UNIVERSITI PUTRA MALAYSIA

RELATIONSHIP BETWEEN PROBLEM SOLVING SKILLS APPRAISAL, PERCEIVED STRESS, HOPELESSNESS, HARDINESS, AND SUICIDAL IDEATION AMONG UNDERGRADUATE STUDENTS IN PUBLIC UNIVERSITIES IN SELANGOR

ABBAS ABDOLLAHI

FEM 2015 2

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By

ABBAS ABDOLLAHI

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

June 2015

DEDICATION

This dissertation is specifically dedicated to my lovely mother (Tahereh Panaheha), my lovely wife (Samaneh Karbalaei), and my beloved family members (Masomeh. Mahin, Sedigeh, and Asghar) for their encouragement, faith, and belief in me.

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in Fulfilment of the Requirement for the Degree of Doctor of Philosophy

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June 2015

Chairman: **Mansor Bin Abu Talib, PhD**
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Suicide is a serious and growing public health problem, and it remains a serious cause of death in the world. It is reported that young Malaysians in the 16 to 24 year age group has the highest prevalence of acute and chronic suicidal ideation compared to other age groups. In addition, recent evidence suggests that suicidal ideation is increasing among university students. This highlights the idea that university students are at-risk populations. Therefore, this study was designed to examine the relationships between problem-solving skills appraisal, perceived stress, hardiness, and hopelessness with suicidal ideation; the mediation roles of hopelessness and hardiness on problem-solving skills appraisal and perceived stress with suicidal ideation; and the moderating role of gender on the relationships between problem-solving skills appraisal, perceived stress, hopelessness, and hardiness with suicidal ideation among undergraduate students. The present study utilized the Shneidman theory of suicidal ideation, hardiness theory, and the diathesis stress-hopelessness theory in providing a valid basis for explaining and predicting suicidal ideation among undergraduate students.

The multi-stage cluster random sampling method was employed to recruit a total of 500 undergraduate students aged 18 to 24 years from public universities in the Selangor state. Quantitative study using correlational research design was employed. The respondents completed the Problem-Solving Inventory (Heppner, 1988), Perceived Stress Scale (Cohen et al., 1983), Personal Views Survey (Maddi et al., 2006), Beck Hopelessness Scale (Beck et al., 1974), and the Beck Scale for Suicidal Ideation (Beck et al., 1988).

Structural equation modeling indicated that undergraduate students with poor problem-solving skills, high perceived stress, high hopelessness, and low hardiness were more likely to report suicidal ideation. Hardiness and hopelessness partially mediated the relationships between problem-solving skills appraisal and perceived

stress with suicidal ideation. Additionally, this study supported the moderating role of gender between hardiness and perceived stress with suicidal ideation. Hopelessness was the strongest predictor of suicidal ideation among undergraduate students. The findings of this study proposed that perceived stress, problem-solving skills appraisal, hopelessness, and hardiness were valuable predictors of suicidal ideation among undergraduate students. These variables explained 88.0% of the variance in suicidal ideation. The findings of this study showed that the obtained mean of suicidal ideation for Muslim students was lower than others.

The current study advances understanding on the importance of problem-solving skills and hardiness as influencing factors against suicidal ideation. It also increases understanding on the importance of perceived stress and hopelessness as risk factors of suicidal ideation among undergraduate students. The findings of the current study can be useful for therapists, parents, university students, counsellors, and policy makers to prevent suicidal ideation.

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PERKAITAN ANTARA PENILAIAN KEMAHIRAN PENYELESAIAN MASALAH, TEKANAN ANGGAPAN, PUTUS HARAPAN, KETABAHAN, DAN IDEA BUNUH DIRI DALAM KALANGAN PELAJAR UNIVERSITI AWAM DI SELANGOR

Oleh

ABBAS ABDOLLAHI

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Pengerusi: **Mansor Bin Abu Talib, PhD**
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Bunuh diri merupakan satu masalah kesihatan awam yang serius dan kian menular, malah kekal sebagai punca utama kematian di dunia. Dilaporkan bahawa golongan remaja Malaysia yang berusia di antara 16 hingga 24 tahun mempunyai prevalens paling tinggi bagi idea bunuh diri akut berbanding dengan kumpulan umur yang lain. Tambahan pula, bukti terkini mencadangkan bahawa idea bunuh diri semakin meningkat dalam kalangan pelajar universiti. Hal ini menekankan bahawa golongan pelajar universiti antara populasi yang berisiko tinggi. Justeru itu, kajian ini telah direkabentuk bagi meneliti perkaitan antara penilaian kemahiran penyelesaian masalah, tekanan anggapan, putus harapan dan ketabahan dengan idea bunuh diri; peranan pengantara putus harapan dan ketabahan terhadap penilaian kemahiran menyelesaikan masalah dan tekanan anggapan dengan idea bunuh diri; dan peranan penyederhana jantina dalam perkaitan antara penilaian kemahiran penyelesaian masalah, tekanan anggapan, putus harapan, dan ketabahan dengan idea bunuh diri dalam kalangan pelajar prasiswazah. Kajian ini menggunakan teori idea bunuh diri oleh Shneidman, teori ketabahan, dan teori *diathesis stress-hopelessness* dalam menyediakan asas sah bagi menjelaskan dan meramal idea bunuh diri dalam kalangan pelajar prasiswazah.

Kaedah persampelan rawak berkelompak digunakan untuk memilih 500 orang pelajar prasiswazah yang berusia antara 18 hingga 24 tahun daripada universiti awam di negeri Selangor. Kajian ini adalah kajian kuantitatif menggunakan reka bentuk kajian korelasi. Responden telah melengkapkan *Problem-Solving Inventory (Heppner, 1988), Perceived Stress Scale (Cohen et al., 1983), Personal Views Survey (Maddi et al., 2006), Beck Hopelessness Scale (Beck et al., 1974),* dan *the Beck Scale for Suicidal Ideation (Beck et al., 1988).*

Model Persamaan Berstruktur menunjukkan bahawa mahasiswa yang mempunyai tahap penilaian kemahiran penyelesaian masalah yang rendah, tekanan anggapan yang tinggi, tahap putus harapan yang tinggi, dan ketabahan yang rendah lebih

berkemungkinan melaporkan idea bunuh diri. Ketabahan dan putus harapan merupakan pengantara separa bagi perkaitan antara penilaian kemahiran penyelesaian masalah dan tekanan anggapan dengan idea bunuh diri. Di samping itu, kajian ini menyokong peranan penyederhana jantina antara ketabahan dan tekanan anggapan dengan idea bunuh diri. Putus harapan merupakan peramal terkuat bagi idea bunuh diri. Hasil kajian ini mencadangkan tekanan anggapan, penilaian kemahiran penyelesaian masalah, putus harapan dan ketabahan merupakan peramal penting idea bunuh diri dalam kalangan pelajar prasiswazah. Pembolehubah ini menjelaskan 88.0% varians dalam idea bunuh diri. Hasil kajian ini menunjukkan bahawa min yang diperolehi daripada idea bunuh diri untuk pelajar Islam adalah lebih rendah berbanding yang lain

Kajian ini meningkatkan pemahaman tentang kepentingan penilaian kemahiran penyelesaian masalah dan ketabahan sebagai faktor yang mempengaruhi idea bunuh diri. Ia juga meningkatkan pemahaman tentang kepentingan tekanan anggapan dan putus harapan sebagai faktor risiko kepada idea bunuh diri dalam kalangan pelajar prasiswazah. Hasil kajian ini juga bermanfaat kepada ahli terapi, ibu bapa, pelajar universiti, kaunselor dan penggubal dasar untuk mencegah idea bunuh diri.

