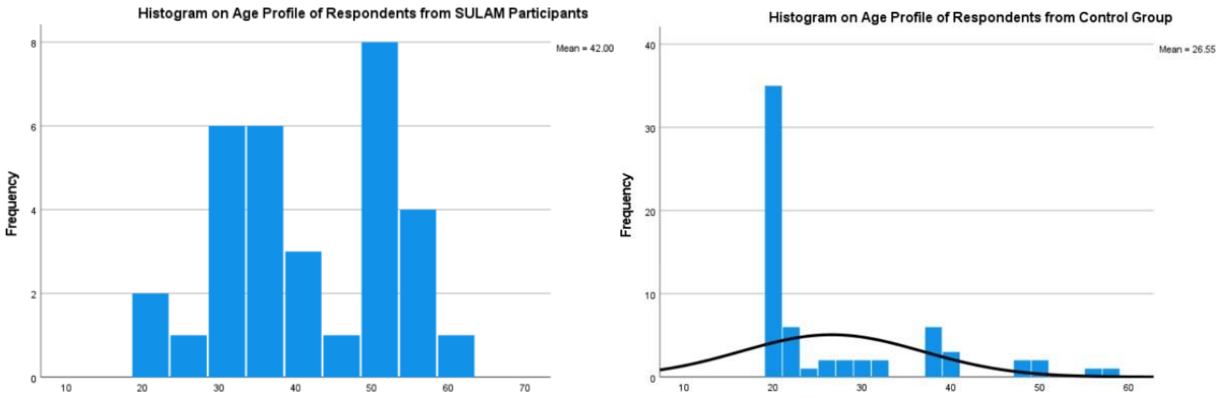

Figure 3. Statistics on Profile of Respondent from SULAM participants and Control Group

Overall, 78% of the participants responded that their awareness of event safety was high. This is indicated by 47% and 31% of participants who answered that their awareness is "medium high" and "high". As for the control group, the awareness level shows lower indicator where 42% and 31% of control group answered "satisfying" and "medium low". These results are shown in Figure 4.

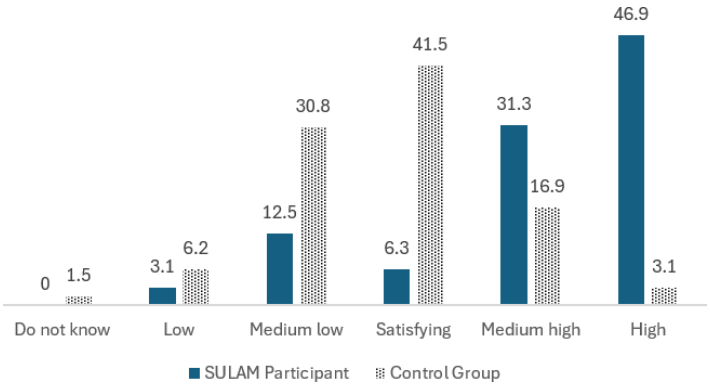

Figure 4. Statistics on Awareness of Event Safety among SULAM Participants and Control Group

72% or majority of respondents from participants group are aware of the UTM Management Circular No. 29/2016 that Event Safety Checklist should be filled up by organizer of any official event in and outside UTM. A minority or 28% of respondents are not aware of it. The results indicate that the awareness of using event safety checklist is well informed in UTM for the SULAM participants group. Meanwhile, statistics from the control group shows contradict result. As shown in Figure 5, 52% of respondents from control group answered that they are not aware of the UTM Management Circular No 29/2016.

Figure 5. Statistics on Awareness of Management Circular No 29/2016 among SULAM Participants and Control Group

In terms of Hazard Identification, Risk Assessment and Risk Control (HIRARC) among SULAM participants, the awareness is considered moderate as the highest percentage of 44% is captured from respondents who responded to have Medium High knowledge about HIRARC. Only 9% of participants have a good knowledge of HIRARC. In addition, a quarter or 25% of participants either do not know or have low awareness about HIRARC. The awareness among the Control Group in this study is considered low as the highest percentage of 34% is captured from respondents who responded to have Medium Low knowledge about HIRARC. 25% or a quarter of respondents from Control Group did not know about HIRARC and 15% has low knowledge about it as shown in Figure 6.

