

## ORIGINAL ARTICLE

# IMPACT OF INTERPROFESSIONAL EDUCATION ON PATIENT AND WORKPLACE SAFETY ON ALLIED HEALTH INTERNS

UmasenanThanikasalam\*

Department of Healthcare, Faculty of Allied Health Sciences, Asia Metropolitan University, Cheras, Selangor DarulEhsan, Malaysia.

Correspondence: ustm20@gmail.com

## ABSTRACT

*The passing of The Occupational Safety Health Act and the subsequent release of the Institute of Medicine (IOM) report had resulted a stronger sense of awareness towards workplace and patient safety in the Healthcare Industry. The World Health Organization (WHO) recommended Interprofessional education as one of the preparative module in handling safety issues in the healthcare Industry. The aim of this paper was to evaluate the students' knowledge, perception, attitude, interrelationship, inclusion, understanding and teamwork towards patient and workplace safety. The research was conducted by administering questionnaires to returning allied health students from their internship in the healthcare settings. The overall results indicated that 63.4% of the students Agreed, 18.3% Neutral, 17.9% Strongly Agreed and only 0.3% had Disagreed on the impact of Interprofessional education towards patient and workplace safety in the Healthcare Setting. Occupational Safety Health and Interprofessional Education are relatively new concepts in Malaysia and require a strong understanding before a strong concluding stand could be established. The researcher feels a more concurrent approach should be implemented to actually know the impact of Interprofessional education towards patient and workplace safety in the healthcare settings.*

**Keywords:** *Interprofessional education, patient safety, workplace safety, allied health*

## INTRODUCTION

Healthcare is inevitably related to occupational injury and diseases<sup>1-4</sup>. In spite the passing of The Occupational Safety Health Act and the setting up of the National Institute of Occupational Safety Health (NIOSH) in these respective countries, these researchers noted low knowledge and unconvincing awareness among its healthcare workers namely in Malaysia<sup>2</sup>, Jamaica<sup>5</sup>, Tanzania<sup>3</sup> and Britain<sup>6</sup>.

Workers in Healthcare were subject to working hazards such as infections, cuts and injuries, exposure to anesthetic gases, radiations, dermatitis causing substances, vaccines and serums<sup>2,10</sup> and being predisposed to working conditions such as muscular skeletal disorders, needle stick injuries, carcinogenic contacts, latex allergies, violence and stress<sup>2</sup>. Researchers had alerted that 90% of work accidents are caused by unsafe behavior and human error while the remaining 10% are due to unsuitable workplace and equipment<sup>4,13</sup>. Healthcare workers were also found negligent in their work practices<sup>8</sup>. A healthcare working environment is recognized as occupational safety health<sup>9</sup>.

Clinical exposures are far more life threatening than the administrative environment due to having direct access to patient<sup>5</sup>. Patients are subject to medical errors such as medical prescription, dispensing, preparing, administering, monitoring and providing medicine advices<sup>10</sup>. The risk on

inpatients is greater than the out patients as the inpatients are also occupying the same working environment as the healthcare workers<sup>11</sup>. The healthcare industry receives less funding in relation to occupational safety health as many had perceived the healthcare environment to be a promising safe place to patients and workers<sup>2, 5</sup>. This concept to be eliminated and encourages that workers must be provided with a good, safe and working environment<sup>2</sup>. More training and professional development trainings on safety be provided to healthcare safety in preparing with the mentioned calamities<sup>5, 2</sup>.

Training and education were the most crucial factor in establishing a strong understanding and practice in relation to clinical safety practice<sup>5</sup>. The younger generation of healthcare workers had insufficient amount of knowledge as compared to workers who served the industry in a longer time<sup>5</sup>. Many blue collar workers in the healthcare industry had lower knowledge and awareness as compared to professional and semiprofessional healthcare workers<sup>2,5</sup>. This was also due to overlooked training which was not given to these workers<sup>2,5</sup>. Health care professionals are poorly prepared by their education for their actual role in the healthcare industry. As, a result, this is seen as not meeting the demands requiring health care professionals to serve with the interest of society and quality patient care<sup>12,13</sup>.

