RELATIONSHIP BETWEEN SELF-CONCEPT, PROCRASTINATION, TEST ANXIETY, SELF-ESTEEM, AND GENDER AMONG MALAYSIAN MEDICAL UNDERGRADUATES

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ABSTRACT

Medical education is regarded as one of the most exhaustive courses. Test anxiety, which is related to demotivation, higher psychological distress, and lower academic performance is a widespread phenomenon in medical education. Failure to deal with prolong test anxiety could result in severe personal and professional consequences to medical undergraduates. This quantitative study was undertaken to build a partial least squares (PLS) model, which concurrently illustrate the direct and indirect effects of personal self-concept, active procrastination, test anxiety, explicit self-esteem, and gender on medical undergraduates. This study is interested in personal self-concept and active procrastination because they have not been investigated alongside test anxiety. Five hundred medical undergraduates from three universities in the Klang Valley participated in this study. The respondents completed a set of self-reported questionnaire that comprised Personal Self-Concept Questionnaire, Active Procrastination Scale, Test and Examination Anxiety Measure, and Rosenberg Self-Esteem Scale. Specifically, the significant differences of test anxiety between pre-clinical and clinical students, the predictive relationship among personal self-concept, active procrastination, and test anxiety, moderating effect of gender in between personal self-concept and test anxiety, and mediating effect of explicit self-esteem in between active procrastination and test anxiety were investigated. SPSS version 22 and SmartPLS 2.0 were employed to analyse the data and build the model for path analysis. The results reveal that medical undergraduates experienced moderate level of test anxiety ($M = 93.77$, $SD = 15.55$), clinical students reported significantly higher test anxiety than pre-clinical students ($t(498) = -2.30$, $p < .05$); personal self-concept and active procrastination were significantly predicted test anxiety (t-value = 6.44, $p < .001$; t-value = 5.42, $p < .001$, respectively); gender did not moderate the relationship between personal self-concept and test anxiety (t-value = .87, $p > .05$); and explicit self-esteem partially mediated the relationship between active procrastination and test anxiety (t-value = −3.89, $p < .001$). Interventions aimed at reducing the prevalence of test anxiety among medical students should consider methods that augment personal self-concept, self-esteem, and convert passive procrastination into active procrastination.

APPROVAL PAGE

I certify that I have supervised /read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, as a thesis for the fulfilment of the requirements for the degree of Doctor of Philosophy.

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DECLARATION

I hereby declare that the thesis submitted in fulfilment of the PhD degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

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LIST OF ABBREVIATIONS

APS	Active Procrastination Scale
PSCQ	Personal Self-Concept Questionnaire
RSES	Rosenberg Self-Esteem Scale
TAI	Test Anxiety Inventory
TEAM	Test and Examination Anxiety Measure
MBBS	Bachelor of Medicine and Bachelor of Surgery
MER	Minimum Entry Requirements
OSCE	Objective Structured Clinical Examination
OSPE	Objective Structured Practical Examination
MMC	Malaysian Medical Council
MOH	Ministry of Health
MOHE	Ministry of Higher Education
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
CB-SEM	Covariance Based- Structural Equation Modeling
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CI	Confidence Interval
CR	Composite Reliability
EFA	Exploratory Factor Analysis
f^2	effect size
GoF	goodness-of-fit

HTMT	Heterotrait-Monotrait Ratio of Correlations
LISREL	Linear structural relations
PCA	Principal Component Analysis
PLS	Partial Least Squares
PLS-SEM	Partial Least Squares Structural Equation Modeling
Q^2	predictive relevance
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SPSS	Statistical Package for the Social Sciences
TLI	Tucker-Lewis Index

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

The main aim of medical education is to 'train knowledgeable, competent and professional doctors equipped to care for the nation's sick, advance the science of medicine, and promote public health' (Dyrbye, Thomas, & Shanafelt, 2006, p. 354). There are a total of 32 medical schools in Malaysia. Out of the 32 medical schools, 11 are public medical schools and 21 are private medical schools (Wong & Samiah Yasmin, 2017). Approximately 19,000 students enrolled in the Bachelor of Medicine and Bachelor of Surgery (MBBS) programmes in Malaysian medical schools (Lum, 2014), a five-year bachelor degree programme before the medical students graduate and proceed to house officer training (SEGi University & Colleges, 2017; 2013/2014 Undergraduate Guidebook MBBS, 2013).

