ATTITUDES ON PATIENT SAFETY AMONG UNIVERSITI SAINS MALAYSIA (USM) MEDICAL STUDENTS

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by

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Declaration

This is to certify to the best of my knowledge, the dissertation is entirely the work of the candidate, Shazrina binti Ahmad Razali

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I hope my thesis will benefit other medical school stakeholders in term of nurturing medical students who will be our next leader in health profession. InsyaAllah.

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LIST OF ABBREVIATIONS

APSQ III	Attitudes to Patient Safety Questionnaire (APSQ III)
USM	Universiti Sains Malaysia
WHO	World Health Organization
MOH	Ministry of Health
SMS	School Medical Sciences
S.D	Standard deviation
SPSS	Social Sciences for Statistical Package
NPSEF	National Patient Safety Education Framework
ICPS	International Classification Patient Safety

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SIKAP TERHADAP KESELAMATAN PESAKIT DI KALANGAN PELAJAR PERUBATAN UNIVERSITI SAINS MALAYSIA (USM)

ABSTRAK

PENGENALAN: Pertubuhan Kesihatan Sedunia (WHO) memperkenalkan panduan kurikulum keselamatan pesakit untuk sekolah perubatan di seluruh dunia sejak 2009 ekoran kesedaran keselamatan terhadap pesakit adalah masalah kesihatan sejagat. Walaupun pelaksanaan kurikulum keselamatan terhadap pesakit membawa kesan untuk memupuk profesional penjagaan kesihatan masa depan, namun kebanyakan sekolah perubatan di seluruh dunia masih belum mendokumentasikan pelaksanaan ini secara terperinci. Tujuan kajian ini adalah untuk meneroka sikap dan faktor-faktor yang berkaitan dengan keselamatan terhadap pesakit di kalangan pelajar perubatan pra-siswazah di Universiti Sains Malaysia (USM). METODOLOGI: Kajian keratan rentas dilakukan terhadap 457 pelajar perubatan Tahun 2 hingga Tahun 5. Sikap terhadap keselamatan pesakit diukur dengan menggunakan borang "Attitude to Patient Safety Questionnaire (APSQ) III" pada skala 7 poin Likert. APSQ III mengukur 9 domain iaitu; i) latihan keselamatan terhadap pesakit, ii) keyakinan melaporkan ralat, iii) waktu bekerja sebagai penyebab ralat, iv) ralat yang tidak dapat dielakkan, v) ketidakcekapan profesional sebagai penyebab ralat, vi) tanggungjawab pendedahan ralat, vii) pasukan yang berfungsi, viii) penglibatan pesakit dalam mengurangkan ralat, dan ix) kepentingan keselamatan terhadap pesakit dalam kurikulum. Setiap domain ditafsirkan sebagai sikap positif, neutral, atau negatif. Enam item dikodkan negatif item. Analisis statistik 'independent t-test', 'one way ANOVA' dan 'Pearson correlation test' dilakukan dengan menggunakan Statistical Package for Social Sciences (SPSS) versi 24. KEPUTUSAN: Seramai 427 (93.4%) daripada 457

pelajar perubatan dari Tahun 2 hingga Tahun 5 telah mengambil bahagian secara sukarela dalam kajian ini (kadar keciciran 6.6%). Majoriti dari mereka adalah perempuan 290 orang (67.9%), berumur 21 tahun dan ke atas 336 orang (78.7%), Tahun 2 126 orang (29.5%) dan mendapat markah B + 196 orang (45.9%). Semua domain adalah positif kecuali domain 5 (ketidakcekapan profesional sebagai penyebab ralat). Skor tertinggi adalah domain 7 (pasukan yang berfungsi) dan skor terendah adalah domain 5 (ketidakcekapan profesional sebagai penyebab ralat). Analisis 'post-hoc' menunjukkan perbezaan sikap yang signifikan terhadap skor keselamatan pesakit dan tahun pengajian di kalangan pelajar tahun pra-klinikal dan klinikal dalam lima domain. Terdapat korelasi signifikan positif yang lemah antara usia dan domain 3 (waktu bekerja sebagai penyebab ralat). Terdapat juga korelasi signifikan positif yang lemah antara pencapaian akademik untuk domain 3 (waktu bekerja sebagai penyebab ralat) dan domain 4 (ralat yang tidak dapat dielakkan). Walau bagaimanapun, sikap terhadap keselamatan pesakit tidak berkaitan dengan jantina. KESIMPULAN: Para pelajar perubatan USM mempunyai sikap yang positif terhadap keselamatan pesakit secara keseluruhannya. Namun, masih terdapat beberapa sudut yang boleh dipertingkatkan dengan menekankan konsep keselamatan terhadap pesakit dikalangan pelajar perubatan sebelum menjadi doktor. Justeru, kurikulum keselamatan pesakit perlu dilaksanakan seawal mungkin dalam silibus latihan pendidikan perubatan. Oleh yang demikian, dokumentasi yang tepat dan semakan kurikulum yang menyeluruh berkenaan kurikulum keselamatan pesakit di sekolah perubatan sangat penting untuk memastikan terdapat peningkatan amalan keselamatan terhadap pesakit di kalangan doktor perubatan.

