

**DEVELOPMENT, VALIDATION AND
EVALUATION OF A PROFESSIONAL
RESILIENCE TRAINING MODULE FOR
MEDICAL INTERNS**

NURHANIS SYAZNI BINTI ROSLAN

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RESILIENCE TRAINING MODULE FOR
MEDICAL INTERNS**

by

NURHANIS SYAZNI BINTI ROSLAN

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LIST OF ABBREVIATIONS

ACGME	Accreditation Council for Graduate Medical Education
AMOS	Analysis of Moment Structure
ANCOVA	Analysis of covariance
ANOVA	Analysis of variance
APA	American Psychological Association
AT	As treated
AUC	Area under the curve
AVE	Average Variance Extracted
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CBI	Copenhagen Burnout Inventory
CCHT	Certificate Completion of Housemanship Training
CCP	Certificate Completion of Posting
CD-RISC	Connor Davidson Resilience Scale
CerQUAL	Confidence in the Evidence from Reviews of Qualitative Research
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CGPA	Cumulative Grade Point Average
CI	Confidence interval
CLT	Cognitive load theory
CONSORT	Consolidated Standards of Reporting Trials
COPE	Coping Orientation to Problems Experienced
COR	Conservation of Resources
CPD	Continuous Professional Development
CR	Composite Reliability
CVI	Content Validity Index

DASS	Depression, Anxiety and Stress Scale
DEAL	Detection of stressor-Evaluation of stressor-Action towards stressor-Learning through reflection
Deff	Design effect
df	Degree of freedom
DSM-5	Diagnostic and Statistical Manual of Mental Disorders 5
EQ	Emotional quotient
FVI	Face Validation Index
GAS	General Adaptation Syndrome
GSQ	General Stressor Questionnaire
HADS	Hospital Anxiety and Depression Scale
HRPZ II	Hospital Raja Perempuan Zainab II
HUSM	Hospital Universiti Sains Malaysia
I-CVI	Item/topic-level Content Validity Index
I-FVI	Item/topic FVI
ICD	International Classification Diseases
IDI	In-depth interview
IQ	Intelligence quotient
ITT	Intention-to-treat
JD-R	Job Demands-Resources
MAR	Missing at random
MBI	Maslach Burnout Inventory
MCAR	Missing completely at random
MI	Multiple imputation
MNAR	Missing not at random
MOH	Ministry of Health
MOHE	Ministry of Higher Education

OR	Odds ratio
POB	Positive organizational behaviour
PP	Per-protocol
PPS	<i>Pegawai Perubatan Siswazah</i>
Pro-ReST	Professional Resilience Skills Training
PROSPERO	International Prospective Register of Systematic Review
QUAL	Qualitative
QUAN	Quantitative
RCT	Randomized controlled trial
RMSEA	Root Mean Square of Error Approximation
ROC	Receiver operating characteristic
RR	Relative risk
S-CVI/Ave	Scale/module-level CVIs using the average calculation method
S-CVI/UA	Scale/module-level CVIs using the universal agreement method
S-FVI(Ave)	Scale/module FVI using the average calculation method
S-FVI/UA	Scale/module FVI using the universal agreement method
SD	Standard deviation
SJT	Situational judgement test
SMD	Standardized mean difference
SPSS	Statistical Software for the Social Sciences
TLI	Tucker-Lewis Index
UK	United Kingdom
US	United States

LIST OF SYMBOLS

Cronbach's α	Cronbach's alpha
n	Sample size
p	p-value
R ²	R-squared (coefficient of determination)
η^2	Partial eta-squared
χ^2/df	Chi-square / degree of freedom

**KAJIAN PEMBANGUNAN, KESAHAN DAN PENILAIAN KEBERKESANAN
SEBUAH MODUL KEBINGKASAN PROFESIONAL UNTUK PEGAWAI
PERUBATAN SISWAZAH**

ABSTRAK

Latihan pegawai perubatan siswazah (PPS) ialah satu tempoh penyeliaan kemahiran yang berstruktur selepas fasa ijazah perubatan. PPS bekerja dalam tempoh yang lama sambil melalui proses pembelajaran yang padat dan pada masa yang sama, menyelamatkan nyawa pesakit. Tanggungjawab yang pelbagai ini mendedahkan mereka kepada risiko gejala kesihatan mental. Dalam mendepani senario ini, kajian telah menghubungkan peranan kebingkasan dalam membantu individu untuk menghadapi cabaran. Dalam kajian ini, penyelidik ingin membangunkan sebuah modul yang berasaskan bukti dan berkesan untuk meningkatkan kebingkasan PPS. Dalam fasa pembangunan, penyelidik telah menggunakan kaedah gabungan triangulasi. Penyelidik menjalankan kajian rentas di beberapa hospital untuk mengetahui kelaziman dan faktor peramal sindrom lesu upaya, kemurungan, keresahan dan stres di kalangan PPS. Penyelidik kemudian menjalankan kajian temuduga mendalam (IDI) untuk mengetahui faktor pengupayaan dan penghalang kebingkasan dalam latihan PPS. Modul Latihan Kemahiran Kebingkasan Profesional (*Pro-ReST*) kemudian direka berpandukan dapatan kajian dan model pendidikan. Penyelidik kemudiannya menjalankan kajian kesahan kandungan bersama pakar-pakar dalam aspek latihan PPS dan kesahan kefahaman bersama graduan ijazah perubatan. Berpandukan modul yang telah dibaiki dari kajian kesahan, penyelidik menjalankan kajian klinikal terkawal rawak (RCT) dan kajian diari (melalui kaedah gabungan pengukuhan) bersama PPS dari dua buah hospital untuk tempoh masa 10 minggu. Kajian Fasa 1 mendapati kadar kelaziman sindrom lesu upaya, kemurungan, keresahan dan stres adalah tinggi di kalangan PPS. Tahap