The applicants have to undergo a stringent process to get into medical schools. They must fulfil the minimum entry requirements (MER) set by Malaysian Medical Council (MMC) and pass the entrance examination and/or the aptitude test and/or the interview set by the respective medical school prior to enrolling into the MBBS programme (Malaysian Medical Council, 2013). After going through the rigorous selection process and successfully entered the medical school, the medical students have to adjust to the demanding medical education environment. The teaching and learning approaches of the MBBS programme are lectures, problem-based learning (PBL), independent learning, and clinical training. Through the integration of various

teaching approaches, medical instructors aim to enhance the medical knowledge and clinical skills of the medical students (International Medical University Malaysia, 2018).

The MBBS programme is divided into two phases, namely the pre-clinical and clinical phase. The pre-clinical phase that lasts for two years allow the medical students to acquire basic medical sciences knowledge (Cyberjaya University College, 2016). The heavy scholastic workload that evokes anxiety is always a concern among pre-clinical students. Upon the completion of the pre-clinical phase, medical students will proceed to the clinical phase, which lasts for three years. The clinical clerkships enable medical students to acquire clinical skills through practical clinical experience in the affiliate hospitals. Clinical students tend to encounter excessive emotional challenges, especially when dealing with suffering and dying patients (Wilkinson, Gill, Fitzjohn, Palmer, & Mulder, 2006). Therefore, medical students are vulnerable to psychological morbidity (Dahlin, Joneborg, & Runeson, 2007).

In the course of training the medical students, the psychological well-being of the students is of public concern because psychological health is correlated with the quality of healthcare provided by these students after they graduated from the medical school (Fahrenkopf et al., 2008). As a prominent figure who will lead the healthcare industry, medical students signify a highly selected and well-educated population under high pressures (Chandavarkar, Azzam, & Mathews, 2007). Throughout the journey of medical education, medical students have to go through numerous anxiety-provoking examinations, which include written exams, practical exams, and clinical exams (2013/2014 Undergraduate Guidebook MBBS, 2013).

The high-stakes tests, namely Objective Structured Clinical Examination (OSCE), Objective Structured Practical Examination (OSPE), Short Case assessment, Long Case assessment, and Final Professional Examination heighthen the test anxiety of medical students (Nicholson & Forrest, 2009). During OSCE, the medical student is required to perform patient encounters on a standardized (dummy) patient, as instructed by the medical examiners (Nicholson & Forrest, 2009; Tabish, 2009; Vageriya, 2018). The OSCE intensify the test anxiety of medical undergraduates as the students have to complete the tasks assigned in each station within the given time.

Unlike the OSCE which involved standardized patient, the Short Case assessment and Long Case assessment involved the real patients (Epstein, 2007; Tabish, 2009). During the assessment, the medical student is required to perform a history taking and physical examination on an actual patient, under the observation of the medical examiner (Epstein, 2007). Such practical examinations which involved the present of real patients and medical examiners are definitely an anxiety-provoking examinations. Physical symptoms, which include trembling and sweating, and psychological symptoms such as worries, tension, and lack of concentration are the common test anxiety symptoms experienced by medical students (Loh, Kavitha, & Saroja, 2008). The medical students' test anxiety is related to their self-concept (Xu, Xie, Zhao, & Xu, 2005) and self-esteem (Abdunasir Sideeg, 2015).

The self-concept of medical students plays a crucial role in shaping their motivation and aspirations (Yeung, Li, Wilson, & Craven, 2014). As one of the predictors in the study, personal self-concept refers to the way in which a person perceives oneself as an individual, whereby independent from the physical and social

environment (Goni, Madariaga, Axpe, & Goni, 2011). Personal self-concept comprises of components such as emotional adjustment, honesty, autonomy, and self-fulfilment. The development of positive self-concept is essential for better educational outcomes and good mental health (Guay, Larose, & Boivin, 2004).