Healthcare education is strongly grounded in time honored, traditional and stringent guidelines of content teaching methods and do not permit external alliances and influences<sup>14</sup>. The traditional method of education looks at healthcare professionals as individuals and not as team members contributing as a whole. These silos concept is also one reason for healthcare professionals is unable to face job hazards and threats.

Previously the healthcare industry only had recognized two professions namely doctors and nurses<sup>15</sup>. Doctor diagnoses the patient's condition and the nurse works on receiving the instructions from the doctor to restore the patient's condition<sup>16</sup>. The healthcare industry is constantly witnessing immerse development due to medical knowledge, pharmacy and technologies<sup>15</sup>. When technologies emerge, new safety and health risk also surface<sup>17</sup>. These developments were noted as not supporting the daily duties of the doctors and nurses creating shortfalls<sup>16</sup>. The allied health profession were introduced to overcome these shortfalls and emphasized on teamwork<sup>19</sup>. Interprofessional education is a desired outcome in working and patient safety in the healthcare environment<sup>20</sup>.

The World Health Organization (WHO) back in 1988 recommended the utilization of Interprofessional Education. WHO (1988) defines interprofessional education as 'occurring when two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes'. The subsequent release of the reports by Institute of Medicine on 'To err is Human' strengthens the concept of Interprofessional Education towards workplace and patient safety in the Healthcare Industry.

## METHODOLOGY

The purpose of this study was to see the impact of Interprofessional education in the area of workplace and patient safety among the students studying in Asia Metropolitan University during the internship in the Healthcare Industry. A total of 290 students were taken for this study after obtaining approval from the respective deans of the faculties. These students were in their final year from various academic programs ranging from nursing, medical imaging, healthcare management, pharmacy, occupational therapy, physiotherapy, paramedics and environment & safety. All the programs run with duration of 3-4 years depending on their entry qualification. The students had earlier studied the subject on workplace and patient safety in their core subject

'Occupational Safety Health'. The classes were conducted together of these mix courses intakes for them to get a glimpse on the safety and health aspect of the healthcare industry.

Upon completion of the modules, students proceeded to their own required modules to complete their chosen program. During the final, stage of their programs the students meet again and are sent for practical's at the same place for workplace training and exposure. Their practical's last for a period of 12 weeks in which the students return and take their final exam granting them the proper completed qualification. The modules were developed in accordance to requirement of Malaysian Qualifying Agency (MQA), Ministry of Health, World Health Organization (WHO) and the respective national and international governing bodies of the allied health programs offered.

A questionnaire was developed and adapted from the study of Parsell, Spalding and Bligh looking at the areas of Safety Knowledge, Broadened Perception on Safety, Attitudes Towards Safety, Interrelationship Towards Safety, Inclusion In Education, Understanding Safety And Teamwork in Safety. The first part of the questionnaire looked at the demographic particulars of the students. The questionnaire was showed to the respective Deans of the course faculty for opinion and also to the Program Managers for ease and use. The questionnaires were found not to deviate and no further amendments were suggested. An alpha-reliability test was performed and a 0.832 score was obtained making it reliable.

## Data Analysis

In this study, 71.4% of the students were females and 25.9% of the students were males. The Malaysian higher education scenario is seeing a rise of female students than male students especially in the science sector<sup>20</sup>. The study was conducted with the similar proportion of male and female students<sup>20</sup>. Most of the students were from the age group of 22-25 making up of 52.4%, while 23.4% were from the age group of 18-21, 16.1% were from slightly older group of 26-29 and the remaining 16.1% were aged 30 over. A total of 86.9% of the students were not married and 13.1% are married. In the race category, 31.4% of the students are Malays, 4.8% are Chinese, 31.7% Indians and 32.1% Ethnic. The university notes a low intake of Chinese students in its academic programs. In the course distribution category 18% of the students are nursing, 7% Medical Imaging, 15% Healthcare Management, 16% Pharmacy, 7% Occupational Therapy, 16% Physiotherapy, 11% Paramedics and 10% Environment & Safety.