kebingkasan yang rendah dan kaedah menangani yang negatif secara konsisten telah menyumbang kepada sindrom lesu upaya, kemurungan, keresahan dan stres. Kajian IDI mendapati kebingkasan dalam latihan PPS tidak hanya bergantung kepada kesungguhan, tetapi juga ketahanan, kemahuan untuk menjadi lebih baik, kemahiran muhasabah dan penyeimbangan. Modul Pro-ReST yang kemudiannya dibangunkan dari model DEAL (*Detection, and Evaluation of stressor, Action and Learning*), memfokuskan kepada kemahiran daya tindak. Modul ini mendapat indeks kesahan kandungan dan kesahan kefahaman yang sangat baik. Kajian RCT dalam Fasa 3 mendapati modul ini meningkatkan tahap kebingkasan, kaedah mengatasi secara merancang dan mengurangkan tahap keresahan, stres, berjenaka, mengalihkan perhatian, penafian, menangani secara mengekang, dan melepaskan perasaan dalam kumpulan intervensi jika dibandingkan dengan kumpulan kawalan. Namun, modul ini didapati meningkatkan kaedah mengatasi secara menyalahkan diri dalam kumpulan intervensi. Kajian diari mendapati ramai peserta menjadi lebih peka terhadap sumber stres dan dapat menilai kaedah menangani stres yang mereka lakukan. Secara keseluruhan, modul *Pro-ReST* didapati berkesan dalam meningkatkan kebingkasan PPS. Namun, kebingkasan PPS bukanlah satu penyelesaian menyeluruh bagi gejala kesihatan mental, tetapi lebih berkesan sekiranya dibangunkan bersama pendekatan peringkat organisasi.

DEVELOPMENT, VALIDATION AND EVALUATION OF A PROFESSIONAL RESILIENCE TRAINING MODULE FOR MEDICAL INTERNS

ABSTRACT

Medical internship is a period of structured supervised practical training after the completion of medical school. Interns face long hours, exponential knowledge growth, and at the same time saving lives of patients. This overwhelming responsibility sets the stage for them to develop mental health problems. In the alarming scenario of mental health problems, research have highlighted the role of resilience in helping individuals to thrive in adversities. This study aims to develop an evidence-based and effective training module to promote professional resilience among interns. In the development phase, the researcher adopted the mixed method triangulation study design. The researcher conducted a multi-centre cross-sectional study to examine the prevalence and predictors of burnout, depression, anxiety and stress among medical interns. The researcher then conducted an in depth interview (IDI) study to explore the enablers and barriers to resilience development in the internship training. The Professional Resilience Skills Training (Pro-ReST) module was then designed guided by the findings from the mixed method study and educational model. The researcher conducted content validation with experts related to internship training and face validation with graduated medical students. Based on the refined module, the researcher conducted a parallel single-blinded placebo controlled randomized controlled trial (RCT) and diary study (embedded mixed method study) with interns from two training hospitals over a period of 10 weeks. In Phase 1, the findings revealed a high prevalence of interns with depression, anxiety, stress and burnout symptoms. Low level of resilience and maladaptive coping strategies consistently predicted burnout, depression, anxiety and stress in the internship training. The IDI findings revealed that resilience development during internship is not only driven by tenacity, but also hardiness, growth, reflective skills and control. The Pro-ReST

module that was developed based on the DEAL model (Detection, and Evaluation of stressor, Action and Learning), focused on coping skills, and had an excellent Content and Face Validity Index. In Phase 3, the RCT revealed a significantly higher resilience level, planning and lower anxiety, stress symptoms, humour, self-distraction, denial, restrain, and venting in the intervention arm as compared to the control arm. However, the module also increased self-blame coping in the intervention group. The diary study revealed that many participants were more aware of their stressors and able to evaluate their coping strategies. This study found that the Pro-ReST module is effective in enhancing resilience among interns. However, interns resilience is not the total solution to mental health problems, and best works alongside systemic intervention at the organizational level.

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter outlines the research background, problem statement, and significance of the study. The general and specific objectives are listed followed by the respective research questions and hypotheses. At the end of the chapter, an explanation is presented for each measured variable under the operational definitions.

1.2 Research background

The health care environment with high workloads, long hours, short patient consultation time, and electronic medical records predisposes physicians to various mental health problems (West, Dyrbye, & Shanafelt, 2018). Studies have found that physicians to be at significantly higher risk of experiencing burnout and anxiety when compared to the general population (Beyond Blue, 2013; Shanafelt, Hasan, et al., 2015). It has also been reported that 28.8% of physicians experienced symptoms of depressive (Mata et al., 2015). A longitudinal study from 2011 to 2014 found an increasing trend of mental health problems among physicians (Shanafelt, Hasan, et al., 2015). Physicians suicide rates are also higher than the general population and the presence of work-related crisis and mental health issues contributes to a greater likelihood of suicide among physicians (Gold, Sen, & Schwenk, 2013).

Despite the worrying prevalence of mental health problems, several studies have proposed that some physicians were able to thrive in these situations (Low et al., 2019; Rotenstein et al., 2018). The topic of resilience has gained attention in the medical literature over the past decade particularly following the article "If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians" (Zwack & Schweitzer, 2013). Building on the foundation of

previous resilience studies that focused on children who grew up in a high-risk environment (Werner, 1989), researchers began to explore how resilient physicians face adversity (Back, Steihauser, Kamal, & Jackson, 2016; Nedrow, Steckler, & Hardman, 2013). Resilience gained more attention when growing quantitative studies reported significant negative correlations between resilience and mental health problems such as burnout, depression, and stress (McCain, McKinley, Dempster, Campbell, & Kirk, 2018; Simpkin et al., 2018).