Active procrastination is another predictor in the study. In dealing with heavy workloads, medical students strive hard to complete the tasks on time. In general, successfully meeting deadlines signify the productivity and self-worth of the person (Abramowski, 2014). Conversely, procrastination reflects negatively of the person's worth and value. Procrastination behaviour is commonly noticed among the medical students (Mortazavi, 2016). It is vital to note that differ from the traditional procrastination, active procrastination is an overt behavioural characteristic that takes into consideration of one's preference for time pressure, intentional decision to put off the tasks, ability to meet the deadlines, and ability to accomplish satisfactory outcomes (Choi & Moran, 2009). Active procrastinators intentionally postpone the tasks in hand and benefit from it (Alexander & Onwuegbuzie, 2007). Concisely, both active and passive procrastinators delay the tasks in hand, but "active procrastinators expect to achieve their objectives while passive procrastinators expect to be worse off due to this delay" (Kim, Fernandez, & Terrier, 2017).

As the only moderator in the study, gender brings about differences in various aspects of human development (Low & Zahari Ishakb, 2012). Gender differences in learning context have been a topic of discussion for long. Many psychological differences have been found between male and female students. Specifically, studies have reported gender differences in self-concept (Harter, 1999) and test anxiety

(Latas, Pantić, & Obradović, 2010). However, there are conflicting findings as Muthuri and Arasa (2017) revealed that there was no gender differences in self-concept and Kim (2016) indicated that there was no gender differences in test anxiety.

Lastly, as the only mediator in the study, self-esteem is known as individual judgment of personal worth or value (Alesi, Rappo, & Pepi, 2012). It is the self-evaluative component that derived from the comparison of real self and ideal self. Self-esteem is a prominent psychological aspect for health care professionals (Räty & Gustafsson, 2006). Medical students have to perceive themselves as capable to regulate their own emotion, trustworthiness, able to make decision independently, and able to achieve targets when dealing with challenging medical education. Also, medical students have to view themselves as individuals worthy of love and care before they are able to care for their patients.

1.2 Rationale of the Study

Assessments play a vital role in medical education. The aims of an assessment include to screen the aptitude of medical students and to provide feedback to the students, lecturers, and parents regarding the depth of knowledge and skills possessed by the learners (Gibbs, Brigden, & Hellenberg, 2006; Tabish, 2009; Vageriya, 2018).

During the assessment, aside from their knowledge and skills, the psychological state of the medical students is vital as their performance is mediated by self-confidence and perceptions of anxiety (Nicholson & Forrest, 2009). Therefore, it is critical for medical students to manage their test anxiety to ensure a better performance (Green, Angoff, & Encandela, 2016a). Test anxiety is worthy of

attention as a high stake exam such as OSCE seems to intensify test anxiety of the medical students (Nicholson & Forrest, 2009).

In addition to the high-stakes tests in the demanding medical education, various academic stressors which include heavy scholastic workload, high academic requirement, and concern for academic performance seem to heighthen the test anxiety of medical students (Dyrbye et al., 2005; Liew & Muhamad Saiful, 2013; Satish & Manjunatha, 2017). Furthermore, the unique challenges in medical education which include the difficulty to adjust oneself to the demanding medical training environment, lack of medical skills, and excessive emotional challenges in dealing with dying patients cause medical students more vulnerable to anxiety (Schmitter, Liedl, Beck, & Rammelsberg, 2008).

Besides of the academic stressors and unique challenges faced by the medical students, it is undeniable that the psychological aspects which include self-concept and procrastination play a role in affecting the test anxiety of students (Indu, 2017; Xu et al., 2005). The test anxiety of medical students is worthy of study as medical students are more susceptible to anxiety than non-medical students (Rosenthal & Okie, 2005) and even experienced significantly higher test anxiety than pharmacy and nursing students (Abdunasir Sideeg, 2015).

With regards to the psychological state, medical students' self-concept is imperative in shaping their motivation, aspirations, and affecting their academic performance (Yeung et al., 2014). A high level of self-concept motivates students to be more confident and encourages them to pursue their goals despite the inevitable obstacles encountered in the academic setting (Ommundsen, Haugenb, & Lundc,