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This thesis submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee are as follows:

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Declaration by Graduate Student

I hereby confirm that:
- This thesis is my original work;
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Signature: ----------------------------------   Date: --------------------------------------

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LIST OF ABBREVIATIONS

AAS	Approach-Avoidance Style
AMOS	Analysis of Moment Structure
AVE	Average Variance Extracted
BSSI	Beck Scale for Suicidal Ideation
BHS	Beck Hopelessness Scale
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CR	Construct Reliability
DF	Degree of Freedom
GOF	Goodness-of- fit
NFI	Normed Fit Index
PC	Personal Control
PSC	Problem-Solving Confidence
PSI	Problem-Solving Inventory
PSS	Perceived Stress Scale
PVS	Personal View Survey
PNFI	Parsimony Normed Fit Index
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
TLI	Tucker Lewis Index

CHAPTER 1

INTRODUCTION

The first chapter of this thesis presents the background of the current study on suicidal numbers in the world and in Malaysia. Next, problem statement is presented upon issues related to the topic of study. Followed by research questions, research objectives, research hypotheses, significance of the study, conceptual and operational definitions of terms are presented. Lastly, based on the theoretical background, the conceptual framework is presented.

1.1 Background of the Study

Suicide is a serious and negative occurrence throughout the world, and it ranked third after accident and homicide in deaths of adolescents between 16 to 24 years old (Habil, 2013; National Center for Injury Prevention and Control, 2010; World Health Organization, 2012). According to the World Health Organization, close to one million people have died from suicide, and every 40 seconds one died, and it is predicted that by 2020, every 20 seconds one would die if imperative and urgent action is not taken (World Health Organization, 2012). The National Health and Morbidity Survey, Ministry of Health Malaysia mentioned that 6.3% of respondents in their survey reported having suicidal ideation (Aishvarya, Maniam, Sidi, & Oei, 2014). Additionally, it is reported that adolescent Malaysians in the 16 to 24 year age group has the highest prevalence of suicidal ideation compared to other age groups (Institute for Public Health, 2008). It is estimated by Malaysian Psychiatric Association that seven people commit suicide each day, and public hospital reported that mortality rates due to suicide acts had dramatically risen from 1999 to 2007 in Malaysia, and the range of age related to suicidal attempters was between 12 to 24 years (Malaysian Psychiatric Association, 2007). In addition, the Malaysian Psychiatric Association stated that every successful suicide negatively impacts on 20 other people, family members, friends or colleagues (Habil, 2013). It is estimated that around 30 of family members or/and others are deeply affected from suicidal acts. For each suicide, there are around 8-25 non-fatal suicide attempts (Workowski & Berman, 2010). Therefore, suicide and suicidal ideation are prevalent, especially among adolescents, and it is indispensable to study on the variables related to suicidal ideation.

The rate of successful suicide in Asia is around 500,000 cases; which is high since it represents 60% of worldwide suicide cases (Chen, Wu, Yousuf, & Yip, 2012; Vijayakumar, 2005). For example, the rate of suicide in Japan is 30,000 yearly, and 36.8 per 100,000 died from suicide (Sugawara et al., 2012). The rate of the suicidal attempts for Chinese is 17.8 per 100,000 (Tian et al., 2007), and the rate of the suicidal attempts in Philippine is 17.1 per 100,000 (Page et al., 2006). The rate of suicide in Thailand is 7.9 per 100,000 (Lotrakul, 2006). The rate of suicide in Singapore is 10 per 100,000 (Samaritans of Singapore, 2013). The rate of suicide in Malaysia is 12 per 100,000 in comparison to neighboring countries, such as Singapore with 10 per 100,000 and Thailand with 7.9 per 100,000 (Ali et al., 2012; Hendin et al., 2008). However, based on the terrible suicidal numbers in Asian countries, limited suicidal

studies have been conducted in Asian countries compared to European countries and America. Meanwhile, with looking at the worrying numbers of suicide in Asian countries, especially in Malaysia (Maniam et al., 2014), suicidal research seems necessary to improve body of knowledge by further study about the suicidal thought process in order to provide suicidal programs for reducing suicidal numbers among Malaysian adolescents as an important at-risk population.

The current study focused on suicidal ideation among undergraduate students, because this period of time is a period of changeover, whereby significant changes may take place in social and also psychological aspects of the individuals' lives (Foo, Alwi, Ismail, Ibrahim, & Osman, 2014). A Malaysian study indicated that depression, stress, and anxiety are common psychological disorders among Malaysian university students between the age 18 to 24 years (27.5% experienced moderate, 9.7% experienced severe or seriously severe depression; 34% experienced moderate, and 29% experienced severe or seriously severe anxiety; and 18.6% experienced moderate, and 5.1% experienced severe or seriously severe stress) (Shamsuddin et al., 2013). Meanwhile, Maniam et al. (2014) revealed that adolescent Malaysians in the 16–24 year age group had the highest risk for suicidal behavior compared to other age groups, which may include a significant proportion of the Malaysian university students (Institute for Public Health, 2008). This highlights the idea that university students are at-risk populations. Hence, it is important to identify early signs and prevention in order to obtain better outcomes. Therefore, the current study was conducted to investigate the relationships between problem-solving skills appraisal, perceived stress, hopelessness, and hardiness with suicidal ideation among undergraduate students in public universities in Selangor, Malaysia.

Past studies have indicated that poor problem-solving skill is an important contributor to suicidal ideation (Becker-Weidman, Jacobs, Reinecke, Silva, & March, 2010). This idea emanates from studies have demonstrated that effective problem-solving skills reduce the detrimental effects of suicidal ideation and improve mental health (Becker-Weidman, Jacobs, Reinecke, Silva, and March, 2010; Gibbs et al., 2009; Pollock and Williams, 2004). In addition to the chemical, physical, and psychological changes that occur during adolescence, and the transition from childhood to adulthood (Heim & Binder, 2012), adolescents must make decisions about academic, occupational, and other affairs, which affect their future and identities. These demands mean that problem-solving skills are necessary for adolescents because they need to find suitable solutions for their problems; otherwise, they may be suffering from mental disorders and suicidal ideation (Speckens & Hawton, 2005). However, how deficits in problem-solving skills increase the risk of suicidal ideation is not yet understood; therefore, it remains to be addressed.

The positive association between stress and suicidal ideation has been widely investigated (Baca-Garcia et al., 2007; Grover et al., 2009; Labelle, Breton, Pouliot, Dufresne, & Berthiaume, 2013; Linda, Marroquín, & Miranda, 2012). The reasons why individual with higher amounts of stress experience higher degree of suicidal ideation is unclear, since the results from the past studies on this area have addressed the linear association between stress and suicidal ideation, without taking into consideration other factors influencing the association. Accordingly, the current study

is valuable in clarifying the relationship between stress and suicidal ideation among Malaysian undergraduate students and the factors influencing between this association.

