



**THE PREVALENCE OF BURNOUT AND SOURCES OF STRESS AMONG  
DOCTORAL STUDENTS IN UNIVERSITI SAINS MALAYSIA**

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## **DECLARATION**

**This is to certify to the best of my knowledge, this dissertation is entirely the work  
of the candidate, Nur Nadia binti Ismail.**

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## ABBREVIATIONS

PhD	Doctor of Philosophy
USM	Universiti Sains Malaysia
CBI	Copenhagen Burnout Inventory
CBI-S	Copenhagen Burnout Inventory- for student
PSQ	Postgraduates Stressor Questionnaire
SPSS	Statistical Package for the Social Sciences
ICD–11	International Classification of Disease
IPS	Institut Pengajian Siswazah
PB	Personal Burnout
SRB	Study-related Burnout
CRB	Client-related Burnout
MSSQ	Medical Student Stressor Questionnaire
GHQ	General Health Questionnaire
SD	Standard Deviation
X <sup>2</sup> -statistic	Chi-square statistic
t-statistic	Independent t-test
df	Degree of freedom

## **ABSTRAK (BAHASA MALAYSIA)**

### **KADAR LESU UPAYA DAN PUNCA TEKANAN DALAM KALANGAN PELAJAR DOKTOR FALSAFAH DI UNIVERSITI SAINS MALAYSIA**

#### **PENGENALAN**

Doktor falsafah adalah ijazah sarjana tertinggi yang boleh dimiliki oleh pelajar. Kebanyakan pelajar yang melanjutkan pelajaran di peringkat doktoral didorong oleh perasaan inginkan kepuasan pencapaian tertinggi untuk diri sendiri, berminat untuk menyumbang kembali kepada komuniti, mendapatkan pengiktirafan masyarakat dan juga untuk mendapat peluang yang lebih baik dalam bidang kerjaya. Walaubagaimanapun, dalam penemuan kajian terbaru menunjukkan kadar kesihatan sakit mental adalah lebih tinggi dalam kalangan pelajar doktor falsafah berbanding kelompok kumpulan lingkungan umur yang sama. Pelajar yang mengalami tekanan yang berpanjangan di alam pekerjaan dapat mengakibatkan terjadinya keadaan yang dinamakan “Lesu upaya” sehingga memberi impak negatif dalam kehidupan peribadi, sosial, pelajaran dan juga pada kerjaya seseorang graduan. Oleh kerana itu, adalah sangat penting untuk kita mencari punca berlakunya tekanan ini, dan meneliti faktor lain seperti latar belakang peribadi pelajar supaya dapat ditangani dengan baik oleh pihak yang berkenaan. Justeru, kajian ini bertujuan untuk mengenalpasti kadar lesu upaya dan punca tekanan dalam kalangan pelajar doktor falsafah di Universiti Sains Malaysia.

## **METHODOLOGI**

Satu kajian keratan rentas telah dijalankan melalui tinjauan dalam talian terhadap 2280 pelajar doktor falsafah di USM. Tinjauan dalam talian ini telah dilakukan melalui pengantaran email kepada pelajar-pelajar doktor falsafah yang telah diperoleh melalui pejabat universiti (Institut Pengajian Siswazah). Email tersebut mengandungi soalan-soalan seperti keadaan sosio-demographik para pelajar, faktor akademik, *Copenhagen Burnout Inventory* (CBI) dan juga *Postgraduates Stressor Questionnaire* (PSQ). Soalan sosio-demografik dan faktor akademik ditentukan berdasarkan hasil penemuan dalam kajian terdahulu. CBI mengukur tahap “Lesu upaya” yang dialami pelajar. Manakala, PSQ digunakan untuk mengetahui faktor-faktor yang mempengaruhi terjadinya tekanan dalam kalangan pelajar peringkat ijazah doktor falsafah . Analisis data telah dilakukan menggunakan SPSS versi 26.

## **KEPUTUSAN**

Seramai 157 (6.9%) responden daripada sejumlah 2280 pelajar telah mengambil bahagian dalam kajian ini. Berdasarkan hasil keputusan dari kajian ini, kadar jumlah pelajar doktor falsafah di USM yang mengalami “Lesu upaya” adalah sebanyak 42%. Tekanan untuk mengekalkan prestasi merupakan penyebab utama terjadinya keadaan tekanan dalam kalangan pelajar dengan skor min 3.261 (yang menyebabkan tekanan sederhana ke tinggi). Kemudian di ikuti dengan tekanan akademik, konflik pekerjaan dan keluarga, kekangan birokrasi, hubungan yang kurang baik dengan penyelia tesis, kekangan dalam prospek pekerjaan dan kekangan dalam hubungan bersama rakan. Skor min setiap satu seperti berikut: 2.955, 2.846, 2.829, 2.793, 2.664, 2.633. Skor min diantara



2 – 2.999 diindikasikan sebagai yang menyebabkan tekanan rendah ke sederhana. Dari aspek sosio-demographik dan faktor akademik, hanya situasi pengangguran yang sedang dialami oleh para pelajar didapati memberi impak pada kadar “Lesu upaya” dalam kalangan pelajar doktor falsafah di USM. Selain itu, tekanan untuk mengekalkan prestasi, tekanan akademik, konflik pekerjaan dan keluarga, kekangan birokrasi, hubungan yang kurang baik dengan penyelia tesis, kekangan dalam prospek pekerjaan dan kekangan dalam hubungan bersama rakan juga memberi impak pada kadar “lesu upaya” dikalangan pelajar doktor falsafah.