ATTITUDES ON PATIENT SAFETY AMONG UNIVERSITI SAINS MALAYSIA (USM) MEDICAL STUDENTS

ABSTRACT

INTRODUCTION: World Health Organization (WHO) introduced a patient safety curriculum guide for medical schools worldwide since 2009 following realizing patient safety is a universal health concern. Even though, medical schools agreed on the impact of patient safety to nurture future healthcare professional, however lack of documentation on their implementation of patient safety curriculum in their medical training. The aim of this study is to explore attitudes and its associated factors on patient safety among Universiti Sains Malaysia (USM) undergraduate medical students. METHODOLOGY: A cross-sectional study was conducted among 457 Year 2 to Year 5 medical students. The attitudes on patient safety were measured using a validated tool, Attitudes to Patient Safety Questionnaire (APSQ) III on 7 points Likert scale. The APSQ III measures 9 domains; i) patient safety training received, ii) error reporting confidence, iii) working hours as error cause, iv) error inevitability, v) professional incompetence as error cause, vi) disclosure responsibility, vii) team functioning, viii) patient involvement in reducing error, and ix) importance of patient safety in the curriculum. Each domain was interpreted as positive, neutral, or negative attitudes. Six items were reverse coded. Statistical analysis independent t-test, one-way ANOVA and Pearson correlation test were performed using Statistical Package for Social Sciences (SPSS) version 24. RESULTS: A total of 427 (93.4% response rate) out of 457 medical students from Year 2 until Year 5 voluntarily participated in this study (6.6% drop out rate). Majority of them were female 290 (67.9%), age 21 years old and above 336 (78.7%), Year 2 126 (29.5%) and scored grade B+, grade

pointer (3.33-3.66) 196 (45.9%). All were positive attitudes except for domain 5 (professional incompetence as error cause). The highest score was domain 7 (team functioning) and the lowest score was domain 5 (professional incompetence as error cause). Post-hoc analysis showed a significant mean difference of attitude to patient safety score and year of study among pre-clinical and clinical year students in five domains. There was poor positive correlation between age and domain 3 (working hours as error cause). There were also a poor positive correlation between academic performance for domain 3 (working hours as error cause) and domain 4 (error inevitability). However, attitudes on patient safety were not associated with gender. CONCLUSION: USM medical students had a positive attitude towards patient safety in general. However, there was still a room for improvement towards improvement of patient safety among medical students prior their practice as medical doctor. Therefore, patient safety curriculum need to be implemented as early as possible in the medical training. Hence, a proper documentation and a thorough curriculum review on patient safety curriculum in medical schools are crucial to ensure improvement of patient safety among medical doctors in future practise.

CHAPTER 1

INTRODUCTION

1.1 Title

Attitudes on Patient Safety among Universiti Sains Malaysia (USM) Undergraduate Medical Students.

1.2 Background of Patient Safety in Medical Education

History of awareness of patient safety aspects in health care management begins around 1990 by a landmark report entitled “To Err is Human: Building a safer health system” by the Institute of Medicine (IOM) (Lark, 2018). Despite patient safety awareness, there are still many incidences of medical errors with preventable causes. The report estimates a significant about 44,000 to 98,000 mortality rates caused by preventable causes. For example, there were cases of thrombophlebitis and blood clots in the vessels that occur to the patients while being treated in the ward. The incidents of high mortality rates driven the awareness on patient safety globally.