The feeling of hopelessness in adolescents has been implicated as a significant contributing factor for suicidal ideation (Grover et al., 2009; Labelle et al., 2013; Zeyrek, Gençöz, Bergman, and Lester, 2009). Additionally, Zeyrek et al. (2009) revealed that poor problem-solving skills and hopelessness were significant predictors of suicidal ideation, and they found that while individuals achieved effective problem-solving skills, the sense of hopelessness decreased, and they controlled their suicidal ideation. The diathesis-stress hopelessness theory (Schotte and Clum, 1982) suggests that individuals with poor problem-solving skills under stressful situations become hopeless when they are not able to find efficient solutions to life's problems. Therefore, hopelessness is a consequence of this process. Despite these theories, little research exists about suicidal ideation, problem-solving skills appraisal, perceived stress, and hopelessness, which might be essential for the enhancement of public health. This study aims to expand the diathesis-stress hopelessness theory on suicidal ideation and hope to clarify the relationships between problem-solving skills appraisal and perceived stress with suicidal ideation, and the variables influencing these associations.

In recent years, there have been increasing academic studies in relation to human strengths and physical and mental health (Chioqueta & Stiles, 2007). However, the research on these types of variables and suicidal ideation is yet limited. One of the significant factors related to mental health and could play an important role to prevent suicidal ideation is hardiness (Engel et al., 2011; Vance, Struzick, & Burrage Jr, 2009). There is limited academic literature about the relationship between hardiness and suicidal ideation, mainly because most of the study on hardiness to date has concentrated on managing stress (Phillips, 2011; Vidrine et al., 2011). Hardiness characterises a broad orientation towards personal, and the world conceptualized as comprising of a sense of commitment, control, and challenge. Particularly, hardy individuals are committed to what they do in various aspects of their lives; believe in having control over the roots and solutions of problems, and look at life alterations and adjustment demands as challenges and opportunities (Kobasa, Maddi, & Kahn, 1982). Along these lines, the current study aimed at expanding the hardiness theory on suicidal ideation among undergraduate students. The literature review shows the value of hardiness as an influencing factor for health behavior, although not specifically towards suicidal ideation. Additionally, the literature review shows the lack of research regarding suicidal ideation and hardiness, which is regarded as vital to the improvement of public health. There is still a gap in the literature (Polanco-Roman & Miranda, 2013; Stratta et al., 2014) according to numerous evidence on the associations between problem-solving skills appraisal and perceived stress with suicidal ideation, these studies examined the linear association between problem-solving skills and perceived stress with suicidal ideation, and the mediating variable on these associations have not been studied.

Malaysia is a multicultural country and the population of Malaysia comprises Malays, Chinese, and Indians with different religions, including Islam, Buddhism and Hindu

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respectively. Previous studies have consistently shown that the rate of suicide in Muslims has lower than other religions (Aishvarya et al., 2014; Morris & Maniam, 2001). Other studies have shown that Indian and chinses groups are representative of Hindu and Buddhism religions that have higher attempted and completed suicide rates (Foo et al., 2014; Maniam et al., 2014). Similar results were reported in Singapore that was; Chinese had the highest completed suicide followed by Indian (Joe, Romer, & Jamieson, 2007). Therefore, the current study attempts to provide a deeper understanding on suicidal ideation between different religions among Malaysian undergraduate students in order to provide preventive efforts for the reduction of suicidal ideation.

1.2 Problem Statement

Based on suicidal behavior on the dramatic upsurge in Malaysia (Aishvarya et al., 2014; Maniam et al., 2014), academic research has a significant role to play in enlightening suicidal ideation and its usable and effective solutions. About 7% of young Malaysians have suicidal ideation, and half of them transformed their thought to actions (Kok & Goh, 2011). Large numbers of suicide cases are classified as undetermined deaths and the rate of suicide attempts is ten times more than the rate of the completed suicide in Malaysia (Mustaffa, Aziz, Mahmood, & Shuib, 2014). The National Suicide Registry Malaysia (NSRM) predicts an average of 60 individuals die by suicide each month, and estimates that 8–13 individuals for every 100,000 Malaysians (Aishvarya, Maniam, Sidi, & Oei, 2014; Foo et al., 2014). Importantly, recent evidence suggests that suicidal ideation has increased among Malaysian undergraduate university students (Foo et al., 2014; Maniam et al., 2014).

University students may experience different levels of difficulties in academic pressures, academic achievement, occupational choices, and life goal decisions (Glover 2000). Unfortunately, some students who struggle to cope, particularly in areas of finance and romance, stress, hopelessness, and loneliness, may perceive suicide as the solution to their problems (Tam et al. 2011). In addition, transitioning into university life can be challenging. Students are introduced to new freedoms, new responsibilities, and feel overwhelmed with academic and social pressures. This also is the age period (18-24 years of age) in which severe psychiatric disorders, like bipolar and schizophrenia, typically manifests and can disrupt a student (Haas, Hendin, & Mann, 2012). Indeed, students' suicide risk rises with lower problem-solving abilities (Ugurlu and Ona 2009). A Malaysian study reported suicide attempts for university students was 5.3 % (Page et al., 2006). Tam, Lee, Har, & Chan (2011) revealed that the increased rate of suicide ideation among university students indicates suicide ideation is noticeable in this populations.

This highlights the idea that university students constitute an at-risk population. However, to date, limited studies have been conducted on suicidal ideation among undergraduate students in Malaysia, and most Malaysian suicidal studies are descriptive, and limited studies have been conducted on the related factors of suicidal ideation (Aishvarya et al., 2014; Foo et al., 2014; Morris & Maniam, 2001). This study focuses on the undergraduates, who represent the nation main asset and will shape the

future of Malaysia. It is imperative to produce a group of high-quality, human capital to further enhance the development of the nation. Thus, it is important to enhance our understanding of the related factors of suicidal ideation among undergraduates. Therefore, the current study attempts to address this gap by investigating on suicidal ideation among undergraduate students as normal population in Malaysia and recognizes influencing factors of suicidal ideation that will be useful for prevention programs.

From the theoretical viewpoint, Heppner and Petersen (1982) highlighted the role of poor problem-solving skills in clarifying some psychological disorders, such as depression and suicide (Kidd et al., 2006; McDermut, Miller, Solomon, Ryan, & Keitner, 2001; Rudd et al., 2006). Late adolescents need to learn effective problem-solving skills to manage their problems and conflicts. If late adolescents could not learn effective problem-solving skills, they might engage in mental disorders and choose suicidal act to solve their problems and conflicts. Review of literature shows that there is no study has been conducted on the relationship between problem-solving skills appraisal and suicidal ideation among undergraduate students in Malaysia. Therefore, in order to understand suicidal ideation as a significant predictor of suicide, the priority must be given to understand problem-solving skills that influence such behavior. Therefore, this study has employed problem-solving skills appraisal as an independent variable (exogenous variable) to explain suicidal ideation among undergraduate students.