## **KESIMPULAN**

Berdasarkan hasil kajian ini didapati kadar ‘Lesu upaya’ yang dialami para pelajar doktor falsafah adalah tinggi. Punca utama tekanan dan lesu upaya dalam kalangan doktor falsafah di USM adalah tekanan untuk mengekalkan prestasi dan tekanan akademik. Ia kemudian di ikuti dengan konflik pekerjaan dan keluarga, kekangan birokrasi, hubungan yang kurang baik dengan penyelia tesis, kekangan dalam prospek pekerjaan, kekangan dalam hubungan bersama rakan dan situasi pengangguran yang dialami oleh sebahagian pelajar doktor falsafah. Oleh itu, pelbagai strategi perlu dilakukan oleh pihak universiti untuk menangani masalah ini.

## **ABSTRACT (ENGLISH)**

### **THE PREVALENCE OF BURNOUT AND THE SOURCES OF STRESS AMONG DOCTORAL STUDENT IN UNIVERSITI SAINS MALAYSIA (USM)**

#### **INTRODUCTION**

Doctor of Philosophy is the highest degree in academic undertaking one could have achieved. Mostly, the motivation to pursue the education is due to self-satisfaction, interest in contributing back to the community, societal approval and better career opportunity. However, recent studies had proposed a higher prevalence of developing mental health symptoms suffered by students during their doctoral studies compared to age match general population. The prolonged stress in a student's life often associated with burnout periods whereby it rises negative outcomes at several various social, personal, academic and career levels. Therefore, finding the root cause of this stress and its association to the socio-demographic backgrounds are pertinent to assist the relevant stakeholders in preventing burnouts among doctoral students. Thus, authors investigated the prevalence of burnout and identify the sources of stress among doctoral student in Universiti Sains Malaysia.

#### **METHODOLOGY**

A cross-sectional study was carried out through a web-based online survey toward 2280 doctoral students in USM. The online survey was sent to the selected study

participants through USM students' emails provided by the university (Institut Pengajian Siswazah). The questionnaires consisted of socio-demographic data and academic factors, Copenhagen Burnout Inventory (CBI) and Post-graduate Stressor Questionnaire (PSQ). Socio-demographic data and academic factor were determined according to the associated factors to stress and burnout from previous literature. CBI was used to measure burnout while PSQ was used to measure the postgraduate stressors. Data analysis was performed by SPSS version 26.

## **RESULTS**

A total of 157 (6.9%) out of 2280 doctoral students in USM participated in this web-based online survey. According to the results in this study, the prevalence of burnout among doctoral students in Universiti Sains Malaysia was 42%. The highest-ranking of stressor was the performance pressures which causing moderate to high stress with a mean score of 3.261. It was followed by academic pressures, work family-related stressors, bureaucratic constraints, poor relationship with supervisor, poor job prospects and poor relationship with colleagues related stressors with mean score 2.955, 2.846, 2.829, 2.793, 2.664, 2.633 respectively. Mean score of 2 – 2.999 indicating to (cause mild to moderate stress) to doctoral students. In terms of socio-demographic and academic factor perspectives, only the student employment status showed significant association with burnout among doctoral students in USM. While, the performance pressure, academic pressure, work family-related stressors, bureaucratic constraints, poor relationship with supervisor, poor job prospects and poor relationship with colleagues related stressors also showed highly significant association with burnout for doctoral students in USM.

## **CONCLUSION**

Based on the finding of this study, it shows that there is a high prevalence of burnout among doctoral student. The main sources of stress and burnout are performance pressure and academic pressure. Then it is followed with work family-related stressors, bureaucratic constraints, poor relationship with supervisor, poor job prospects, poor relationship with colleagues related stressors and unemployment situation among doctoral student. Therefore, there is a need for a strategy at the administrative level to address this issue.

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Background of the study**

Doctor of philosophy is the highest degree in academic endeavour one could have. They will become the backbone of the research industry, contributing to new scientific knowledge and technologies and some will pursue a career as a lecturer in the university, earn the societal right to be addressed as “Doctor”; as a result, more opportunity easily come to their way such in career selection (especially in academic line) and promotion as compared to those who are without.

Self-satisfaction, interest in giving back to the community, societal approval, the glorious “Doctor” title, and better career opportunity after finishing the study, were some of the motivations reported by many doctoral students to continue their educational journey to the highest level (Wang et al., 2019). Additionally, the encouragement by government policy, both at the national and international levels, also has led to increased participation rates in the PhD registration in many countries (Appel & Dahlgren, 2010; Levecque et al., 2017).

However, recent studies have brought to light again in regards to the mental health problems suffered by students during their doctoral studies. Although the interest in mental health and well-being of students in higher education is not new, most authors have restricted their analyses to undergraduate and master studies. A doctoral degree has its own characteristics, which make it deserve a separate analysis from other postgraduate studies.

