UNIVERSITI PUTRA MALAYSIA

EFFECTIVENESS OF A WEB-BASED PSYCHO-EDUCATION INTERVENTION PROGRAM ON DEPRESSION AND ANXIETY AMONG ADULTS IN SELANGOR, MALAYSIA

SITI FATIMAH BINTI KADER MAIDEEN

FPSK(p) 2016 37
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By

SITI FATIMAH BINTI KADER MAIDEEN

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

August 2016
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DEDICATION

To
My parents
Siblings
Family

Who I owe success of my life
Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the Degree of Doctor of Philosophy

EFFECTIVENESS OF A WEB-BASED PSYCHO-EDUCATION INTERVENTION PROGRAM ON DEPRESSION AND ANXIETY AMONG ADULTS IN SELANGOR, MALAYSIA

By

SITI FATIMAH BINTI KADER MAIDEEN

August 2016

Chairman : Professor Sherina Mohd Sidik, PhD
Faculty : Medicine and Health Sciences

Mental disorders are a major global public health problem. Among all the mental health disorders, depression and anxiety are the most common. The burden and disability resulting from mental disorders is significant, and yet mental disorders are largely left untreated and patients do not receive professional care. This research has been conducted with the aim of determining the prevalence and predictors of depression and anxiety among adults in Selangor, and how a brief psycho-education program can address this problem. A cross sectional study was conducted in three districts of Selangor, from 11th June to 30th December 2012. The sampling frame was obtained from the Department of Statistics Malaysia (DOS) in May 2012, using the National Population and Housing Census 2010. Adults aged 18 years and above who were Malaysian citizens and living in the selected living quarters were approached to participate in the study and were requested to complete a set of questionnaires. A total of 1,556 out of 2,512 participants participated in this study, giving an overall study response rate of 61.90%. Patient Health Questionnaire 9 (PHQ-9) was used to determine the presence of depression, whereas the Generalized Anxiety Disorder 7 (GAD 7) was used to detect anxiety. The prevalence of depression and anxiety in this study was 10.3% and 8.2%, respectively. Based on the multivariate logistic regression analysis, the predictors of depression were presence of anxiety, serious problems at work, unhappy relationship with children, high perceived stress, domestic violence, unhappy relationship with spouse, low self-esteem, unhappy relationship with family, serious financial constraint and the presence of chronic diseases. Based on the additional multivariate logistic regression analysis whereby all the covariates were considered except high stress, anxiety, and low self-esteem, the additional predictors of depression were serious marital problem, non-organizational religious activity and intrinsic religiosity. The predictors of anxiety were depression, serious problems at work, domestic violence and high perceived stress. Based on the additional multivariate logistic regression analysis after removing stress, depression and self-esteem, the additional predictors of anxiety were cancer, unhappy relationship with family, non-organizational religious activity and intrinsic religiosity. A brief web-
based psycho-education intervention program was developed based on these predictors. The intervention program consisted of four sessions, with each session accessed on a weekly basis. A two-arm randomized controlled trial of a single blind study was conducted to compare four weeks of the web-based psycho-education intervention program versus a wait list control group. Participants who have participated in the first phase of this study and who were still living in Selangor; having access to computer and internet connection and are internet literate were invited to participate in the study. A list of eligible participants who consented to participate in the study was numbered. By using a random number table, the participants were randomly allocated to either the intervention or the control group. A total of 119 participants were included in Phase 2 of study. All the participants completed the online questionnaires at week 1, week 5 and week 12. Participants in the intervention group were allowed to view the full content on the website and use the program as frequently and for as long as they wanted. The primary outcomes of this study were the change in depressive and anxiety score, whereas the secondary outcome was the change in the mental health literacy score. The baseline scores of outcome measures showed no significant differences between the intervention and control group. The mixed between-within subject ANOVA was used to compare mean difference of the psycho-education intervention program between the intervention and control groups at baseline, post-test (week 5) and 2-months of follow up (week 12). Results revealed a significant difference in the mental health literacy between the intervention and the control group. No significant difference was found in the depression and anxiety scores. The psycho-education intervention was found to be effective in increasing the mental health literacy of the participants.