One of the important risk factors of suicidal ideation is perceived stress, and there is a significant relationship between perceived stress and suicide attempt (Baca-Garcia et al., 2007). The common psychological problem among adolescents is stress (Dyrbye, Thomas, & Shanafelt, 2006). In this study, perceived stress was the degree in a circumstance in one's life are estimated stressful (Cohen, Kamarck, & Mermelstein, 1983). In addition, Horwitz, Hill, and King (2011) studied the direct relationship between stress and suicidal ideation without considering the mediating variables between this association; however, this study attempts to include mediating variables (hopelessness and hardiness) between this association. Hence, perceived stress was included as one of the independent variables (exogenous variable) in clarifying suicidal ideation.

Several studies have shown a significant relationship between hopelessness and suicidal ideation (Alavi, Sharifi, Ghanizadeh, & Dehbozorgi, 2012; Ayub, 2009; Polanco-Roman & Miranda, 2013). However, based on searching on Google Scholar, PubMed, Science Direct, and Psycho Info websites from year of 2000 to 2015, no study has considered hopelessness as a mediating role between problem-solving skills appraisal and perceived stress with suicidal ideation among Malaysian undergraduate students. Therefore, this study efforts to understand the role of hopelessness as a mediating role between perceived stress and problem-solving skills appraisal with suicidal ideation among undergraduate students. In addition, although the hopelessness literature and perceived stress literature have related to suicidal ideation, these literatures have remained independent from each other. Clarifying these relationships can provide competent prevention and intervention programs about the reduction of suicidal ideation.

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Based on searching on Google Scholar, PubMed, Science Direct, and Psycho Info websites from year of 2000 to 2015, no study has employed hardiness as a mediating role in suicidal ideation research, thus far, many of the studies on hardiness have concentrated on managing with stress (Phillips, 2011; Vidrine et al., 2011). From the theoretical perspective, this study aims to expand the hardiness theory on suicidal ideation among undergraduate students. The literature review shows the value of hardiness as an important factor for health behaviors, even though not particularly towards suicidal ideation (Jameson, 2013). Furthermore, the literature review shows the need of research regarding suicidal ideation and hardiness, which is considered to be necessary for enhancement of public health. There is still a gap in the literature according to numerous evidence of the associations between poor problem-solving skills appraisal, perceived stress, and suicidal ideation. The reasons why individuals with poor problem-solving skills and high perceived stress experience high levels of suicidal ideation are ambiguous. This is because majority of the studies in this area only addressed the linear associations between poor problem-solving skills and stress with suicidal ideation without considering other influencing variables. Thus, the current study can be fruitful in clarifying the association between problem-solving skills appraisal and perceived stress with suicidal ideation and the variables influencing the association.

Past studies have recognised diverse socio-demographic as risk factors of suicidal ideation or suicide, and among these factors, gender differences seem to be the most significant factors (Fukuchi, Kakizaki, Sugawara, Tanji, & Watanabe, 2013). Gender differences in suicidal ideation have been recorded in the literature (Maniam et al., 2014). For example, many studies have shown that women experience more suicidal ideation than men (Kõlves, Ide, & De Leo, 2010; Lee, Hahm, & Park, 2013; Moon & Park, 2012). The Malaysian National Suicide Registry reported that the rate of completed suicide among males are higher than females. In addition, it is reported that for the first eight months of 2010, 445 individuals commit suicide (347 males and 98 females) more than the number of individuals committed suicide 290 cases in the year of 2008 (National Suicide Registry Malaysia, 2008). Even though existing results reveal that gender differences in suicidal ideation exist, most suicidal ideation research has performed in Western countries, and no study has researched the impact of gender differences between hardiness, problem-solving skills appraisal, hopelessness, and perceived stress with suicidal ideation among Malaysian undergraduate students. Thus, the aim of this study is to determine whether gender plays a moderating effect on the relationships between exogenous variables and suicidal ideation among Malaysian undergraduate students. Subsequently, findings on the moderating role of gender differences in the relationships between hardiness, problem-solving skills appraisal, hopelessness, and perceived stress with suicidal ideation may contribute towards the development of suicidal prevention and intervention programs that are also sensitive to gender differences.

In addition, one of the duties of scholars is identifying factors associated with suicidal ideation among Malaysian undergraduate students in order to suggest prevention and intervention programs. Also, psychologists and therapists should determine the contributors of suicidal ideation in order to find the right solutions for suicidal ideation as the strongest predictor of the suicidal act among undergraduate students as a highest

at-risk population. Therefore, this study attempts to fill out this void in the suicidal ideation literature.

Finally, the majority of suicidal studies have been performed in Western European and American samples as individualistic countries (Becker-Weidman, Jacobs, Reinecke, Silva, and March, 2010; Gibbs et al., 2009; Pollock and Williams, 2004). There is a need to replicate the study in other parts of the word due to cultural and geographic variation to explore the generalizability of the findings. Theories of suicidal ideation and research findings about suicidal ideation will be more fruitful if they can be applied to different cultures. In Malaysia as a collectivistic culture, however, suicidal ideation has been relatively little studied in terms of its association with problem-solving skills, perceived stress, hopelessness, and hardiness. Therefore, the current study attempts to provide a deeper understanding of the relationships between perceived stress, problem-solving skills appraisal, hopelessness, hardiness, and suicidal ideation among Malaysian undergraduate students with a particular focus on cognitive development. Clarifying these relationships can provide competent prevention and intervention programs for the reduction of suicidal ideation.

Like many other countries where suicidal ideation and suicide rates vary across different religions, inequality in suicidal ideation and suicide rates are also present in multi-religion society like Malaysia. Although the ratio of religions throughout Malaysia remained consistent. Nonetheless, it should be noted that conclusions about the changes in suicide trends cannot be drawn directly due to the methodological differences between these studies (Foo et al., 2014). In addition, suicidal ideation is one of the strongest predictors of suicide, and study about suicidal ideation according to different religions can provide prevention programs for the reduction of suicidal ideation that be sensitive to religions.

1.3   Research Questions

Based on the structural relationships between studied variables, the following research questions were presented:

1. Are there relations between problem-solving skills appraisal, perceived stress, hardiness, hopelessness, and suicidal ideation among undergraduate students in public universities in Selangor?

2. To what extent hardiness and hopelessness mediate the relationships between problem-solving skills appraisal and perceived stress with suicidal ideation among undergraduate students in public universities in Selangor?

3. To what extent gender moderates the relationships between perceived stress, problem-solving skills appraisals, hopelessness, hardiness, and suicidal ideation among undergraduate students in public universities in Selangor?

4. What is the unique predictor (problem-solving skills, perceived stress, hopelessness, and hardiness) of suicidal ideation among undergraduate students in public universities in Selangor?

5. Are there differences on the amount of suicidal ideation, perceived stress, hardiness, hopelessness, and problem-solving skills appraisal according to different religions among undergraduate students in public universities in Selangor?

1.4   Objectives of the Study

1.   To determine the relationships between problem-solving skills, perceived stress, hopelessness, and hardiness with suicidal ideation among undergraduate students in public universities in Selangor.