## **1.2 The mental health and well-being of doctoral students.**

Doctoral students have been reported as a group of population to develop higher prevalence of mental health symptoms as compared to age match general population (Levecque et al., 2017). Posiah and Yarina (2018) reported there are high dropouts, dismissed cases, lengthy student's candidature among postgraduate research students in public universities in Malaysia due to stress during their candidature (Mohd Isa & Ahmad, 2018). A study among 136 French doctoral students, finding reported abnormal level of stress, depression and anxiety among them (Marais et al., 2018)

A long process in completing a doctoral degree which takes several years can be a very challenging process intellectually and emotionally for some individuals. Doctoral students often vocalising their concerns of social isolation, loss of motivation, difficulty in carrying out doctoral dissertation, imbalance of academic and private life, and difficult communication with a supervisor were some of the negative perception reported by many works of literature worldwide such as in Malaysia (Mohd Isa & Ahmad, 2018; Yusoff, 2019), China (Wang et al., 2019), Western Europe (Levecque et al., 2017; Marais et al., 2018), Pakistan (Ghafoor et al., 2020), Iran (Ghadirian et al., 2014). Some of the literature reported about the career uncertainty, perceived lack of progress in the education journey, perceived lack of competence and confidence suggests the contributes factors to the development of stress, anxiety, burnout or even more dangerous mental health illness such as depression or suicidal attempts (Appel & Dahlgren, 2010; González-Betancor & Dorta-González, 2020; Sorrel et al., 2020; Wang et al., 2019; Yusoff, 2019).

### **1.3 Prevalence of burnout among doctoral student population.**

Burnout was chosen as a spot of focus in this literature because the significant increase in the number of burnout prevalence in doctoral student population worldwide recently. For example, it was written in a literature in 2015 (Brazil), the prevalence of burnout was 11% (Galdino et al., 2016), while in a literature in 2018 (Netherland), the prevalence increased to 13 – 47% (Kusurkar et al., 2021). In the very recent literature, 2020 in Spain, the prevalence of burnout showed significantly greater increament to 58 – 80% (Sorrel et al., 2020). Burnout is characterized as “a state of physical, emotional and mental exhaustion that results from long-term involvement in work situations that are emotionally demanding (Yusoff, 2019). Psychologist Herbert Freudenberger in the 1970s classified burnout as a syndrome of prolonged emotional exhaustion, depersonalization, diminished interest, and reduced personal accomplishment, that will impact the well-being of an individual in the community, professional, physical, psychological and spiritual aspects (Yeah et al., 2015). Prolonged exposure to personal and environmental stressors occurs in conjunction with perceptions of inadequate resources and the ability to face the challenges associated with the perceived stressors. Stress occurred as the body's reaction to disturbing events from the environment (Yusoff & Abdul Rahim, 2010). It is a process whereby how an individual perceived and cope with environmental threats or challenges. Added to this point, according to an article in *Journal of Affective disorder* (2003), did mention about a strong association between prolonged job stressor with burnout and psychiatric disorders, including major depression (A. Iacovides et al., 2003). Despite the association, there are a clear difference between stress, burnout and clinical depression. Stress involves with various pressures that demand physically and mentally of the affected individual. However, the stressed people can still manage or imagine that if

they be able to make everything under control and they will feel better. While burnout, manifested as feeling empty and mentally exhausted, devoid of motivation, and beyond caring. Individual who experience burnout often don't see any hope of positive change in their situations (Smith M & Segal J, 2020). Burnout is a description of one's feelings towards work, it can be resolved by taking a break/away from the demanding environment, adequate social support, mindful practice, whilst depression is a formal psychiatric diagnostic. While, depression is a condition that are more serious and requires treatment from the professional. Depression symptoms are describe as withdrawing from other people, feeling sad, hopeless, anger, guilty, lack of energy, enthusiasm and motivation, trouble making decisions, being restless, agitated and irritable, eating and sleeping disorders, trouble concentrating, trouble with memory, low self-esteem, trouble functioning in the organization or in personal life and thoughts of suicidal. Depression treatment requires intervention from psychiatrist, which involved medication prescription and counselling session. It is worth to be mention, that not all individuals who affected with the stress situation in the working environment will be experienced burnout and depression as the end result (Hammen, 2005).

#### **1.4 Sources of stress among doctoral students.**

According to the literatures, academic-related pressures is the main factor that contributes to stress among doctoral students (Levecque et al., 2017; Mohd Isa & Ahmad, 2018; Sorrel et al., 2020; Wang et al., 2019; Weaver & Lee, 2000). Difficulty in writing a thesis, difficulty in generating original idea n knowledge, high requirement for thesis publication were some of the dissatisfaction expressed by them under the academic domain. Then, followed with perceived lack of performance in academic,



work-family related issues, uncertainty in a career pathway, poor job prospect, poor relationship with supervisor and colleague. These stressors will be discussed in more details in Chapter 2 (Bazrafkan et al., 2016; Levecque et al., 2017; Mathew et al., 2017; Mohd Isa & Ahmad, 2018; Tian et al., 2019; Wang et al., 2019; Yusoff & Abdul Rahim, 2010). Besides, the sources of stress that commonly discussed in many cited literature, authors also interested to explore socio-demographic and academic factor that might relatively significant to the development of stress and burnout among student. Data such as age, sex, marital status, domestic helper, nationality, PhD program cluster, sponsorship status, employment status and program mode will be explored in more details in this study (Fernando & Samaranayake, 2019; Ghafloor et al., 2020; Levecque et al., 2017; Shanafelt et al., 2015; Sorrel et al., 2020; Tian et al., 2019; Yerkes & Sonneveld, 2012).