Resilience research has opened up more understanding of mental health by looking at both dimensions of mental illness and well-being (Ungar, 2012). Previously resilience was seen as a stable trait or personal quality (Luthar, Cicchetti, & Becker, 2000), but it is now increasingly viewed as a dynamic process of adaptation to adversity (American Psychological Association, 2011; Richardson, Neiger, Jensen, & Kumpfer, 1990). Resilience studies in the general context proposed four common themes that are control, involvement, resourcefulness and growth (Wadi, Nordin, Roslan, Tan, & Yusoff, 2020). However, studies in the physician context have proposed different sets of themes (Back et al., 2016; Epstein & Krasner, 2013; O'Dowd et al., 2018) and to date, there is no common framework for understanding resilience development in the context of the medical profession.

According to several theories such as the Transactional Theory of Stress and Coping by Lazarus and Folkman (1984), the Conservation of Resources Theory by Hobfoll (1989), and the Coping Reservoir model by Dunn, Iglewicz, & Moutier (2008), coping mechanisms play a central role in the development of resilience. Studies have also found that problem-focused coping predicted resilience, and resilience predicted psychological well-being in the adult population (Mayordomo, Viguer, Sales, Satorres, & Meléndez, 2016). Maladaptive coping strategies such as behavioural disengagement, denial, self-blame and substance abuse, have been shown to

positively correlate with burnout among physicians with mixed results (McCain et al., 2018; Wallace & Lemaire, 2016).

The changing paradigm of resilience from trait to process led to an understanding that resilience can be learned (Garcia-Dia, DiNapoli, Garcia-Ona, Jakubowski, & O'Flaherty, 2013). This is further supported by a meta-analysis which concluded that resilience development is more influenced by trainable protective factors such as self-efficacy and positive affect as compared to the reduction of risk factors or demographic traits (Lee et al., 2013). Individual-directed interventions are effective in enhancing resilience at the workplace with varying effects (Joyce et al., 2018; Leppin et al., 2014). These interventions include psychosocial skills, mindfulness, stress management, relaxation, coaching, simulation-based, narrative and coping skills training (Fox et al., 2018; Lee, Kuo, Chien, & Wang, 2016). However, in burnout interventions among physicians, the organization-directed interventions were more effective as compared to the individual-directed interventions which only produced small effect sizes (Panagioti et al., 2017).

1.3 Problem statement

Most research on physician's mental health and resilience was conducted in the contexts of physicians (residents, post graduate trainees, and specialists) from the developed countries (McKinley et al., 2019; Rotenstein et al., 2018). However, theories and studies have proposed a greater risk for organizational newcomers, (such as the medical interns) to develop mental health problems in relative to the organizational insiders (such as the senior physicians) (Dunford, Shipp, Boss, Angermeier, & Boss, 2012; Johnson & Hall, 1988; Karasek, 1979). A national study conducted among Malaysian interns in 2017 have revealed the prevalence of interns with depression, anxiety, and stress symptoms among interns to be 29.7%, 39.9%,

and 26.2%, respectively (Ismail et al., 2020). However, there are no recent national data available for medical interns undergoing the new employment system. Starting from 2017, interns in Malaysia are appointed by the contract system and the selection to the permanent post of medical officers depends on several factors that include assessment during internship (Ministry of Health Malaysia, 2017b, 2017a).

While resilience has been proposed as context-specific (Luthar et al., 2000; Vanderbilt-Adriance & Shaw, 2008), research has not explored how resilience is developed during internship. Such understanding is important to guide the development of an intervention that suits medical interns. Resilience intervention is pivotal especially in the first six months of the training where the transition stage is critical and burnout is the highest (Nelson, 1987; Zuraida & Zainal, 2015).

Studies have also demonstrated physicians reluctance in seeking mental health services due to time constraints, concerns about lack of confidentiality, and stigma (Cohen & Patten, 2005; Hu et al., 2012). Hence, resilience intervention is an important measure alongside mental health services. Such importance is reflected by the Accreditation Council for Graduate Medical Education (ACGME) move to include resilience and well-being measures as part of the Common Program Requirements for the residency and fellowship programs in the United States (Accreditation Council for Graduate Medical Education, 2020).

The majority of the described resilience interventions in the literature requires a continuous participation over several weeks or months (Leppin et al., 2014). This may not be feasible in the context of a shift system with high workloads and ongoing assessments (Ministry of Health Malaysia, 2017b, 2017a). On top of that, most of the described resilience interventions in the general and physicians contexts were found to have poor methodological rigour such as weak experimental designs, small sample

sizes, and inadequate descriptions for replication (Fox et al., 2018; Moorfield & Cope, 2020; Venegas, Nkangu, Duffy, Fergusson, & Spilg, 2019). Hence, there is a need to develop a valid educational intervention to enhance resilience skills among medical interns in the Malaysian training context.

Building on the introduction and gaps above, this study was conducted in three phases:

- i. In Phase 1, the researcher conducted a mixed method study to examine the mental health problems among medical interns (burnout, depression, anxiety and stress) and factors that facilitate resilience development in the internship context. The researcher then conducted a meta-synthesis on common themes of physician resilience and combined the findings with educational theories to develop the Professional Resilience Skills Training (Pro-ReST) module.
- ii. In Phase 2, the researcher conducted a content and response process validation study, followed by a pilot study to examine the validity evidence of the module.
- iii. In Phase 3, the researcher conducted a randomized controlled trial to evaluate the effectiveness of the module. The researcher also conducted a supplemental qualitative study to explore the module role in promoting resilience development among the participants.

1.4 Significance of the study

- i. The findings from the Phase 1 are important in understanding the extent of mental health problems experienced during internship training at a national scale. The factors and associations described in the findings may also informed medical schools about the relevant aspects to be addressed during medical training or intern shadowing.