2.   To determine the mediating roles of hardiness and hopelessness between problem-solving skills appraisal and perceived stress with suicidal ideation among undergraduate students in public universities in Selangor.

3.   To determine the moderating role of gender on the relationships between perceived stress, problem-solving skills appraisals, hopelessness, hardiness, and suicidal ideation among undergraduate students in public universities in Selangor.

4. To determine the unique predictor (problem-solving skills, perceived stress, hopelessness, and hardiness) of suicidal ideation among undergraduate students in public universities in Selangor.

5. To determine differences on the amount of suicidal ideation, perceived stress, hardiness, hopelessness, and problem-solving skills appraisal according to different religions among undergraduate students in public universities in Selangor.

1.5   Research Hypotheses

Objective 1:

Hypothesis 1: There is a significant negative association between problem-solving skills appraisal and hardiness among undergraduate students.

Hypothesis 2: There is a significant positive association between problem-solving skills appraisal and hopelessness among undergraduate students.

Hypothesis 3: There is a significant positive association between problem-solving skills appraisal and suicidal ideation among undergraduate students.

Hypothesis 4: There is a significant negative association between perceived stress and hardiness among undergraduate students.

Hypothesis 5: There is a significant positive association between perceived stress and hopelessness among undergraduate students.

Hypothesis 6: There is a significant positive association between perceived stress and suicidal ideation among undergraduate students.

Hypothesis 7: There is a significant positive association between perceived stress and problem-solving skills appraisal among undergraduate students.

Hypothesis 8: There is a significant negative association between hardiness and hopelessness among undergraduate students.

Hypothesis 9: There is a significant positive association between hopelessness and suicidal ideation among undergraduate students.

Hypothesis 10: There is a significant negative association between hardiness and suicidal ideation among undergraduate students.

Objective 2:

Hypothesis 11: The influence of problem-solving skills appraisal on suicidal ideation is mediated by hardiness among undergraduate students.

Hypothesis 12: The influence of problem-solving skills appraisal on suicidal ideation is mediated by hopelessness among undergraduate students.

Hypothesis 13: The influence of perceived stress on suicidal ideation is mediated by hardiness among undergraduate students.

Hypothesis 14: The influence of perceived stress on suicidal ideation is mediated by hopelessness among undergraduate students.

Objective 3:

Hypothesis 15: Gender moderates the relationship between exogenous variables (perceived stress, problem-solving skills appraisal, hopelessness, and hardiness) and endogenous variable (suicidal ideation) among undergraduate students.

> *Hypothesis 15-1*: Gender moderates the relationship between perceived stress and suicidal ideation among undergraduate students.

> *Hypothesis 15-2*: Gender moderates the relationship between problem-solving skills appraisals and suicidal ideation among undergraduate students.

> *Hypothesis 15-3*: Gender moderates the relationship between hopelessness and suicidal ideation among undergraduate students.

> *Hypothesis 15-4*: Gender moderates the relationship between hardiness and suicidal ideation among undergraduate students.

Objective 4:

Hypothesis 16: The standardized beta coefficients for selected variables do not equal zero when regressed against undergraduates' suicidal ideation.

1.6   Significance of the Study

The current study is really needed for various reasons. The findings of the present study added great values for theoretical expansion, prevention and intervention programs, and policy development. In addition, the findings of the present study are extremely valuable for adolescents, families, universities, treatment services, and societies. Furthermore, this study develops the previous study by investigating of cognitive factors of suicidal ideation in the structural model, mediation, and moderation models, and did not study the roles of perceived stress, problem-solving skills appraisal, hopelessness, and hardiness with suicidal ideation among Malaysian undergraduate students.

For theoretical expansion, the current study extends the Shneidman (2005) theory of suicidality by integrating other related variables, such as hardiness (hardiness theory), hopelessness (the diathesis-stress-hopelessness theory) to clarity on the interactions between variables, and to explain the phenomenon of suicidal ideation, especially among Malaysian undergraduate students. Therefore, further understanding of suicidal symptoms among undergraduate students would hopefully lead to better outcomes.

In respect to prevention and intervention, this study investigates suicidal ideation and cognitive factors of suicidal ideation among undergraduate students. First, when considering the risk of suicidal ideation in individuals. It is consequential to account for the attendance of poor problem-solving skills, high perceived stress, hopelessness, and low hardiness in addition to other risk factors. Second, hardiness and effective problem-solving skills can alter the effect of suicide risk factors; these are important factors to incorporate into suicide prevention and intervention programs. Decreasing suicidal risk in individual is an essential part of any prevention and intervention programs.

Such awareness can be helpful for policy-makers to organize mental health policy in the national curriculum for preventing suicide among undergraduate students as a highest risk population. Problem-solving skills and hardiness are the significant factors in suicide and suicidal ideation that are to be studied, and the Ministry of Science should promote university-base suicide prevention programs and training effective problem-solving skills and hardiness for preventing suicide and suicidal ideation during adulthood.

The findings from this study are useful for the family members, as they will be able to identify and address suicidal symptoms. In addition, process of treatment needs a supportive network of family members, and other individuals have a communication with adolescents with suicidal ideation symptoms; they obtain a great understanding

related to risky and protective factors of suicidality among adolescents. Universities will be impacted by the findings of the current study; university counselors will be aware of related factors associated with suicidality, and these findings assist to get better mental health among undergraduate students. Therefore, the current study can bring a benefit to develop of suicide-university prevention programs at universities in Malaysia in order to equip students to manage the problems effectively, ultimately it contributes to decrease suicide. The findings of the present study will lead to healthier communities.

In reviewing of accessible literatures, no studies have conducted on the relationships between problem-solving skills appraisal, perceived stress, hopelessness, and hardiness with suicidal ideation. This research can expand the knowledge about deeper understanding of suicide risk factors and increased literature relevant to problem-solving skills appraisal, perceived stress, hopelessness, and hardiness associated with suicidal ideation among undergraduate students. In addition, the data from this research increase the knowledge of suicidal ideation and it is even helpful for all people throughout the world that engage in risk of suicide. Thus, it is imperative to study about suicidal ideation and cognitive factors of suicidal ideation to increase knowledge about suicide prevention.

1.7   Definition of Terminology

The studied variables are defined conceptually and operationally.

Problem-Solving Skills Appraisal

Conceptual: Problem-solving skills appraisal was explained as one's perception about personal problem-solving style, and they evaluate their abilities and skills in order to solve problems during their lives (Heppner et al., 2004).

Operational: Problem-solving skills appraisal refers to the respondent's score on the Problem-Solving Inventory (PSI; Heppner, 1988). Total score viewed as a problem-solving skills appraisal. High score in the problem-solving skills appraisal means the low problem-solving skills appraisal, and vice versa.

Perceived Stress

Conceptual: Perceived stress was defined as the degree in a situation one's life is appraised stressful (Cohen et al., 1983). The cognitive-transactional stress theory (Lazarus & Folkman, 1984) suggested that cognitive appraisal was more important than real stressors.