### **1.5 Problem Statement**

In line with the definition of burnout, prolonged stress in a student's life associated with burnout occurrence. The development of burnout is a concern because it is associated with negative outcomes at several different levels. First, at the individual level, burnout may be accompanied by a diversity of negative physical and emotional reaction for the individual experiencing burnout. Poor mental health in the doctoral student has been associated with reduced academic productivity, decreased quality of work and attrition (Chin et al., 2016; Hish et al., 2019; Mazumdar et al., 2012; Salam et al., 2013; Yusoff, 2019). Second, at the organizational level, burnout may result in increased absenteeism or dismissal in academic turnover, showing poor status and reputation of the university (Hish et al., 2019; Mohd Isa & Ahmad, 2018). Furthermore, the students who are unable to complete their studies within the

stipulated time will become a burden to the university. Finally, and perhaps most importantly, at the service level burnout may negatively influence the quality of care provided by human service professionals to the care recipient (Weaver & Lee, 2000).

Due to many negative consequences of burnout, finding the root cause of burnout should get adequate attention from the university. Authors hope to provide accurate information in identifying and anticipate the challenges faced by doctoral students in USM whether local or international students who trust educational quality in Malaysia. Therefore, it is hoped that this study can provide evidence for future intervention for the benefit of USM students.

### **1.6 Justification of the study.**

Due to many recent literatures have revealed that burnout among doctoral students is alarming worldwide, we can see a growing in the number of literature started to explore about burnout in their own context and situation (Allen et al., 2020; Kristanto et al., 2016; Levecque et al., 2017). Burnout is a condition that also need profound attention as it usually happens long term and leading to a more complicated consequence such as dropping out, depression, impact to quality and quantity of research output, impact the pipeline of the research industry, disturbing of well-being and productivity (Galdino et al., 2016; Mohd Isa & Ahmad, 2018; Fernando & Samaranayake, 2019; Vidhukumar & Hamza, 2019). Despite the occurrence takes longer time to develop, burnout has a good prognosis to be cured and functioning as a normal person back (Yusoff, 2019). This topic will be discussing further in the chapter 2.

In the Malaysia context, many of the studies on burnout and sources of stress mainly focusing on undergraduate and master student especially in the medical field (Kristanto et al., 2016; Musiun et al., 2019; Salam et al., 2013; Suryalis Ahmad et al., 2011; Yeah et al., 2015; Yusoff & Abdul Rahim, 2010). There is a huge gap in well-being and burnout facing by doctoral students which is another group of high-risk populations of students that also need to be addressed. Furthermore, post- doctoral graduates will be the backbone of the research industry in our country, contributing to the development of a new scientific knowledge base and mostly will be pursuing a professional career in various sector (Levecque et al., 2017). Considering all these factors our doctoral students should be physical and mentally healthy to increase the performance in their academic and future career. Individuals who are suffering from burnout and stress may affect the overall quality of life and academic performance, thus affect the reputation and status of the higher education industry in the country. Therefore, the well-being of every student must be taken care of seriously as they will be the future asset for many industries and contribute to the country's economic and educational sector. Additionally, this study also intended to explore more in Malaysia context as we might get different perspective from the study held in another country because of the differences in academic policies, sponsorship, cultural and social support.

### **1.7 Benefit of the study**

This research focuses on exploring the prevalence of burnout and the sources of stress of doctoral students that commonly associated with burnout among them. It provides further insight into problems and challenges faced by the students during the doctoral program. This study may create an awareness to the community about

doctoral education and possible challenges that they might face so that one could prepare mentally and physically before entering doctoral program. Furthermore, the university may plan a proper counseling session, a motivational program that emphasis on coping strategies and reduced stress. Additionally, it may act as a precursor for the future study which involves a large population and diverse background.

### **1.8 Research question**

1. Is the prevalence of burnout among doctoral students in USM is high?
2. What is the main factor contributing to stress among PhD students in USM?
3. Is there any association between sociodemographic, academic factors, and sources of stress with burnout prevalence among doctoral students in USM?

### **1.9 Objectives of the study**

#### **1.9.1 General objective**

To investigate the prevalence of burnout and the sources of stress among doctoral students in Universiti Sains Malaysia (USM).

#### **1.9.2 Specific Objectives**

- 1) To determine the prevalence of burnout among doctoral students in USM.
- 2) To determine the sources of stress among doctoral students in USM.
- 3) To investigate the association of socio-demographic, academic factors and sources of stress with burnout prevalence among doctoral students in USM.

### **1.10 Research hypothesis**

1. The prevalence of burnout among doctoral students in USM is more than 10% (Galdino et al., 2016).

2. The main sources of stress among doctoral students are academic and performance pressure (Bazrafkan et al., 2016; Levecque et al., 2017; Mohd Isa & Ahmad, 2018; Sorrel et al., 2020; Wang et al., 2019; Weaver & Lee, 2000; Yusoff & Abdul Rahim, 2010).
3. There is no significant association between socio-demographic data and academic factors with burnout prevalence.
4. There is a high association between the sources of stress and the prevalence of burnout among doctoral students in USM (Levecque et al., 2017; Mathew et al., 2017; Sorrel et al., 2020; Weaver & Lee, 2000; Yusoff & Abdul Rahim, 2010).

## **1.11 Operational Definition**

**PhD/Doctoral student:** A student who completed a degree and master program and currently working on his/her doctoral dissertation/ thesis (research-based).