1.2.1 Definitions of Patient Safety

There are several patient safety definitions noted in the literature. Patient safety is defined by World Health Organization (WHO) as “prevention of errors and adverse effects to patients associated with health”. Another definition of patient safety by the Institute of Medicine (IOM) is “the prevention of harm to patients”. According to the dictionary of cancer terms, adverse event which is synonym as adverse effect is “an

unexpected medical issue that occurs during treatment either medication or others procedure". According to National Institute of Health (NIH) the adverse event also can be caused by other factors which are further classified into; mild, moderate, and severe.

Knowing the facts based on literature search on various definitions of patient safety, therefore, patient safety definition used in this study will follow the definition of terms stated in the WHO patient safety curriculum guide for medical school. Details of definition of terms will be elaborate more in operational definition subsection in Chapter 3 (Methodology).

1.2.2 WHO Stand on Patient Safety Education in Medical School

In 2009, WHO initiated and launched the WHO Patient Safety Guide to Medical Schools 20 years after the Harvard study I (WHO, 2009). WHO launched the guide in October 2009 with three main focus which was to (i) produce a holistic patient safety curriculum, (ii) upgrade patient safety globally, and (iii) nurture medical students for standard application (WHO, 2009).

This first guidebook comprises of two components; lecturer's guide and student's guide. Within 20 years, adverse events are still raising despite the awareness. WHO took the initiative to nurture future doctors as well other healthcare providers such as dentist, nurse, midwifery and pharmacist on patient safety issues to address the worldwide patient safety urgency (WHO, 2009). On top of that, a new guide was introduced which was the Patient Safety Curriculum Guide: Multi-professional version. Despite the facts on various initiatives from many countries to overcome

patient's adverse events in healthcare, the adverse events among patients are still increasing (Tingle, 2017).

1.2.3 Patient Safety Practice in Malaysia

In Malaysia, the Ministry of Health (MOH) is responsible on making plans and regulation on government healthcare services, private healthcare services, pharmaceutical as well as food safety (WHO, 2012). Other than that, MOH also collaborates with other professional bodies such Malaysia Medical Association (MMA) and Malaysia Nursing Association (MNA) on healthcare professional registration (WHO, 2012). Therefore, MOH also plays an important role conducting compulsory patient safety courses for all house officers since 2014 whereby the house officers have to sit and pass a high-stake assessment with an 80% passing mark (MOH). However, from the literature search, there is an opportunity to improve the evidence of Malaysian medical school implementation of patient safety curriculum (Sen et al., 2020).

1.2.4 Patient Safety Curriculum in USM

School Medical Sciences (SMS) of Universiti Sains Malaysia (USM) has been established for 40 years and the school uses the SPICES model curriculum. The key elements promoted in the SPICES model are, S-student centred learning, P-problem based learning, I-integrated or inter-professional teaching, C-community based education, E-elective studies and S-systematic or planned approach curriculum. Patient safety teaching topics are integrated in the curriculum during the five years of

medical training. Recently, USM conducted a pilot study pertaining to patient safety from March 2018 until September 2019 among their 406 medical students using the Massive Open Online Course (MOOC) USM platform. Thus, via this MOOC, the delivery of patient safety topics is more structured and organized. This is done following recommendations that patient safety should be implemented as early as possible in the medical training (Armitage et al., 2011; WHO, 2009). Table 1.1 shows the topics of patient safety which consists of two modules.

Table 1.1 USM Massive Open Online Course (MOOC) patient safety topics

Module 1	Module 2
• Patient safety in healthcare • Medical ethics • Professionalism • Interprofessionalism • Communication skills in patient-doctor relationship • Patient autonomy • Confidentiality • Patient right • Equity and social justice • Informed consent • Patient safety and error • Evidence-Based Medicine • Legal procedures, ethic, negligence • Etiquette and manner during clinical examination • Approach to good consultation (including dealing with errors) • Decision making • Approach to sensitive issues • Truth telling and breaking bad news	• Principles of infection control • Adverse drug reaction and drug interaction • Principle of blood transfusion and it's clinical application • Pre-transfusion testing • Complication of blood transfusion • Principles of prescribing patient education and compliance • Standard precaution for infection control • Sterilization and disinfection • Safe surgery • Anti-microbial resistance • Safe prescription • Pressure ulcer • Catheter-Related Blood Stream Infections (CRBI) and Ventilator Associated Pneumonia (VAP)

Based on the literature search, USM patient safety curriculum is aligned with the topics by Australia Patient Safety Framework (APSF), World Health Organization (WHO) patient safety curriculum for medical schools, and patient safety syllabus for house officer by Malaysia Ministry of Health (MOH) (MOH, 2016; WHO, 2009). Table 1.2 below shows the curriculum mapping between all four organization and institutions to capture the similarities or alignment of patient safety topics.