Operational: Perceived stress refers to respondent's score on Perceived Stress Scale (PSS; Cohen et al., 1983). These questions are about how people perceive stressful conditions in lives during the last month. Higher scores equal to higher level of perceived stress, and lower score equal to lower level of perceived stress.

Hopelessness

Conceptual: Hopelessness was defined as a system of cognitive schemas that leads to negative expectations about the future (Beck, Weissman, Lester, & Trexler, 1974).

Operational: Hopelessness refers to respondent's score on the Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974). The higher score in this scale means that respondent has a higher level of hopelessness, and lower score means a lower level of hopelessness.

Hardiness

Conceptual: Hardiness was defined as a cognitive ability comprises of three components (commitment, control, challenge). Commitment defined as struggling with the hard conditions and changing difficult conditions to exciting and meaningful conditions. Control defined as opinions and attitudes that someone can effect on the way of events and not in verse. The challenge is the attitude that can alter part of life and is making an opportunity for growth (Kobasa, 1979).

Operational: Hardiness refers to respondent's score on Personal Views Survey (PVS-III-R; Maddi et al., 2006). The higher score means that respondent has a high ability of hardiness, and vice versa.

Suicidal Ideation

Conceptual: Suicidal ideation refers to thoughts of engaging in behavior intended to end one's life (Beck, Weissman, Lester, & Trexler, 1974).

Operational: Suicidal ideation refers to respondent's score on Beck Scale for Suicidal Ideation (BSSI; Beck, Steer, & Ranieri, 1988). BSSI was used to assess suicidal ideation among undergraduate students. A respondent who gets a high score in BSSI, which means that he or she has a higher tendency of suicidal thoughts.

Demographic Characteristics

Conceptual: Demographic characteristics are one's series of characteristics and properties to display his or her description (Christenson, Rounds, & Gorney, 1992).

Operational: Demographic characteristics in the present study refer to the gender, race, age, educational level, income, marital status, and religious affiliation. Age is a continuous variable, and the remaining items are categorical variables.

1.8   Theoretical Background

The current study examines the relationships between problem-solving skills appraisal, perceived stress, hardiness, and hopelessness with suicidal ideation among undergraduate students. In this study, the model of suicidal ideation created by

Shneidman (2005), hardiness theory created by Kobasa (1987), and the diathesis-stress-hopelessness theory created by Schotte and Clum (1982) in order to clarify the relationships between studied variables were employed.

Shneidman Theory

Shneidman (2005) is one of the founders of suicidology who greatly contributes to understanding of cognitive processes of suicidal ideation (Jobes & Nelson, 2006). According to Shneidman theory, suicidal ideation is an outcome of excruciating pain, stress, and ineffective problem-solving skills. Someone who cannot bear this unacceptable pain, a thinks that commit suicide is the best solution to escape from distasteful situation. Shneidman (1993) proposed six sections in the progress to suicide: (1) incident of life stresses and mental abasement; (2) effect of additional vulnerabilities, such as genetic and social factors; (3) appraise stressors as a negative and excruciating; (4) apprises stressors as an unbearable and unacceptable phenomenon; (5) thought about suicide as the best solution to diminish mental pain; and (6) level of pain that exceeds one's threshold for tolerating or bearing psych ache. The common intention to the most suicides is to seek a solution to eliminate the unbearable stress. Shneidman (1993) postulated that unbearable stress is directly connected with suicidality, and depression mediates the relationship between unbearable stress and suicidal ideation.

Shneidman indicated that psycho-ache is the excruciating personal experience such as, shame, embarrassment, upset, suffering, aloneness, and fear. Shneidman comments that psych-ache is the "introspective recognition of perturbation" (Shneidman, 2005). The means of perturbation is the continuum of peaceful and unruffled to frantic and excessively nervousness. Shneidman (2005) assumed that psych-ache is produced from frustrated psychological needs. Shneidman emphasized that suicide is the result of psycho-ache, and he believed that someone will commit suicide when experience excruciating psychological ache. Shneidman (2005) believed that the main reason of each suicide is looking for a solution for own psycho-ache or unbearable pain.

Shneidman believes that successfully commit suicide in males are more than females and suicidal ideation in females are more than males (Williamson & Shneidman, 1995). The explanation for increased suicide in men is that females are less inclined to commit suicide because their thinking is more inclusive. While a man might tend to throw aside seemingly peripheral issues to get to the core of a problem, a woman might take more things into account. Females may continue to seek input and process problems long after the point where men decide on a course of action. Another explanation for increased suicidal ideation in females is that they process their experiences with friends. They discuss their feelings, seek feedback and take advice. They are much more likely to tell a physician how they feel and cooperate in the prescribed treatment. As a result, women get better treatment for their suicidal ideation, and they are less likely to commit suicide. Next explanation for increased suicide in males is that 72-89% of females who committed suicide had contact with a mental health professional at some point in their life, only 41-58% of males who committed suicide had made use of this resource.

Given the clear gender differences in suicide attempts, it would seem likely that there are also gender differences in suicidal ideation, but the findings are inconclusive. In studies of university students, either no gender differences have been found (Brener et al., 1999; Langhinrichsen-Rohling, Sanders, Crane, & Monson, 1998; Reynolds, 1991a, 1991b; Rudd, 1989; Wellman & Wellman, 1986), or males have reported more ideation than their female peers (Borthnick, 1998; Eshun, 2000; Langhinrichsen-Rohling, Lewinsohn et al., 1998). In other studies, females have reported more ideation than their male peers (Andrews & Lewinsohn, 1992; Perkins & Hartless, 2002; Simons & Murphy, 1985). This study tries to understand gender differences in suicidal ideation among undergraduates.

Hardiness Theory

Hardiness is the multifactor concepts that was proposed by Kobasa (1979), and this concept originated from her study on married male managers, who were in good psychological and physical health regardless of stressful situations (Sussman, 2002). Maddi (2004) purposed that hardiness is a mediator between perceived stress and health behaviors, which means that in the primary appraisals, people interpret the situation as challengeable or threatening. Secondary appraisal is, one has enough and accessible recourses to challenge with environmental situation, and then act in order to cope the stressor. Therefore, hardy people estimate stressful situation more controllable than threatening. Maddi, Harvey, Khoshaba, Fazel, and Resurreccion, (2009) defined hardiness as a pattern of attitudes and skills that facilitate resilience under stressful situation by turning stressful conditions from potential disasters into opportunities to grow in wisdom and performance. Hardy people are more likely to apply personal control of emotion than avoiding approach (Kobasa, 1979). Furthermore, individuals with effective problem-solving skills when faced with the problem, they are more likely to use hardi-attitude and skills in order to deal with the problem through providing the courage to transcend adversity and the motivation to cope and interact effectively (Abdollahi, Abu Talib, Yaacob, & Ismail, 2014).

The term hardiness was explained by Kobasa (1979) as a way of understanding a person's relation with others, their goals, and problems. Kobasa (1979) defined hardiness as an ability incorporating three components – commitment, control, and challenge – to prepare an individual to handle problematic life events (Klag & Bradley, 2004; Pengilly & Dowd, 2000). Commitment was defined as a person committed to activities such as work, sport, academic, religion, or hobby, where each activity is meaningful and interesting for him/her. Control was defined as a person who believes that they can be responsible of her/his life experiences. By having control, she/he can decide in his or her life and manage her/his own life and events. Challenge was defined as a person perceiving the world as an opportunity to develop and be a good learner (Kobasa, et al., 1982). Individuals with high levels of challenge attempt to extract strengths from previous experience and overcome any upcoming problems rather than withdrawing from stressful situations.