- ii. The understanding of resilience development among medical interns will fill some gaps in the literature and help to inform the curriculum developers or policymakers on a context-sensitive preventive measures or interventions in the Malaysian healthcare system context.
- iii. The Pro-ReST module, which is developed from the study serves as a valid and effective educational intervention to foster resilience skills (coping). The once-off delivery of the module is suitable for the medical interns training schedule and can be potentially delivered in other training institutions with a minimal training.
- iv. The Pro-ReST module can potentially serve as a well-being measure where interns can discuss their mental health issues without fear of stigma. As mental health problems are linked with increased medical errors and work ability, the module may indirectly improve patient care quality through the reduction of medical errors and increased performance (Bernburg, Vitzthum, Groneberg, & Mache, 2016; Menon et al., 2020; West, Tan, Habermann, Sloan, & Shanafelt, 2009). The module may also play some role in reducing attrition issues among medical interns and the cost of replacing medical interns in the healthcare system (Free Malaysia Today, 2015).

1.5 General objective

To develop an evidence-based and effective training module to promote professional resilience among medical interns.

1.6 Specific objectives

Phase 1: Development of the module

1.1 To investigate the

- a. prevalence of mental health problems (psychological demands) among Malaysian medical interns.

- b. perceived stressors (job-related demands) of Malaysian medical interns.
- c. coping strategies (resources) used by Malaysian medical interns.
- d. resilience mean score of Malaysian medical interns
- e. relationship between training characteristics, personal demographics, undergraduate training background, resilience level and maladaptive coping strategy scores with mental health problem prevalence in Malaysian medical interns.

1.2 To explore factors that influence professional resilience (enablers) in Malaysian medical interns through in-depth interviews.

1.3 To design Professional Resilience Skills Training module (Pro-ReST) based on the findings from 1.1 and 1.2, literature review and educational theories.

Phase 2: Validation of the module

2.1 To investigate the validity of the Pro-ReST intervention module in terms of its content.

2.2 To investigate the validity of the Pro-ReST intervention module in terms of its response process.

Phase 3: Evaluation of the module

3.1 To determine the level of

- a. coping strategies (primary outcome)
- b. resilience score (primary outcome)
- c. burnout (secondary outcome)
- d. depression (secondary outcome)
- e. anxiety (secondary outcome)
- f. stress (secondary outcome)

among Malaysian medical interns between the intervention and control groups.

3.2 To explore impacts of the Pro-ReST intervention module impact on resilience development among Malaysian medical interns in the intervention group.

1.7 Research questions

The research questions are listed based on the specific objectives in 1.6.

Phase 1: Development of the module

1.1.a - What is the prevalence of mental health problems among Malaysian medical interns?

1.1.b - What are the commonly perceived stressors in Malaysian medical interns?

1.1.c - What are the common coping strategies utilized by Malaysian medical interns?

1.1.d - What is the mean resilience score of Malaysian medical interns?

1.1.e - What are the relationship between training characteristics, personal demographics, undergraduate training background, resilience level and maladaptive coping strategy scores with mental health problem prevalence among Malaysian medical interns?

1.2 - How is resilience conceptualized in the context of Malaysian medical interns?

Phase 2: Validation of the module

2.a - 2.b -What is the validity evidence for the Pro-ReST intervention module?

Phase 3: Evaluation of the module

3.1.a - Is there any difference in coping strategies utilized between the intervention and control group?

3.1.b - Is there any difference in resilience score between the intervention and control group?

3.1.c - 3.1.f - Is there any difference in mental health problem prevalence between the intervention and control group?

3.2 - How would the participants describe their perception towards stressor and behavioural change (coping strategies) after the intervention?

1.8 Research hypotheses

Hypothesis 3.1:

- a. The mean maladaptive coping strategies score are lower in the intervention group than in the control group.
- b. The mean resilience score is higher in the intervention group than in the control group.
- c. The mean burnout score is lower in the intervention group than in the control group.
- d. The mean depression symptom score is lower in the intervention group than in the control group.
- e. The mean anxiety symptom score is lower in the intervention group than in the control group.
- f. The mean stress symptom score is lower in the intervention group than in the control group.

1.9 Operational definitions

- i. Stressor

A stressor is an event that significantly disrupts an individual dynamic system resulting in a lower function than the optimum level (Oken, Chamine, & Wakeland, 2015). More simply, a stressor is an external or internal agent that causes stress (Lazarus, 1993b). In this study, seven types of stressors are examined; performance pressure, work-

family conflicts, colleagues, superiors, bureaucratic constraints, poor job prospect, and family (Yusoff & Esa, 2011).

ii. Coping strategies

Lazarus (1993a) defined coping as "an ongoing cognitive and behavioural efforts to address specific external or internal demands that are appraised as taxing or exceeding the individual resources". There are several dimensions proposed to categorized coping strategies such as problem- and emotion-focused coping, and engagement-disengagement coping (Carver, 1997; Tobin, Holroyd, Reynolds, & Wigan, 1989). In this study, 15 types of coping strategies are examined based on three dimensions:

- a. problem-focused coping (active coping, planning coping, instrumental support, and restraint)
- b. emotion-focused coping (acceptance, emotional support, humour, positive reframing, and spirituality)
- c. maladaptive coping (behavioural disengagement, denial, self-blame, self-distraction, substance abuse, and venting of emotion)

iii. Professional resilience

Resilience has been proposed as a context-specific construct (Lee et al., 2013; Luthar et al., 2000). Adapting from the definition by American Psychological Association (2011), professional resilience in this study is defined as "the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress during internship" and is examined using a general unidimensional validated resilience scale.