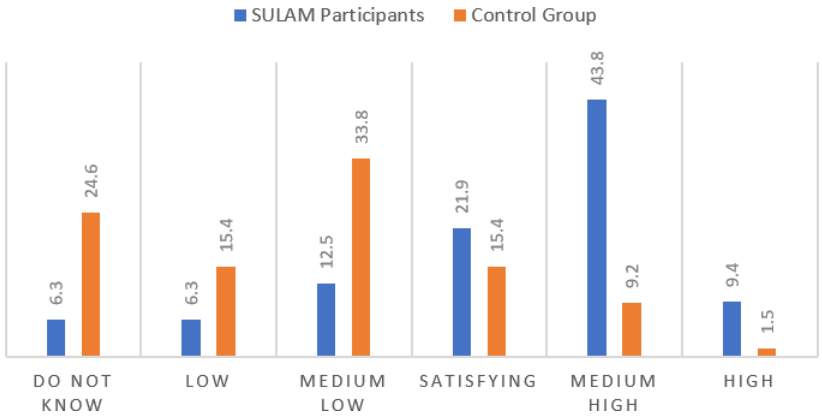

Figure 6. Statistics on Awareness of Hazard Identification, Risk Assessment and Risk Control (HIRARC) among SULAM Participants and Control Group

As shown in Figure 7, the level of awareness on Safe Operating Procedure (SOP) among SULAM participants in executing SULAM activity is 44% "medium high" and 12% "high". This 56% high awareness on SOP is slightly higher than awareness on HIRARC. At the same time, it is slightly below the awareness on event safety checklist. Meanwhile for the control group the result indicated that 39% "medium low" and 22% "satisfying". This 61% moderate low awareness on SOP shows that the control group must get more education on SOP.

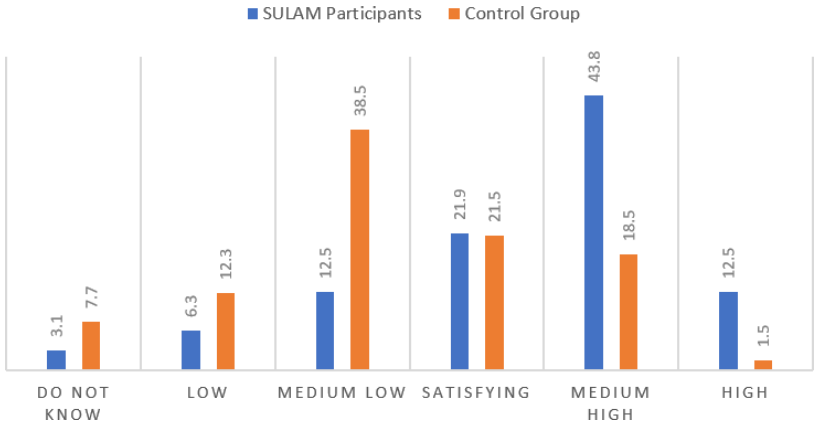

Figure 7. Statistics on Awareness of Safe Operating Procedure (SOP) among SULAM Participants

Occupational Safety, Health and Environmental Policy of Universiti Teknologi Malaysia has recently been revised. The policy shows the commitment of OSHE UTM in terms of occupational safety, health, welfare, and environmental health for all UTM staff, students and outsiders who come to UTM. As shown in Figure 8 below, this study reveals that 50% and 40% of respondents from the SULAM participants and Control group have high or are well informed and moderate knowledge about the policy respectively.

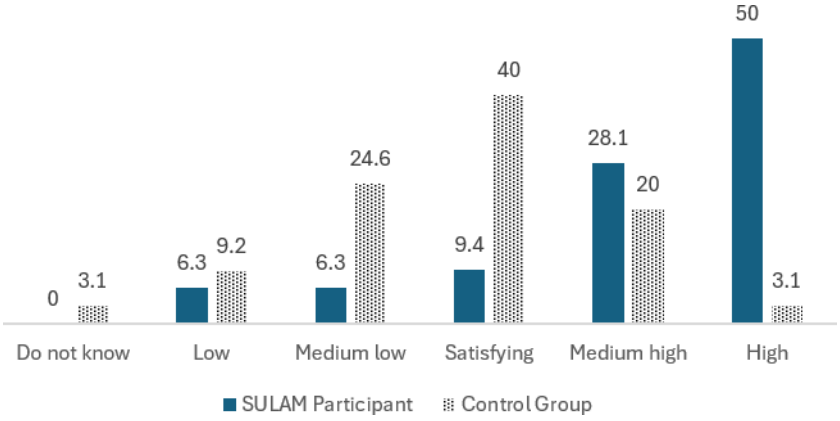

Figure 8. Statistics on Awareness of Occupational Safety, Health, and Environmental Policy of Universiti Teknologi Malaysia among SULAM Participants and Control Group

Section 24 of Occupational, Safety and Health Act (OSHA) 1994 stated the responsibility of workers towards occupational safety at the workplace. Figure 9 below shows that 37.5% of respondents from SULAM participants are highly aware of this section. The Control Group shows 42% of respondents have medium low knowledge about Section 24 OSHA 1994.

The analysis revealed that all respondents from SULAM participants and control groups agreed that safety is a critical aspect in executing a SULAM activity or any risky program.