According to the hardiness theory, hardiness can play an influencing and enhancing role against suicidality. First, it showed that situation appraisal is important when this

situation is assessed as a threatening and uncontrollable situation. In this situation, the likelihood of suicidal ideation increased. Second, positive assessment of the events may be an influencing factor against suicidality. The model showed that a positive assessment of a stressful condition positively impacts on the cognitive system. Thus, the present study examined the role of hardiness as a mediator between problem-solving skills appraisal and perceived stress with suicidal ideation among undergraduate students. In addition, there is still a gap in the literature according to numerous evidence of the association between poor problem-solving skills and perceived stress with suicidal ideation (Polanco-Roman & Miranda, 2013; Stratta et al., 2014). The reasons why individuals with poor problem-solving skills and perceived stress experience high level of suicidal ideation is ambiguous. This is because most of the studies in this area only addressed the association between poor problem-solving skills and perceived stress with suicidal ideation without considering other influencing variables. It is conceivable that hardiness as a resilience factor facilitates stressful condition or ineffective problem-solving skills by turning these negative circumstances from potential disasters into opportunities. Therefore, this study may be useful in clarifying the association between independent variables (exogenous variables) with suicidal ideation, and the influencing variables.

The Diathesis-Stress-Hopelessness Theory

Hopelessness has been proposed to be a mediating variable between other variables (e.g., depression, life stress) and suicidal behavior (Zeyrek et al., 2009). Hence, it is thought that other variables may contribute to feelings of hopelessness, which may then manifest into suicidality. One model that has incorporated this concept is the diathesis-stress hopelessness theory of suicidal ideation (Schotte & Clum, 1982). Diathesis refers to a predisposition to a potential disease or condition. Therefore, this model focuses on the relationships between hopelessness, poor problem-solving skills, perceived stress, and suicidal ideation. Schotte and Clum (1982) proposed hopelessness is a mechanism through which ineffective problem-solving skills results in suicidal ideation. That is, being cognitively inflexible prevents individuals from engaging in effective problem solving response during stressful times, leading to higher degrees of hopelessness and suicidal ideation. Indeed, there is a sign that suicide ideators and attempters are differentiated by poor problem-solving skills (Schotte and Clum, 1987). Furthermore, individuals high in hopelessness and suicidal eager have been found to perform more poorly on measures of a problem- solving (Schotte & Clum, 1982), and both problem-solving deficits and perceived stress. Ineffectiveness in problem-solving skills and higher perceived stress are linked with higher levels of hopelessness and suicidal ideation (Miranda, Valderrama, Tsypes, Gadol, & Gallagher, 2013; Schotte & Clum, 1982). The diathesis-stress-hopelessness theory expands on the stress-vulnerability model, suggesting that when a person who lacks problem-solving skills experiences a considerable amount of stress, that person is unable to effectively reach a resolution. This can facilitate feelings of hopelessness and may lead to suicidal ideation (Schotte & Clum, 1982).

1.9   Integration of Theories

In general, there is no single theoretical approach that explain the associations between problem-solving skills appraisal, perceived stress, hopelessness, and hardiness with suicidal ideation among undergraduate students. Thus, the present study integrate three theories (Shneidman Theory, Hardiness Theory and Diathesis-Stress-Hopelessness Theory) to comprehensively explore suicidal ideation. The integration of the three theories in understanding suicidal ideation is presented in Figure 1.1.

Shneidman Theory explains suicidal ideation is a direct result of high levels of stress and poor problem-solving skills (Shneidman, 2005), and is consistent with observations by (Allisha A. Patterson, Msc, 2012; Kiamanesh, Dieserud, & Haavind, 2015). Shneidman Theory cannot provide a full understanding of the cognitive process between perceived stress and problem-solving skills appraisal with suicidal ideation. Diathesis-Stress-Hopelessness Theory of suicidal ideation (Schotte & Clum, 1982) provides a further understanding of the mediating role of hopelessness. This model suggests that individuals with deficient in the capacity for divergent thinking are cognitively unprepared to cope with the high levels of life stress, and these individuals are more prone to feelings of hopelessness when negative life events occur as a result of their inability to engage in effective problem solving. Consequently, hopelessness places these individuals at risk for suicidal ideation. Also, the diathesis-stress-hopelessness model suggests that when a person experiences a considerable amount of negative life events or life stressors, this condition can facilitate feelings of hopelessness and may lead to suicidal ideation (Dixon, Heppner, & Anderson, 1991). In other words, the diathesis stress- hopelessness model includes hopelessness as a mediating factor between stress/problem-solving skills and suicidal behavior.

Hardiness Theory (Kobasa, 1979) suggests that hardiness as a secondary appraisal helps individuals to use hardi-attitude and skills in order to deal with the stressful condition through providing the courage to transcend adversity and the motivation to cope and interact effectively. Hardy individuals also are less likely to assess stressful conditions as threatening and uncontrollable conditions; therefore, they are less likely to suffer from suicidal thoughts. These individuals are more likely to apply hardiness in order to reduce the likelihood of suicidal thoughts, and they are more flexible in facing problems (Erbes et al., 2011).

The present study adds hardiness and hopelessness as mediators to the theoretical framework. Thus, Hardiness Theory and Diathesis-Stress-Hopelessness Theory were adopted to complement Shneidman Theory in explaining the links between perceived stress and problem-solving skills appraisal with suicidal ideation.

Given the conflicting findings on the relationship between gender and suicidal ideation. This study examined the moderating role of gender on the relationships between problem-solving skills, perceived stress, hopelessness, and hardiness with suicidal ideation among undergraduate students.

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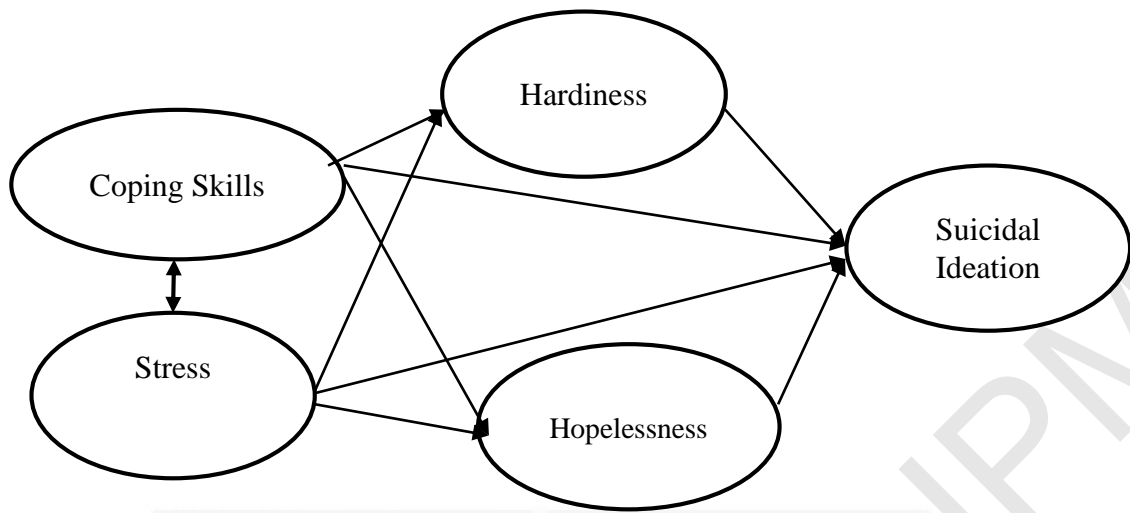
Figure 1.1 Theoretical Framework