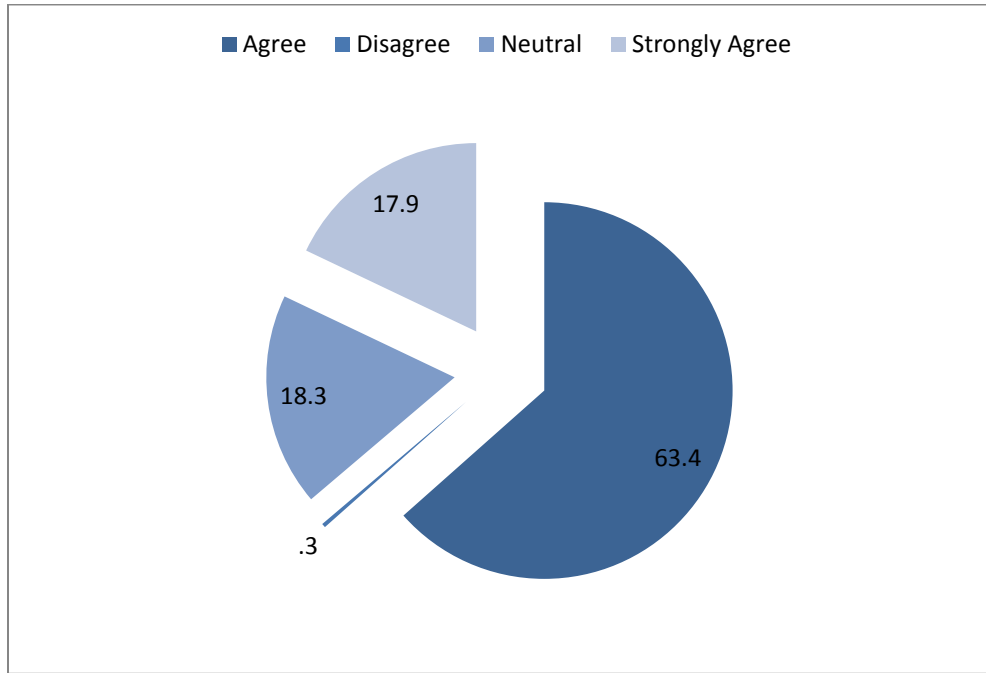


Figure1: Distribution of Overall Scores

Tabulation of Scores

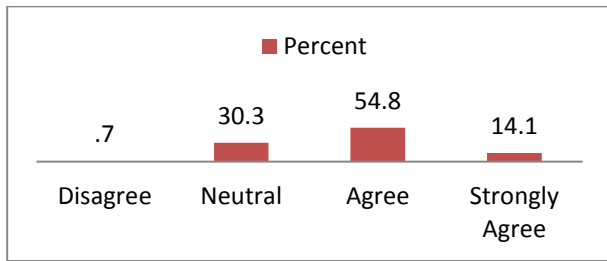


Figure 2: Safety Knowledge

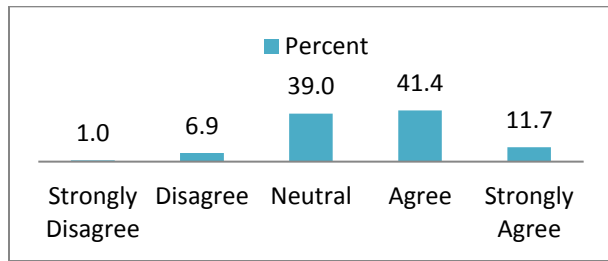


Figure 3: Broadened Perception on Safety

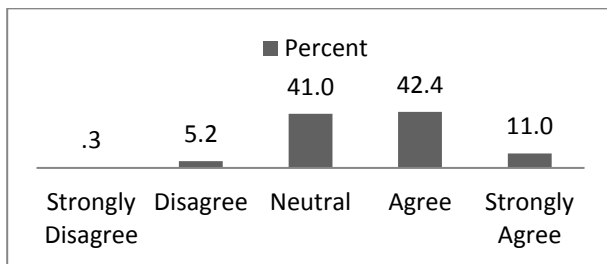


Figure 4: Attitudes on Safety

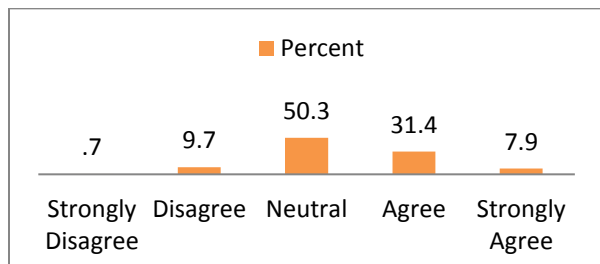


Figure 5: Interrelationship towards Safety

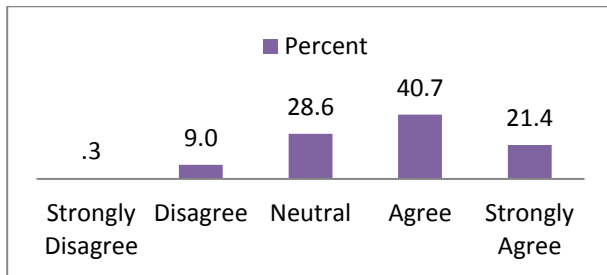


Figure 6: Inclusion in Education

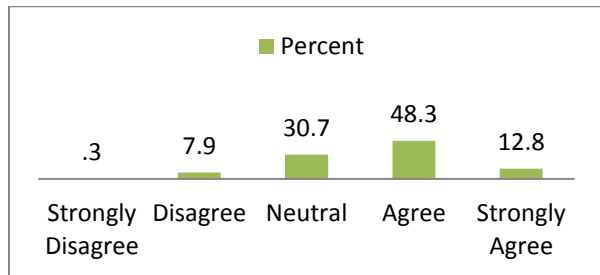


Figure 7: Understanding Safety

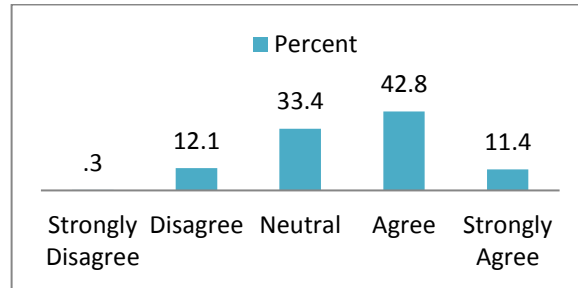


Figure 8: Teamwork towards Safety

**RESULTS**

**Knowledge**

Knowledge is the first level found in Bloom’s Taxonomy and also used by most in the education industry. In this study 54.8% agreed on the safety knowledge received through Interprofessional learning were of some help during their practicals. Studies and observation had indicated that the knowledge obtained by young trainees is of lower than the older working personnel in the healthcare industry<sup>2,5</sup>. Observation through the local preceptors had indicated otherwise. Female workers were found to be apt and through on knowledge awareness and retention in relation to workplace awareness and safety<sup>5</sup>. A correlation test was conducted between gender and knowledge and the score indicated was 0.223 (single tail) and 0.446 (two tail), making it not significant. Therefore, gender could not be seen as a factor on knowledge in this study.

**Broadened perception on Safety**

In the domain of Broadened perception on safety, 41.4% of the student had agreed and 39.0% were neutral on whether Interprofessional education had broadened their understanding of safety. The students enrolled in this program could be divided into clinical and non-clinical. Due to the nature of their curriculum and requirement of the curriculum many students do not have or are allowed to have direct patient contact or provide treatment unless accompanied by their local preceptor or the actual personnel on duty. Many students are not allowed to present in actual treatment process. We feel more time and place exposure be implemented.