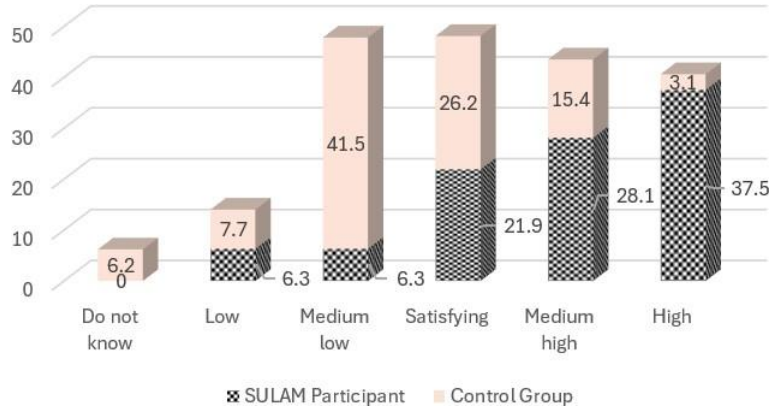

Figure 9. Statistics on Awareness of Section 24 of Occupational, Safety and Health Act 1994 among SULAM Participants and Control group

A multi-variate analysis with two variables which were awareness on HIRARC and SOP is performed. Specifically, a Pearson Correlation is used to quantify the potential relationship between the two variables. A significant result is obtained at $p = 0.000$ and $r = 0.706$ which shows that SULAM participants who have high awareness on HIRARC also have high awareness on SOP. A moderate result is gained at $p = 0.000$ and $r = 0.574$ for respondents from the Control Group.

Discussions

Based on the research done it is found that 78% or majority of SULAM participants have high awareness of overall aspects of event safety. For the Control Group, 73% or majority have moderate awareness on event safety. It is also revealed that 72% and 48% of SULAM Participants and Control Group are aware of UTM event safety circular respectively. A moderate percentage of 53% and 56% is recorded on awareness of HIRARC and SOP among the SULAM participants. Whereas a low percentage of 11% and 20% is gained among the Control Group. It was also noted that there is a significant relationship between HIRARC and SOP. In addition, it was noted that less than 10% of SULAM participants and the Control Group had no knowledge or were not aware about the importance of each event's safety in executing a SULAM Program. The latest UTM OSHE policy is known to half or 50% of SULAM participants compared to only 3% for the Control Group.

The reported results reflect that the event safety activity intervention study which was included in the SULAM "Eco Tourist Heritage" program gives positive impact to the awareness on event safety among the SULAM participants. Thus, findings from this study reveal that an education talk or briefing on safety measures is strongly recommended to be conducted prior to the execution of a SULAM program.

The event Safety Checklist form used in this study is a very useful safety tool for managing safety measures for a program or event. The Hazard Identification, Risk Assessment and Risk Control (HIRARC) form which must be included in the Event Safety Checklist form is very helpful to identify the risks that existed or could be happened during the execution

of the program, assessing the risks and control it. There are some Safe Operating Procedure (SOP) that were suggested by the safety personnel in the event which was used to ensure the safety of all participants of the SULAM event. The involvement of safety personnel in this activity has open a new dimension of event safety in SULAM activities not only for Universiti Teknologi Malaysia but also to any organization as well.

Conclusions

The study has successfully investigated the level of awareness on various event safety issues, among the participants of SULAM "Eco Tourist Heritage" Program and the Control Group who did not involve in the SULAM program nor getting any briefing on event safety. Findings from the study show that a well-planned event safety activity (the educational talk prior to SULAM program) promotes safety event awareness that can contribute to a safe event for everyone in the program.

Recommendations from the findings of this study include the following:

1. Event safety is a very important issue that should have been taken care of wisely in any event planned.
2. Safety precautions shall be considered before, during and after an organized event using Hazard Identification, Risk Assessment and Risk Control (HIRARC) and Safe Operating Procedure (SOP).
3. The safety committee should be included in every official program or event planned within or outside any organization.
4. Event safety checklist should be filled up before execution of program.

Event organizers should aim to address safety, health and welfare issues and put in place controls to mitigate risks at the earliest stage of the event planning process. In addition to education talk/brief prior to the execution of any program, other safety measures can be implemented. Future work to enrich the results of this study may consider the level of awareness of other event safety measures. Leadership aspects in managing safety culture on organizing events safely or conducting any activities could also be conducted. An increase in the number of samples may increase the accuracy and patterns of result. Thus, further works may consider expanding the scope of the participant, from UTM to all participants of the student activity in Malaysia. In terms of statistical analysis, future work may include other multi-variate analysis such as regression analysis and analysis of variance for further analysis of the data.

Acknowledgments

The authors would like to express their gratitude to SULAM "Eco Tourist Heritage" UTM Organizer, Occupational Safety, Health and Environment Office, Universiti Teknologi Malaysia and all the participants of the program for their cooperation throughout this study.

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