**Burnout:** A reaction to prolonged emotional stress which includes the following “three components: emotional and / or physical exhaustion, lowered work productivity, and over depersonalization (Weaver & Lee, 2000). In this study, burnout will be measure using the Copenhagen Burnout Inventory (CBI)

**Stress:** Physiological and/or psychological response which “occurs when there is a substantial imbalance (perceived or real) between environmental demands and the response capability of the individual (Weaver & Lee, 2000). Sources of stress in this study will be assessed using the Postgraduates Stressor Questionnaire (PSQ).

**Stressors:** Various contributing factors that may cause physiological and/or psychological response including academic stressor, performance pressure, work-family conflict, bureaucratic constraint, poor relationship with colleague & supervisor and poor job prospect

**Academic factors:** Various contributing factors that may influence the well-being of students during the active study period in the program such as; availability of domestic helpers, study sponsorship, employment status during study, and mode of program.

## **CHAPTER 2**

### **LITERATURE REVIEW**

This chapter discusses a topic that related to burnout, stress and the sources of stress perceived by doctoral students around the world. It is included i) definition of burnout, ii) definition of stress, iii) theoretical framework of burnout iv) stress and burnout in tertiary education, which is focusing on doctoral students, v) relationship between sources of stress, socio-demographic and academic factors with burnout vi) the prevalence of burnout and sources of stress among doctoral students in Malaysia and another country, and vii) the gap in Malaysia context. It also briefly explains the progressive solution that a university could do to help doctoral students improve their quality of life as a student and also create a supportive educational environment in the educational system.

#### **2.1 Definition of burnout**

According to 11th edition of the International Classification of Diseases (ICD–11) published by World Health Organization, burnout has just been categorized as a “syndrome” that results from “chronic workplace stress that unsuccessfully managed by an individual”. The definition establishes that burnout is a specific phenomenon related to the occupational context (Sorrel et al., 2020). Another common definition of burnout was also conceptualized as a syndrome of prolonged emotional exhaustion, depersonalization (i.e. a state in which one's thoughts and feelings seem not to belong to oneself), diminished interest, and a low sense of personal accomplishment in a long period, that eventually leads to damaging consequences to various aspect of well-being in an individual’s life (Mathias & Wentzel, 2017; Sorrel et al., 2020; Yeah et al., 2015;

Yusoff, 2019). It is related to the feelings of hopelessness and difficulties to deliver the work or job effectively and efficiently (Mathias & Wentzel, 2017).

According to psychologist Herbert Freudenberger, in 1970, emotional exhaustion is an emotional depletion from being overworked. Depersonalization is a sense of being unfeeling towards the clients (people or things that he/she has been working with); often negative, insensible and detached responses. However, low professional efficacy explained as a reduced sense of competence or achievement in one's work (Yeah et al., 2015). In this study context, academic is considered as a "work" for students, as most of their time in a day will be spent on study-related stuff where doctoral students would spend their time finding new ideas for thesis content, writing and publication of the journal.

## **2.2 Definition of stress**

Stress is defined as a state of psychological reaction and response that results when external demands exceed a person's adaptive abilities, where it is referred to the internal perceived emotion and cognition responding to external demands or challenge (Yusoff & Abdul Rahim, 2010; Zajacova et al., 2005). However, according to Dr Hans Selye, possibly the foremost pioneer defining stress noted that stress is a mechanism of any internal or external demand made upon the body. The stressors are not exclusively physical, but may also involve emotion. Emotion and physical health condition can be considered as an internal constraint and environmental events that cause stress can be perceived as threatening external constraint which directly upset the individual both mentally and physically (Dusselier et al., 2010; Yusoff & Abdul Rahim, 2010). Stressors for each individual may vary depending on his/her life



situation and environment. An individual who failed to cope with the stressors during the transition causes deterioration of personal, professional, academic performances and increases psychological distress (Salam et al., 2013).

### **2. 3 Theoretical framework of burnout.**

Burnout is a concept that interrelated to stress was explained very well in Moderator Model by Baron & Kenny, 1986. In the study, stress served as the predictor variable, social support is the moderating variable, and burnout was the outcome variable. Stress that is prolonged, unattended, lack of support from the surrounding environment and unmanaged successfully might lead to burnout in the affected individual. The interrelation between burnout and stress has been addressed with relatively common in the burnout literature. It is suggested that if stress levels are sustained over an extended period that burnout symptoms may develop which characterized as exhaustion (Dusselier et al., 2010; Weaver & Lee, 2000).

In previous literature by Siegrist (1996) conceives burnout as an unfair balance between the costs and the benefits of work activities. In general, the presence or absence of appropriate coping strategies, self-efficacy and social support emphasis as a mediator to the occurrence of burnout syndrome. Burnout is a process that are reversable by adjusting or improving the mediator factors (Sorrel et al., 2020). According to the diagram below, without effective coping strategy, social support and self-efficacy from the student, the stress condition might progress to burnout or to the condition that need medical attention such as anxiety and depression.