**Attitudes on Safety**

Almost 42.4% Agreed and 41.0% were Neutral on Interprofessional Education towards their safety attitudes. Interprofessional education is the solution to safety issues in the healthcare industry<sup>21</sup>. Our study shows most of the students were neutral and agreed yet we feel more observation must be made to ascertain this claim

on their attitudes towards safety. However, the local preceptor and workforce of the students being placed in had assured that the students were on the right track towards safety. We feel a stronger study should be established in this domain.

**Interrelationship towards Safety**

In this area 50.3% were Neutral and 31.4% Agreed on the impact of Interprofessional education towards their interrelationship. Healthcare students often undergo most of their modules in silos that is in isolation. When they work they have to work with one another as the healthcare industry works as a team. Hierarchical boundaries are one of the causes for safety mishaps in the healthcare industry<sup>22</sup>. Interprofessionaleducation is the solution to healthcare hierarchical boundaries<sup>23</sup>. The education method should be implemented during the first stage to minimize the undesired consequences<sup>23</sup>. The students in this study did have their study in the early stage which is the first year of their academic program yet the results were predominantly neutral. This could be bias or the students are taking a neutral stand towards their working interrelationships.

**Inclusion in Education**

One of the objective of this study is to implement Interprofessional Education in relation to workplace and patient safety in the healthcare industry, 40.7% of the students Agreed, 28.6% Neutral and 21.4% Strongly Agreed. This is a positive indication that the students want the concept of Interprofessional Education be incorporated into their curriculum. We felt that more studies and domains must be looked to affect stronger inclusion in the education so students will be able build their confidence level in attaining workplace and patient safety. The concept of Interprofessional education is still new in Malaysia and will take time for it to have its actual weight<sup>20</sup>. As being a private university, we hope the government and respective qualifying bodies will help us to develop a uniform guidelines to make this concept better. The concept of Interprofessional education had been a success in the west and we hope the same could be established here.

## Understanding Safety

The students in this study, almost 48.3% Agree, 30.7% Neutral and 12.8% Strongly Agree that Interprofessional Education had helped them to understand on safety. The concept of Safety is a very wide area and also requires in depth understanding. The healthcare industry is constantly witnessing new changes<sup>15</sup> and new changes often creates new hazards<sup>17</sup>. Therefore, before we can actually understand the concept of safety a new form takes place requiring another repeated process. The students prior to attending their practical had been equipped with basic requirement; however theory and practical aspects of safety are different. The mean scores indicated almost half 48.3% are agreeing to the meeting and requirement of Interprofessional Education towards their understanding on safety.

## Teamwork towards Safety

Interprofessional Education is actually a form of education training towards teamwork. The Healthcare industries are now working as teams in managing its operations<sup>24</sup>. Working as teams had actually solved many safety issues such as patient safety which could not have been while working or handling a particular chore single handedly<sup>24</sup>. The calling in of non-healthcare professional into the healthcare industry could tackle safety issues effectively<sup>25</sup>. In this study, 42.8% Agreed, 33.4% Neutral and 11.4%, Strongly Agreed that Interprofessional Education had prepared them to work in successfully as a team. This is a positive sign.

## CONCLUSION

Overall, average score looked at 63.4% Agreed, 18.3% Neutral, 17.9% Strongly Agreed and only 0.3% Disagreed on the concept of Interprofessional Education. This is a positive sign as the scores indicated the students were more on the axis of neutral to strongly agreeing to the concept of Interprofessional Education. The concept of Interprofessional education is new to Malaysia. This might take some time for it to take effect effectively, however workplace and patient safety cannot wait. It is hoped that the relevant Ministries such as Ministry of Education, Ministry of Health and Ministry of Human Resource could foster in some form of guideline to affect it better.

## LIMITATION

This work is limited to the research conducted within the students of one university and the students could be bias in answering the questionnaire given. We feel more research should

be taken in a qualitative manner to actually view and see the sequences of Inteprofessional education towards the students' concept of workplace and patient safety.

## Conflict of Interest

There is no conflict of interest on this work.

## ACKNOWLEDGEMENT

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