iv. Mental health problems

The World Health Organization defined mental health as the "state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses

of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (World Health Organization, 2004). While there is no standard definition on mental health problems or mental disorders, the International Classification Diseases (ICD) 11 broadly defined it as syndromes identified as clinically significant disturbance in a individual's cognition, emotion regulation, or behaviour that is linked with impairment in important areas of functioning such as personal, educational, social, and occupational (World Health Organization, 2020). The list of mental health problems in ICD 11 is exhaustive. However, the study focuses on common mental health problems among physicians that are depression, anxiety, stress, and burnout. The operational definitions for each problems are discussed in the following subsections.

v. Burnout

Burnout is defined as a syndrome resulting from chronic workplace stress that is not being successfully managed and is characterized by overwhelming exhaustion, negativism or cynicism towards own's job, and reduced personal efficacy. ICD 11 categorized burnout as an occupational phenomenon rather than disease (World Health Organization, 2020). In this study, burnout is measured by three subdimensions referring to the possible origins of burnout; personal-, work-, and patient-related burnout (Kristensen, Borritz, Villadsen, & Christensen, 2005).

vi. Depression

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM) 5, depression is characterized by distinct episodes of two weeks (minimum) duration involving changes in affect, cognition and neurovegetative functions, and inter-episode remissions. Diagnosis includes having five or more symptoms such as depressed mood, weight changes, changes in sleeping pattern, psychomotor agitation or retardation, loss of energy, lack of focus, and recurrent suicidal ideation,

in which these symptoms cause clinically significant distress, and are not attributable to any substance or medical condition (American Psychiatric Association, 2013). As the diagnosis of depression requires a formal assessment, this study measures depressive symptoms using a screening instrument, Depression, Anxiety and Stress Scale (DASS-21). A positive screening does not indicate a depression diagnosis but reflects the presence and severity of symptoms (Lovibond & Lovibond, 1995).

vii. Anxiety

Anxiety disorders include disorders that share features of extreme fear, anxiety and behavioural disturbances. Based on DSM-5, generalized anxiety disorder is diagnosed when an individual had excess anxiety or worry that is difficult to control and usually lasts for a minimum of six months, and is associated with symptoms such as restlessness, fatigue, lack of focus, irritability, muscle tension, and sleep disturbance, causing clinically significant distress that cannot be attributable to substance effect, medical condition or other mental disorders (American Psychiatric Association, 2013). Similar to depression, a diagnosis of anxiety requires a clinical assessment. Hence, this study measures anxiety symptoms using a screening instrument, DASS-21. A positive screening does not indicate an anxiety diagnosis but reflects the presence and severity of symptoms (Lovibond & Lovibond, 1995).

viii. Stress

Stress is defined as the bodily process following the circumstances that exert physical or psychological demands on a person (Seyle, 1956). Similar to depression and anxiety, stress is measured in this study using a screening instrument, DASS-21. A positive screening indicates a state of arousal and tension with a low threshold to become disappointed or upset (Lovibond & Lovibond, 1995).

ix. Validity evidence

Validity can be defined as "an interpretive argument to which evidence is collected in support of the proposed inferences" (Kane, 1990). Validity evidence may originate from five sources that are content, response process, internal structure, relational, and consequential (Cook & Beckman, 2006). In this study, two validity aspects that are relevant to module development are assessed; content and response process (Ozair, Baharuddin, Mohamed, Esa, & Yusoff, 2017). Content validity refers to the measurement of the content representativeness or content relevance of the elements in an instrument or module (Lynn, 1986). Previously known as "face validity", the response process refers to the determination of the appropriateness, sensibility, or relevance of the elements in the module as they appear to the participants of the module (Cook & Beckman, 2006; Holden, 2010).

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter begins by presenting an overview of burnout syndrome as the most common mental health issue among physicians. In addition, this chapter also briefly discusses on other common mental health issues among physicians such as stress, depression, and anxiety. Theories that explain mental health problems include biological, behavioural, cognitive, humanistic, and psychodynamic theories. However, as the researcher intends to develop an intervention in the form of an educational module, the review focuses on the cognitive theories. This chapter then introduces internship training in the Malaysian healthcare context and discusses on the interns vulnerability to develop mental health problems. The resilience construct is later discussed as a growing focus in the current literature to address mental health issues, generally and specifically in the physicians context. As the resilience intervention developed from this study focuses on coping skills, the review also expands on coping skills constructs and guiding principles in designing effective workplace training. At the end of this chapter, a conceptual framework is presented to summarize the key points from the literature review and highlight the gaps in the current understanding of resilience in the internship training.

2.2 Mental health issues among physicians

2.2.1 Burnout

Introduction and prevalence

Burnout has been increasingly researched since the 1970's in the human service sectors and care-giving sectors. These job sectors centre very much on the relationship between a provider and recipient. Unlike mental health knowledge that

expanded from scholarly and academic theories, burnout research was initially derived from employees experience at the workplace (Maslach, Schaufeli, & Leiter, 2001). Burnout is first described in the literature by Herbert Freudenberger, a psychiatrist who observed exhaustion among committed workers in the health clinics, and as a result of that became even more exhausted, had cynical outlook on their job that they used to love, and became less effective on their work productivity (Freudenberger, 1975).

The concept of burnout was further expanded by Maslach & Jackson (1981). After nearly five decades, burnout was included in the International Classification Diseases (ICD) 11 in 2020, as an occupational phenomenon, that does not apply to other life experiences and is defined as a syndrome resulting from chronic workplace stress that is not being successfully managed. It is characterized by overwhelming exhaustion, negativism or cynicism towards own's job, and reduced personal efficacy. (World Health Organization, 2020).