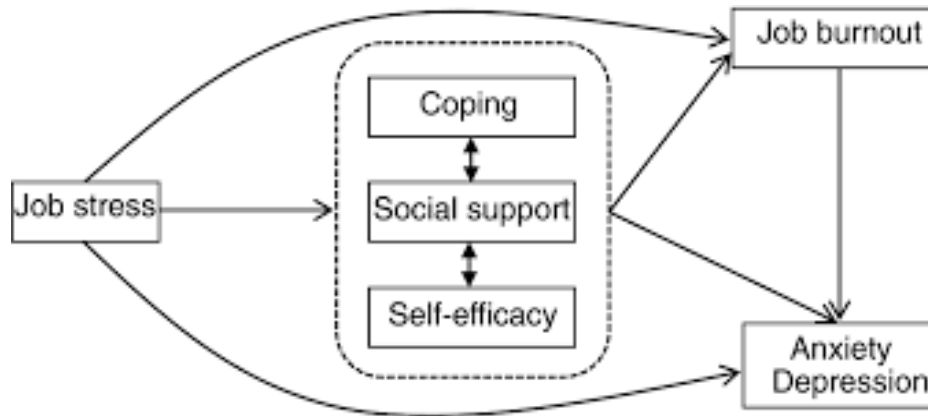


Figure 2.1: Theoretical framework of stress, burnout, anxiety and depression (Dusselier et al., 2010; Weaver & Lee, 2000)

The manifestation of stress and burnout relatively overlap. A person who undergoes stress and burnout may feel fatigued, emotional exhaustion, reduced personal goal achievement, restless, nervous, anxiety, undermine professional development, feelings of being overwhelmed, having difficulty in sleeping due to worrying and ruminating. In turn, reduced self-accomplishment, measured as a loss of interest, apathy, feelings of disappointment and insufficiency, resemble depressive symptoms (Salmela-Aro & Read, 2017). Burnout and stress in an individual needs serious attention due to this condition may lead to a variety of serious personal consequences, including potential unemployment, crime, reduced academic and job performance, depression, substance addiction and the worst, suicidal ideation (Dusselier et al., 2010; Mathew et al., 2017; Salmela-Aro & Read, 2017; Stubb et al., 2011; Wang et al., 2019)

## **2.4 Stress and burnout in tertiary education**

Tertiary education has always been regarded as a highly stressful environment affecting both undergraduate and postgraduate (master and PhD) students. Stress is a part of students' existence and can impact how students adapt to the demands of college life (Dusselier et al., 2010). Unattended stress later progresses to the occurrence of burnout in the study context can be defined as a syndrome of emotional exhaustion that is an outcome of high perceived study demands, the development of a pessimistic and separated attitude towards one's studies and feelings of inadequacy as a higher education student.

Higher education is a demanding environment in which students work hard due to several reasons such as to perform in education, excessive content to learn, assignments overload, strive to meet deadlines and to be excellent in examination (Salmela-Aro & Read, 2017). It is supported by several works in the literature suggested that the prevalence of depression among college students is growing each year (Bazrafkan et al., 2016; Levecque et al., 2017; Wang et al., 2019; Yusoff & Abdul Rahim, 2010).

According to one meta-analysis study with the title of Promoting Resilience and Minimizing Burnout by Muhamad Saiful Bahri (2016), the overall prevalence of burnout among students in higher education was 43.3% (with a 95% confidence interval of 38.6% to 48.1%). The result was a combination of data from the various country including Asia, United States, Europe and Australia with various study course (medical, nursing, dentistry, technology education, veterinary, education, social sciences & business, vocational, music, midwifery, psychology, physical therapy and others) taken by students in the higher educational institution. Benton and colleagues (2013) reported that, between 1988 and 2001, the number of students reported each

year with depression had increase twice, while suicidal students had tripled. Supported this fact, Bugaj and colleagues in 2016 had reported that, students in higher education show higher depression symptoms, as well as higher suicidal rates (Yusoff, 2019).

## **2.5 The relationship between sources of stress, socio-demographic and academic factors with burnout.**

The cause of burnout among doctoral student were diverse and complex. Each individual will interpret their ascription of what caused their stress according to their experience. Doctoral studies often characterized by continuously of having academic and peer pressure, frequent evaluations, high workload, paper deadlines, financial difficulties, the pressure to publish, active participation in the scholarly environment, including conferences, lack of permanent employment, and an uncertain future (Schmidt & Hansson, 2018). Some of the other factors such socio-demographic and academic factor were also has been explained in various literature. For example, sociodemographic data and academic factor that will explore in this study were derived from previous literature that influence burnout development.

It is crucial for doctoral student received very supportive environment and social support including family, partners, academic staff, colleague or peer, educational systems in ensuring the well-being of doctoral students and maintain a healthy work-life balance (Bugaj et al., 2016; Schmidt & Hansson, 2018; Stubb et al., 2011; Yusoff, 2019).

One of the common components that contribute to stress in doctoral students is the academic and thesis writing requirement (Bazrafkan et al., 2016; Wang et al., 2019). Difficulties in the selection of a good idea or topic for the thesis, unclear in the

thesis stage, time management problems, lack of resources, and poor writing skills are the common complaint written in few studies. PhD student experience stress and anxiety while writing their thesis than other stages of study life (Bazrafkan et al., 2016; Mohd Isa & Ahmad, 2018; Wang et al., 2019). With a lot amount of assigned work, examination, the pressure of academics with an obligation to succeed, the demand for publication of dissertation work in the highly indexed journal for inexperience students, it is rather tough and putting PhD student in a pressure situation (Wang et al., 2019)

Supervisor-student relationships are captured by most participants in many studies as a negative image. Non-responsive, ineffective supervisory evaluation and lack of sufficient feedback for correction of work explained clearly by participants. Participants stated that inappropriate choice of supervisor, the weak structure of thesis supervision, lack of concentration on thesis, poor and unstructured supervision, lack of systematic and inadequate guidance, are the major problems in this area (Bazrafkan et al., 2016; Wang et al., 2019). Lack of time and accessibility of the supervisor, due to having multiple academic and non-academic duties in multiple activities such as teaching, were the other problems. In a different study in Iran, it was found that supervisors work in public and private clinics in addition to their academic duties; causing limited time is left for supervising and guiding the students (Ghadirian et al., 2014).