Table 1.2 Mapping patient safety curriculum topics between APSF, WHO, MOH and USM

APSEF	WHO	MOH	USM MOOC 1	USM MOOC 2
22 topics	11 topics	7 topics	16 subtopics	13 subtopics
Communicating effectively *1.Involving patients and carers as partners in healthcare *2.Communicating risk *3.Communicating honestly with patients after an adverse event (open disclosure) 4.Obtaining consent *5.Being culturally respectful and knowledgeable Identifying, preventing and managing adverse events and near misses	1.What is patient safety? 2. What is human factors and why is it important to patient safety? 3.Understanding systems and the impact of complexity on patient care 4. Being an effective team player 5.Understanding and learning from errors. 6.Understanding and managing clinical risk.	1.Overview of patient safety-the basic concepts 2.Safe surgery 3.Effective communication for improved patient safety 4.Infection prevention and control 5. Anti-microbial resistance 6.Medication safety 7.Incident report &	1.Patient safety in healthcare 2.Medical ethics 3.Professionalism 4.Interprofessionalism 5.Communication skills in patient-doctor relationship 6.Patient autonomy 7.Confidentiality 8.Patient's right 9.Equity and social justice 10.Informed consent 11.Patient safety and error 12.Evidence-Based Medicine	1.Principles of infection control 2.Adverse drug reaction and drug interaction 3.Principle of blood transfusion and it's clinical application 4.Pre-transfusion testing 5.Complication of blood transfusion 6. Principles of prescribing patient education and compliance 7.Standard precaution for infection control

*6.Recognizing, reporting and managing adverse events and near misses *7.Managing risk *8.Understanding healthcare errors *9.Managing complaints Using evidence and information 10.Employing best available evidence-based practice no 11.Using infor-mation technolo-gy to enhance safety Working safely *12.Being a team player and showing leader-ship *13.Understan-ding human factors *14.Understan-ding complex organizations 15.Providing continuity of care *16.Managing fatigue and stress Being ethical *17.Maintaining fitness to work or practise *18.Ethical behaviour and practice	7.Introductio n to quality improvement methods. 8. Engaging with patients and carers. 9.Minimizing infection through improved infection control. 10. Patient safety and invasive procedures. 11.Improving medication safety	learning from errors	13.Legal procedures, ethics, negligence 14.Etiquette and manner during clinical examination 15.Approach to good consultation (including dealing with errors) 16.Decision making 17.Approach to sensitive issues 18.Truth telling and breaking bad news	8.Sterilization and disinfection 9.Safe surgery 10.Anti-microbial resistance 11.Safe prescription 12.Pressure ulcer 13.Catheter-Related Blood Stream Infections (CRBI) and Ventilator Associated Pneumonia (VAP)

Continuing learning 19.Being a work-place learner 20.Being a work-place teacher Specific issues *21.Preventing wrong site, wrong procedure and wrong patient treatment *22.Medicating safely *16 out of 22 topics			

*originally from APSEF, was extracted to WHO patient safety curriculum guide for medical schools.

*APSEF = Australian Patient Safety Education Framework, WHO = World Health Organization, MMOH =Malaysia Ministry of Health, USM = Universiti Sains Malaysia

From the table above which compares the patient safety topics from WHO, APSEF and USM MOOC, we can see that there is an effort by USM institution to implement a proper and structured patient safety curriculum. This is important in order to produce competent and safe medical graduates who practice patient safety.

1.3 Justification of the Study

All medical schools in Malaysia are obliged to fulfil the expected requirements to be accredited by Malaysia Qualification Association (MQA). Knowing the importance of patient safety curriculum in medical schools in Malaysia, therefore proper