A study comparing burnout prevalence in physicians and the general population in the US found that physicians were significantly at a higher risk of experiencing emotional exhaustion (32.1% vs 23.5%, $p < 0.001$), depersonalization (19.4% vs 15.0%, $p < 0.001$), and overall burnout (37.9% vs 27.8%, $p < 0.001$) (Shanafelt et al., 2012). Physicians were reported to be 1.97 times more likely to experience burnout when compared to the general US workers, even after controlling for age, gender, relationship status, and hours worked per week (Shanafelt, Hasan, et al., 2015). Shanafelt et al. (2012) also found that the prevalence difference between physicians and the general population was only limited to burnout, and there was no difference in depression symptoms or suicidal ideation, suggesting that distress among physicians can be largely attributed to burnout.

A national study among the US physicians reported an increasing trend of burnout prevalence from 45.5% (2011) to 54.4% (2014) (Shanafelt, Hasan, et al., 2015). Although burnout research has mostly been conducted in the US contexts, several other studies echoed a similar picture. A large-scale study among the United Kingdom (UK) physicians reported a burnout prevalence of 31.5% (McKinley et al., 2020). A systematic review of physicians in France reported a pooled prevalence estimate at 49.0% (Kansoun et al., 2019). Another systematic review on studies done among physicians in China revealed an alarming burnout prevalence ranging from 66.5% to 87.8% (Lo, Wu, Chan, Chu, & Li, 2018). A national study in Croatia reported that 58%, 29%, and 52% of its physicians had emotional exhaustion, depersonalization, and reduced efficacy respectively (Japec et al., 2019). Studies conducted in the Malaysian contexts were limited to the physicians in the paediatric departments (25.4%) (Khoo et al., 2017) and interns (36.6%) (Al-Dubai, Ganasegeran, Perianayagam, & Rampal, 2013). A systematic review of 182 studies across 45 countries reported a burnout prevalence ranging from 0% to 80.5% (Rotenstein et al., 2018), while a meta-analysis on residents burnout reported that the aggregate burnout prevalence was 51.0% (Low et al., 2019).

Research has also looked at the workplace, specialty, and geographical difference in burnout prevalence. Several studies in China reported a significantly higher prevalence of burnout among physicians working in tertiary hospitals as compared to their colleagues from primary care and smaller hospitals (Lo et al., 2018). A study in the UK found that physicians in primary care had significantly higher mean score of burnout when compared to the physicians in the hospitals (McCain et al., 2018). In terms of specialty, Shanafelt et al. (2012) reported that after adjusting for age, gender, on-call schedule, relationship status, working hours, and years of experience, physicians practicing in emergency medicine (odds ratio [OR], 3.18; $p < .001$), internal medicine (OR, 1.64; $p < .001$), family medicine (OR, 1.41; $p = 0.001$), neurology (OR,

1.47; $p=.01$), or radiology (OR, 1.46, $p=.02$) were at a higher risk to develop burnout. Similarly, studies in the UK and France also reported the highest burnout prevalence among emergency physicians (Kansoun et al., 2019; McKinley et al., 2020). A meta-analysis on burnout among residents found no significant difference in the aggregate prevalence between the medical residents (50.13%) and surgical residents (53.27%). The same meta-analysis also reported geographical difference in burnout residents between US residents (51.64%), European residents (27.72%), and Asian residents (57.18%) (Low et al., 2019).

Higher education (having a master degree) was associated with a lower risk of burnout in the nonphysician cohort. However, this was not the case for physicians, suggesting that burnout in the context of medicine is unique and can be lingering through a physician career (Dyrbye et al., 2011; Shanafelt et al., 2012).

Constructs and theories related to burnout development

Maslach and colleagues (2001) posit that exhaustion (feeling overextended and depleted from own personal resources) is the central component and the most common reported symptom of burnout. Exhaustion often triggers burnt-out individuals to cope by distancing themselves from the work responsibilities, either cognitively or emotionally (depersonalization). This is supported by the strong correlation between exhaustion and depersonalization across burnout studies (Maslach et al., 2001; Schonfeld, Verkuilen, & Bianchi, 2019). Reduced personal efficacy occurs when burnt-out individuals feel incompetent or lacking in achievement or productivity (Maslach et al., 2001). Burnout is commonly measured using the Maslach Burnout Inventory (MBI) in which it has three domains similar to the definition (Maslach & Jackson, 1981).

While researchers are unanimous that exhaustion is the core construct of burnout, there are some diverging views on depersonalization and reduced personal efficacy constructs (Garden, 1987; Kristensen et al., 2005). Through her analysis, Garden (1987) argued that depersonalization is not a salient construct in the nonhuman service sectors. Kristensen and colleagues (2005) argued that rather than being part of burnout syndrome, depersonalization is more of a coping strategy to address burnout, and reduced personal efficacy reflects more of a consequence of burnout. They argued that there is a mixture of state, coping and effect constructs and forwarded a new framework through the Copenhagen Burnout Inventory (CBI). The framework maintained exhaustion as the central construct of burnout and introduced subdimensions of burnout origins; personal-, work-, and client-related burnout (Kristensen et al., 2005). Other scales that deviate from the three-dimensional MBI construct of burnout include the Oldenburg Burnout Inventory (exhaustion and disengagement), and Shirom-Melamed Burnout Measure (fatigue, emotional exhaustion and cognitive weariness) (Halbesleben & Demerouti, 2005; Shirom & Melamed, 2006).

Despite that, the three-dimensional construct (exhaustion, cynicism, and reduced personal efficacy) remains the most dominant theoretical framework in burnout research and MBI remains the most utilized scale in burnout measurement (Alarcon, 2011; Alarcon, Eschleman, & Bowling, 2009; Koutsimani, Montgomery, & Georganta, 2019; Worley, Vassar, Wheeler, & Barnes, 2008). In their recent publication, Maslach and Leiter (2016) emphasized the significance of the three-dimensional MBI construct as it places the respondent stress within their social context and include the respondent's perception of themselves (inefficacy) and others (depersonalization).