The rationale in such a situation lies in the students' overload in universities and the improper proportion of students and supervisors (Bazrafkan et al., 2016). Few studies described a pessimistic image of the relationship of the student with their supervisor for example in the process of earning their doctorate, students are subject to the power that supervisors exercise over student's research, progress and career.

This misuse of power can be considered as unprofessional, selfishness and meanness, where supervisors use their students to produce the supervisor's academic work, take all the recognition for publications and results, and belittle student's different approaches ((Bazrafkan et al., 2016; Wang et al., 2019)).

Changing supervisors can be a sensitive issue. Therefore, in some cases, this meant that the research students hesitated to change supervisors or did not change at all, even though they wanted to do so. Those students who considered changing supervisors but who refrained from doing so, it was found that rather a large number were afraid of what the consequences would be if they made a change (Appel & Dahlgren, 2010).

Another factor that contributes to stress among doctoral students is financial insecurities although the financial condition of each PhD student may vary. Financial insecurities mostly affected unemployed and self-funded students. Studies in few countries have shown that financial problems and debt are one among the main stressors experienced by those working towards a PhD journey (Bazrafkan et al., 2016; Levecque et al., 2017; Schmidt & Hansson, 2018). Short-term financial support might be a lifesaver for a few students, however, most of the doctoral students felt that short-term financial support not helping enough (Appel & Dahlgren, 2010). The event of financial insecurity and the low salary not only lead to a stressful situation but was also one of the main reason the students gave when they were asked if they had ever thought about quitting their studies, where about 49 % of the students responded that they had thought seriously about quitting (Appel & Dahlgren, 2010). This matter significantly shows in Flanders, Belgium, where all of the PhD students receiving the scholarship and formally employed, financial problems and debts are probably not crucial issues

there as compared to other countries. They would expect the same prevalence of mental health illness if the same situation happens in their country (Levecque et al., 2017).

Some of the students who self-supported funding, need to juggle between academics and also work. Recently a report by the Swedish government showed that stress in workplaces for part-time students had increased in which reflecting the growing stress-related issues among them in the psychosocial working environment (Appel & Dahlgren, 2010). The juggling situation contributing to the stress level for PhD students who are also working either as full-time or part-time workers especially involving funding their fees. Approximately 90% of the students reported that they often thought about work after working hours and some of them worked full-time with their research while doing administrative work, therefore reflect the fact that there is no clear dividing line between work and leisure time (Appel & Dahlgren, 2010).

Several students also reported their personal issues hinder the progress of their study which adds up to the stresses. This can be from many factors. Lack of clear objective for enrolling in a PhD program with shallow motivation just to find a job with a good salary or just for the sake of a doctoral title. They focus on their short-term benefits, neglecting the fact that undergoing doctoral education is challenging. PhD is not only intellectually difficult but it calls for discipline, hard work and good time management (Wang et al., 2019). Some of the doctoral students being involved with other activities irrelevant to study/academic and not giving full attention to their thesis dissertation causes them to rush through completing their thesis; as a result, the thesis was written poorly, unable to satisfy their supervisors, internal, external examiners and in publications (Wang et al., 2019).

Another issue that contributes to stress among doctoral students, is that personal insecurity about their capacity which was expressed many times through

reflections concerning internal and external demands. The query like as “Am I good enough?” “are my study adequately satisfied?” always be the pessimistic connotation on their ability resulting in a guilty feeling which slowly progresses to stress especially in female students (Appel & Dahlgren, 2010). Personal characters (e.g: being emulative, fragile, etc) also accounted in part for their stress. A few students expressed feeling loser when they fail to meet their expectations (Wang et al., 2019).

Nevertheless, non-supportive family or companionship, as well as intense roommate relationships also contribute to stress among doctoral students. Corroborate to many findings, negative family relationships can lead to stress, giving an impact on mental health and worsen mental illness. It was reported that stress is more prominent among female students where they mentioning about imbalance time for family and leisure time with academic responsibility, corroborating with previous research findings (Appel & Dahlgren, 2010; Schmidt & Hansson, 2018; Tainsh, 2016; Wang et al., 2019). High expectation from parents who wanted to see their children succeed in academic gives some kind of burden and stress for most of the students especially in Asia country (Mathew et al., 2017).

In view of the sociodemographic factor such as sex, a study in US, female graduate scored significant higher stress and burnout associated with greater sense for accomplishment in study rather than male (Weaver & Lee, 2000). Another study has showed the same result where the female students were more stressed than their male counterparts due to fear of gender discrimination in job seeking in a tight job market (Wang et al., 2019).

In term of marital status, a study in Pakistan, single students showed more burnout than married student. It stated that married student received adequate family support that act as buffer during hard time in the academic. While single student,



received less social support and they mainly anxious related to future career, academic responsibilities and confidence in their decision making ability (Ghafoor et al., 2020). In term of program cluster, the extensivity of the subject course such in medical and dental program did influenced the burnout development among doctoral student (Divaris et al., 2012; Kusurkar et al., 2021; Mathew et al., 2017).