1.10 Conceptual Framework of the Study

The current research framework relies on theoretical background, and strongly supported by empirical research that create deeper understanding the predictors of suicidal ideation among undergraduate students. The conceptual framework of this study also depicts the role of hardiness and hopelessness as chosen mediators between exogenous and endogenous variables.

The positions of these variables are proposed earlier in the research objectives; the first research objective seeks to examine the relationships between problem-solving skills appraisal, perceived stress, hopelessness, and hardiness with suicidal ideation among undergraduate students in public universities in Selangor. The second research objective seeks to examine the roles of hardiness and hopelessness as mediators between problem-solving skills appraisal, perceived stress with suicidal ideation among undergraduate students. The third research objective seeks to examine the moderating role of gander between exogenous variables (problem-solving skills appraisal, perceived stress, hopelessness, and hardiness), and endogenous variable (suicidal ideation) among undergraduate students.

The studied variables were selected based on theories and past research studies. The independent variables include perceived stress and problem-solving skills appraisal, and the mediating variables include hardiness, hopelessness, and an outcome variable is suicidal ideation (See Figure 1.2). The framework of this study is supported by Shneidman theory (2005) of suicidal ideation, hardiness theory (Kobasa, 1979), and the diathesis-stress hopelessness model (Schotte & Clum, 1982). This study developed Shneidman's suicidal ideation theory by incorporating hardiness theory and the diathesis-stress hopelessness theory.

According to Shneidman theory, suicidal ideation is an outcome of high levels of perceived stress and ineffective problem-solving skills. Shneidman assumes that

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adolescents who are exposed to high levels of stress, and they do not have effective problem-solving skills may suppose that committed suicide is the best solution to escape from distasteful situation. Therefore, this theory explains the direct relationships between problem-solving skills appraisal and perceived stress with suicidal ideation.

The diathesis stress-hopelessness theory (Schotte & Clum, 1982) highlights the role of hopelessness as a mediating variable between problem-solving skills and perceived stress with suicidal ideation. Schotte and Clum (1982) proposed that hopelessness is a mechanism through which ineffective problem-solving skills and perceived stress eventuates to suicidal ideation. Schotte and Clum (1982) suggest that individuals with high levels of perceived stress and poor problem-solving skills become hopeless when they are not able to find efficient solutions to life's problems. Therefore, hopelessness is a consequence of this process, and ultimately may lead to suicidal ideation. Therefore, this theory explains the mediating role of hopelessness between problem-solving skills appraisal and perceived stress with suicidal ideation. The proposed framework suggests that problem-solving skills and perceived stress indirectly influence suicidal ideation.

Two mechanisms have been proposed to explain the effect of hardiness as a mediator: individuals with effective problem-solving skills have a motivation to carry on hardi-attitude and skills during stressful situations, and appraise stressful conditions as being more challenging and controllable (Maddi et al., 2009). Therefore, individuals with effective problem-solving skills are more likely to apply hardiness in order to reduce the likelihood of suicidal thoughts, and they are more flexible in facing problems (Erbes et al., 2011). In addition, individuals with poor problem-solving skills and hardi-attitude and skills are less likely to think of suicide, because hardiness helps them by managing their emotions, commitment to their useful social activities, and challenge with their threatening and stressful conditions, and provides resilience by turning negative conditions into opportunities to grow and wisdom (Kobasa, et al., 1982). Also, hardy individuals also are less likely to assess stressful conditions as threatening and uncontrollable conditions; therefore, they are less likely to suffer from suicidal thoughts (Delahaij, Gaillard, & van Dam, 2010; Kobasa et al., 1982). Therefore, the present study is designed to understand the role of hardiness as a mediator between problem-solving skills appraisal and perceived stress in relation to suicidal ideation. In addition, gender is proposed to moderate the links between studied variables. Supporting prior empirical findings are presented in Chapter 2.

This study aims to expand, develop, and test of suicidal ideation by integrating hardiness theory and diathesis-stress-hopelessness theory in order to deeper understand the variables' impact on suicidal ideation among undergraduate students.
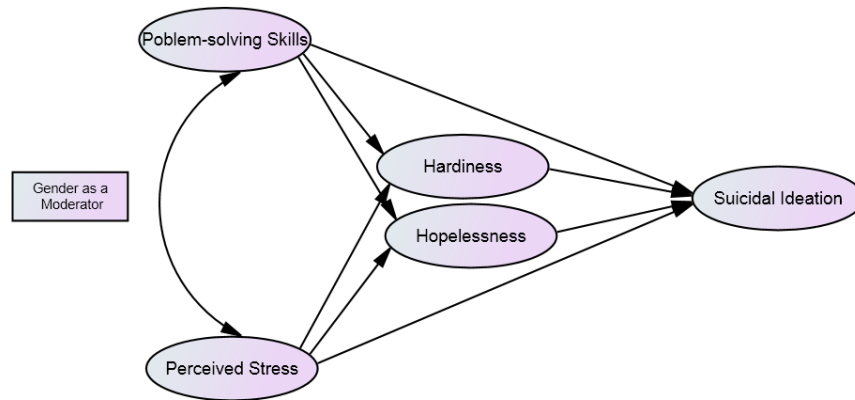
Figure 1.2 Conceptual framework of the study

1.11 Organization of the Dissertation

This study is designed in five chapters.

Chapter 1: The first chapter discusses the prevalence of suicidal ideation among adolescents, especially university students aged between 18 to 24 years, and the relationship between studied variables with suicidal ideation. In addition, the background of study, problem statement, research questions, research objectives, significance of study, research hypotheses, and theoretical framework are explained.

Chapter 2: This review chapter discusses about suicidal ideation based on different psychological perspectives, and critically reviewing previous suicidal studies.

Chapter 3: The section includes the research framework, research design, research setting, sample procedure, measuring instruments, pilot study, data collection procedure, data analysis, data preparation, and measurement model.

Chapter 4: This chapter reports the respondent's demographic profile; next data is analysed based on Structural Equation Modelling (SEM) including the structural model, the mediating model, and the moderating model.

 Chapter 5: The last chapter gives a summary of research findings, conclusion, limitations, and suggestions for further studies.

1.12 Chapter Summary

This chapter presented the research area by expressing the background of the study, statement of problem, research questions, and definition of terminology. Theoretical background and conceptual framework that clarified the relationships between studied variables are included.

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