Theories related to burnout development

Three theoretical theories that dominate the discussion on burnout development are Job Demands-Resources (JD-R) theory, Conservation of Resources (COR) theory, and Coping Reservoir model (Maslach & Leiter, 2016).

JD-R theory (Figure 2.1) recognized job demands and job resources as the two risk factors for outcomes such as job stress and burnout. Job demands include physical, psychological, and organizational aspects of a job which require an individual to spend effort or skills on it. Job resources can be categorized into organizational (e.g. job security or salary raise), work structure (e.g. role clarity), task (e.g. autonomy and skills variety), and interpersonal (e.g. superiors and co-workers). JD-R theory proposed that high job demands and depleting job resources can interact to produce job strain. The theory also posits the buffering effect of job resources in promoting engagement, low cynicism, and high performance (the antithesis of burnout) (Bakker & Demerouti, 2007).

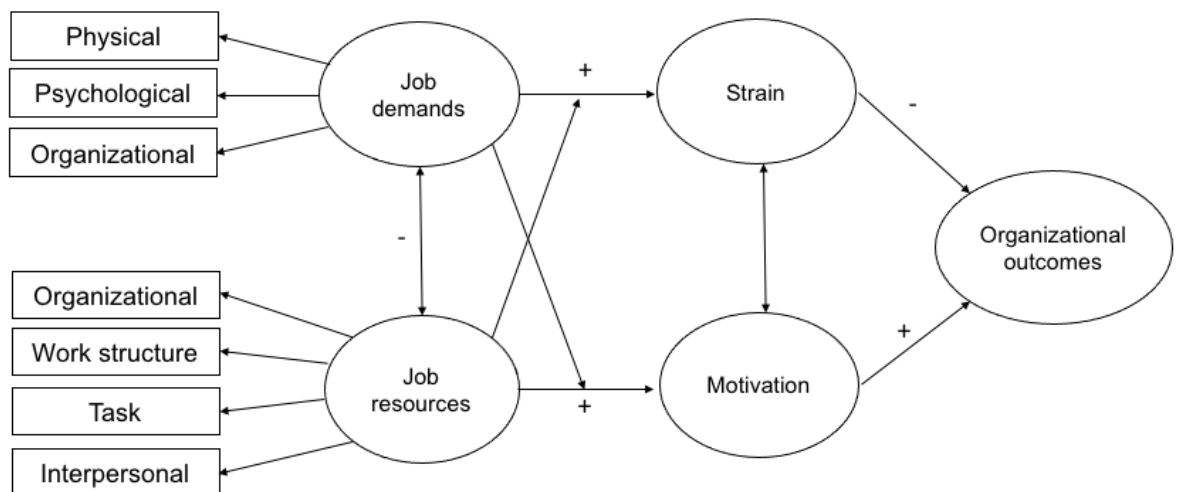


Figure 2.1: The Job Demand-Resource theory. Adapted from Bakker and Demerouti (2007).

The COR theory was initially put forward to explain on the occurrence of stress (Hobfoll, 1989). Later on, COR theory has become one of the major theories that shaped the discussion on burnout issues at the workplace (Hobfoll, 2011). In the COR theory, Hobfoll (1989) argued that individuals will actively try to protect and build resources for themselves, and any threats are perceived as a potential or cost an actual loss of the resources. He proposed that stress can occur in three possible situations; when individuals experience loss of resources, when their resources are threatened or when individuals use their resources but did not obtain gain. This actual or perceived loss or reduced gain is deemed as a stress trigger (Hobfoll, 1989; Krohne, 2001). Resources can be in the form of objects, conditions (such as employment), personal (such as mastery), or energy (facilitating factors to other resources such as money) (Hobfoll, 1989; Hobfoll, Johnson, Ennis, & Jackson, 2003; Krohne, 2001). There are several important principles in the theory:

- Hobfoll (1989) proposed that loss of resources is the main source of stress. Loss can be in the form of losing a significant person, employment or norms of life. The theory did not regard change, life transitions or challenge as stressful (Hobfoll, 1989). This contradicts another theory that posits life changes in life can be stressful if an individual unwillingly has to readjust themselves (Holmes & Rahe, 1967).
- When facing adversities, individuals mobilize resources left to offset the ongoing stress.
- The theory also proposed that resource loss has more impact to individuals as compared to resource gain. The depleting resource impairs the capability of an individual to offset future adversities and may induce loss spirals (Hobfoll, 1989; Krohne, 2001).
- Hobfoll (2003) also proposed that while resource loss may induce maladaptive spirals, resource gain may induce adaptive spirals. Hence, research should

not just confine the focus on resource loss but also on the role of resource gain in addressing stress.

- The theory posits that burnout occurs as a result of slowly depleting resources. Burnt-out individuals often perceive threats or experience an actual loss to their resources. They may also find it difficult to compensate for their resource loss after investing a significant amount of resources (resource loss is more salient than gain) to combat burnout and be trapped in a loss spiral (Hobfoll & Ford, 2007).

The Coping Reservoir model posits that an individual has a coping reservoir that is drained and filled repeatedly as an individual confront challenges in life (Figure 2.2). The reservoir has a dynamic reserve influenced by the individual personality and coping style (both adaptive and maladaptive). This reserve can also be influenced by factors such as gender, upbringing, and previous experience. Negative input such as stress, conflicts, and energy demands may deplete the coping reservoir to face adversities. Positive input such as support, mentoring, and intellectual stimulation (wellbeing training) can replenish the individual reservoir. The model proposed that inability to replenish their reservoir may lead an individual to exhaustion, cynicism, and unmet expectation, and vice versa (Dunn et al., 2008).