Academic factor such as the study sponsorship, in Belgium, sponsorship did influence the burnout rate due to close relation to financial security. Almost every student in Belgium assisted with scholarship and financial capacity (Levecque et al., 2017). Another factor that influence the burnout prevalence in each respective country is the employment status. The unemployment situation among postgraduates linked to the financial constraints. Financial support played a significant role in facilitating a college-work-life balance. In a study in United States, some of the student feel at eased and very thankful to the institution who provided them with financial resources such as scholarship, assistantship so that they do not have to worried about to make the ends meet (Martinez et al., 2013). Unemployment and financial insecurity not only contributed to a stressful situation, but was also one of the main reasons the students ever thinking about quitting their study (Appel & Dahlgren, 2010). In a study in United States (2013), found that high emotional exhaustion experience by the full time students due to striving to obtain work-life balance. Work-life imbalance was one of the contributing factor to the development of burnout (Martinez et al., 2013; Schmidt & Hansson, 2018).

Although, factors such as age, domestic helper and nationality did not clearly mention in the previous literature, however, we interested to explore about it considering the cultural and socio-economic situation that unique to each country.

## **2.6 The prevalence of burnout among doctoral student in Malaysia and other country.**

There is very limited study was done specifically to explore burnout syndrome among doctoral students. However, recently a lot of anecdotal reports claim that there is increasing in the numbers of doctoral students who perceived stress, burnout during their training program. With that widespread awareness, many international institutions begin to survey to get empirical information about this matter. Nevertheless, in a local context (Malaysia), burnout and stress perception are not well established in doctoral student population.

In a very recent study published in *The Spanish Journal of Psychology* (2020), the prevalence of burnout among 350 Spanish doctoral students was in the range of 58% to 80%. These estimates are considerably higher than those found in other literature. Personal factors such as lack of emotional intelligence and resilience, and negative perception of a students-supervisor relationship were the predictors to burnout in Spanish PhD students (Sorrel et al., 2020).

Different from the result above, a study in 2015 revealed that about 11.6% of postgraduates' students from 3 nursing school in Brazil had the sign of burnout. The variables related to their perception of the academic course and its requirements. Dissatisfaction with the learning topic and content reduced social support and leisure-time opportunities were the main predisposing factor contribute to burnout among them (Galdino et al., 2016).

A study conducted at Duke University (2019), reported doctoral students in biomedical sciences also perceived burnout mostly related to academic-related stressors. In the study, stated the mediator to the development of stress-burnout is

closely related to low self-mastery and the problem with the supervisor-student relationship (Hish et al., 2019).

Research policy observers in Belgium are concerned about a current academic-working mental health condition in PhD students, had surveyed 3659 PhD students revealed about 32% of participants are at risk of having or developing a standard psychiatric disorders, like depression. This number can be included and take serious acknowledgment, as we can consider this number as the progression from stress to burnout and/or lastly end up with more serious psychiatric disorder such as depression. The result from the survey, revealed the sources of stress among PhD students come from various reasons including work-family interface, job demands and job control, the supervisor's leadership style, dissatisfaction in decision-making culture and uncertainty in job prospect outside academia (Levecque et al., 2017).

Another study of 10 PhD students from seven universities in three provinces in China has been interviewed in a qualitative survey, stated that they experienced stress from a variety of sources. The trigger for the stress was diverse and complex which they interpret their views on what causes their stress. The sources of stress from the interview reveals that apprehension at not completing the PhD program on time was the most complaint from them. It is closely related to academic policy, personal factors, and lack of supervisor guidance. Another factor is the high demand on thesis requirement stressed them out especially with the requirement to publish in highly index journals in a certain country. Job-related stress and employment situations also contribute to this condition. According to this interview reveals that some of the participants enrolling in a PhD are to find a job with a good salary, to meet the requirement for job promotion, or just for the sake of a PhD title. Further, non-supportive family or companion, roommate relationship also contribute to PhD stress.

This data also reveal that stress is more prominent among female students. The financial situation also constitutes a cause for stress (Wang et al., 2019).

With the variety and diverse result from various literature from different countries, this research intended to find out about how serious burnout syndrome among doctoral students in a Malaysia context and what are the sources of stress experienced by our students.

## **2.7 The sources of stress among doctoral student.**

Stress and burnout among university students have been discussed in many works of literature since long time ago, however, it is mostly focusing on the undergraduate and master students in the medical field especially in Malaysia context. Currently, no data was found in the context of burnout among doctoral students population. A recent study has drawn attention worldwide where the survey of the sample of 3659 doctoral students at Flanders (Belgium) reveals that they faced significant mental health challenges due to academic-related issues (Levecque et al., 2017). Xuenyu and Chun in their study also reported academics as the main sources of stress among doctoral students in China (Wang et al., 2019). In contrast, few previous studies have demonstrated that many university students especially students, experience stress and burnout while studying at college, come from a variety of sources, not only in academic matter (Bazrafkan et al., 2016; Hish et al., 2019). A recent pilot study of 69 biomedical doctoral students in the United States in 2019 reveals that stress leads to burnout among them due to academic stressor, while the stress leading to depression mostly due to family and monetary stressors (Hish et al., 2019). As the result, many large national and international survey studies have begun