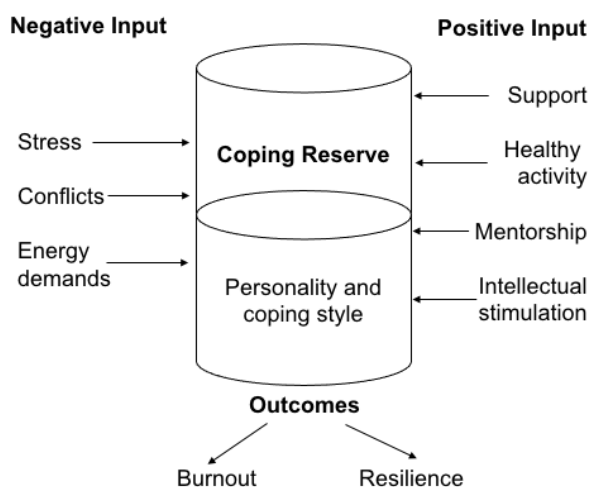


Figure 2.2: The Coping Reservoir model. Adapted from Dunn et al (2008).

Discriminant validity: Burnout and depression

The debate on burnout and depression overlap has begun in 1970s and researchers continued to explore the links between the two constructs (Maslach et al., 2001). Maslach and colleagues (2001) proposed that burnout is specific to work-contexts, while depression involves various aspects of individual life. As compared to depression, there are no binding diagnostic criteria for burnout (American Psychiatric Association, 2013), and it remains under "*Factors influencing health status*" in the ICD-11 (World Health Organization, 2020). However, burnout symptoms such as the absence of positive emotions or negativism have been linked to anhedonia (symptoms of depression) (Bianchi, Schonfeld, & Laurent, 2015). In a similar vein, a study found no significant difference when comparing the presence of depressive symptoms in a clinically depressed cohort and burnout cohort (Bianchi, Boffy, Hingray, Truchot, & Laurent, 2013).

Burnout and depression overlap has been proposed in various way: correlational, reciprocal, distinguishable through factor analyses, predominantly in work aspects versus every aspects in life, and a similar construct (Bianchi et al., 2015).

- i. Correlational: A meta-analysis looking at 11 to 15 studies proposed a strong positive correlation between emotional exhaustion and depression ($r=0.60$), followed by depersonalization and depression ($r=0.40$), and reduced personal accomplishment and depression ($r=0.33$) (Schonfeld et al., 2019). Another meta-analysis looking at 67 studies proposed similar findings, but concluded that burnout and depression were not a similar construct as the effect size was moderate (Koutsimani et al., 2019).
- ii. Reciprocal: A three-year prospective study among dentists has also suggested that burnout is an antecedent of depression, and depression may influence an individual work experience and trigger burnout - a circular influence between the two constructs (Ahola & Hakanen, 2007).

- iii. Distinguishable through factor analyses: An exploratory factor analysis study in the army officers proposed separate unidimensional constructs of burnout, depression, and anxiety, but recommended that burnout scales should remove items that also load on depression for a better discriminant validity (Shirom & Ezrachi, 2003).
- iv. A similar construct but burnout relates to work aspects and depression pervades all aspects of life: A person-centred approach study looking at burnout-depression symptoms over seven years in 2275 Finish dentists found that both burnout and depression clustered and developed in tandem at a similar rate (Ahola, Hakanen, Perhoniemi, & Mutanen, 2014). Ahola and colleagues (2014) highlighted the conceptual similarity of burnout and depression in the work contexts but proposed that depression also pervades all aspects of life.
- v. A similar construct: A large scale study among Austrian physicians demonstrated an overlap between burnout and depression. They found that the mean score of depressive symptoms increased gradually from participants with mild burnout, moderate burnout to severe burnout (Wurm et al., 2016). Another recent study on 1258 educational staff in Switzerland found that exhaustion, cynicism, and inefficacy were less strongly associated with each other, but were more strongly associated with depression. The study concluded that burnout lacked discriminant validity and workers presented with burnout should be systematically assessed for depression (Verkuilen, Bianchi, Schonfeld, & Laurent, 2020).

Given the plethora of literature discussing the relationship between burnout and depression, and the diverging views, the researcher follows the recommendation by ICD-11 that burnout should be considered an occupational phenomenon that may lead to other mental health problems such as depression and anxiety (World Health

Organization, 2020). This also parallels with most of the views discussed above including that burnout is similar to depression (work-related depression). Hence, the dissertation will discuss burnout and depression as separate variables.

Factors associated with burnout

Due to a complex genetic-environment interaction, the developmental and hereditary discourse on burnout factors are not mutually exclusive (Schaufeli, Maassen, Bakker, & Sixma, 2011). As most studies on burnout utilized cross-sectional design, it is also difficult to establish a causality relationship. Most of the studies reported association and there could be a possibility that described associations were factors, impacts, or had a bidirectional link with burnout. Another constraint is that most of the studied variables were examined using the self-assessment scales (Maslach & Leiter, 2016).

Few prospective studies on burnout have highlighted the stability of burnout throughout physicians career. For example, a longitudinal three-waves study among general practitioners in the Netherlands estimated that around a quarter of the variance of burnout level in ten years was attributable to a stable component, while the remaining three quarter can be accounted for changing components (Schaufeli et al., 2011).

Factors contributing to burnout in physician contexts can be categorized into individual, work characteristics, and institutional (Patel, Bachu, Adikey, Malik, & Shah, 2018). There is a mixed result regarding gender associations with burnout, in which some studies proposed female physicians at a higher risk (Dyrbye et al., 2011; Rabatin et al., 2016), male residents at a higher risk (Low et al., 2019). Some studies reported no significant gender difference (McCain et al., 2018; McKinley et al., 2020; Windover et al., 2018). Younger age was consistently associated with a higher risk of burnout (Dyrbye et al., 2014; Kansoun et al., 2019; Lo et al., 2018; Shanafelt et al.,