**Keywords:** Depression, anxiety, adult, community, psycho-education, RCT
 iii

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

KADAR EFEKTIF PROGRAM PENDIDIKAN BERASASKAN PSIKOLOGI DI LAMAN SESAWANG UNTUK KEMURUNGAN DAN KEBIMBANGAN DI KALANGAN ORANG DEWASA DI SELANGOR, MALAYSIA

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Kata kunci: Kemurungan, kebimbangan, dewasa, komuniti, pendidikan-psiko, RCT
ACKNOWLEDGEMENTS

All praises are due to Allah SWT, who blessed and showered His grace upon me, enable me and given me the strength to complete my studies successfully. So much gratitude to Him for giving me the opportunity to come this far in life.

I am very grateful to everyone who helped and supported me throughout my studies. Specifically, I would like to express my sincere gratitude and appreciations to my main supervisor, Professor Dr. Sherina Mohd Sidik for being the most helpful, understanding and supportive supervisor that one can have. I am indebted for your guidance, encouragement, assistance and patience showed throughout my studies. Thank you also for lifting my spirit whenever “I’m down”. I would also like to wish much appreciation to Professor Dr. Lekhraj Rampal for all his guidance, support and motivation. He is very fatherly to all of us. Thank you so much for both my supervisors who always been inspiring and admiring to us. Also, I would like to thank Dr. Firdaus Mukhtar for allowing me to follow her CBT class for the whole month. From this class, I acquired much knowledge about depression and anxiety and was able to differentiate these two illnesses better. Thank you very much Dr.

I am very grateful to my mother and father for showering me with continuous love, care and support. Thank you so much for brought up us well and for everything. I am also very fortunate to have such a wonderful, supportive and loving parents, siblings and sister-in-laws who always constantly motivates me and be there whenever I am in need. Thank you for all the moral support and constant duas for my success. Special thanks to my three little cute nieces for being there and making my life cheerful and happy. Thank you Allah for giving me blissful life.

Special dedication and thanks to my special friends for always being there, for the help offered and endless motivation throughout my studies. Words can’t describe my gratitude and appreciation to all of you. May Allah bless you and your families.

I would also take this opportunity to thank everyone who involved directly and indirectly to complete my studies, including all the academic staffs of UPM for sharing their knowledge and experience. Thanks also for the research funders and all the participants of this study. Thank you very much everyone.
I certify that a Thesis Examination Committee has met on 4 August 2016 to conduct the final examination of Siti Fatimah binti Kader Maideen on her thesis entitled "Effectiveness of a Web-Based Psycho-Education Intervention Program on Depression and Anxiety among Adults in Selangor, Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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LIST OF ABBREVIATIONS

AUDADIS-IV  The Alcohol Use Disorder and Associated Disabilities Interview Schedule–DSM-IV Version
BRFSS  Behavioral Risk Factor Surveillance System
CBT  Cognitive behavioral therapy
CDC  Centers for Disease Control and Prevention
CI  Confidence Interval
CIDI  Composite International Diagnostic Interview
CPES  Collaborative Psychiatric Epidemiology Studies
CPMD  Common perinatal mental disorders of depression and anxiety
DOS  Department of Statistics Malaysia
DSM 5  Diagnostic and Statistics Manual of Mental Disorders 5
DUREL  The Duke University Religion Index
EBs  Enumeration Blocks
FFCWS  Fragile Families and Child Well-being Study
GAD  Generalized anxiety disorder
GAD-7  Generalized Anxiety Disorder-7
GHQ  General Health Questionnaire
HADS-A  Hospital Anxiety and Depression Scale for anxiety
HARK  Humiliation, afraid, rape and kick
IPV  Intimate partner violence
IR  Intrinsic religiosity
KECA  Korean Epidemiologic Catchment Area
LEBANON  The Lebanese Evaluation of the Burden of Ailments and Needs of the Nation
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<td>MHLQ</td>
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<td>WMH-CIDI</td>
<td>World Mental Health- Composite International Diagnostic Interview</td>
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YLD  Years lived with disability
CHAPTER 1

INTRODUCTION

This chapter discusses the background of the study and defines the problem of interest in the study. It also explains the significance of the study, research objectives, hypotheses and the conceptual framework of this study.

1.1 Background

The World Health Organization (WHO) defined health as “A state of complete physical, mental and social well-being and not merely the absence of disease” (WHO, 2001). The term health does not only refer to physical health, it also includes the aspects of psychological and mental health which require sufficient recognition. A definition of mental health states “A state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”(WHO, 2001). When normal life and social functioning are affected, mental illnesses occur. In the general population, depression and anxiety are the most common mental health disorders (Kessler, Aguilar-Gaxiola, et al., 2009).

A systematic analysis from The Global Burden of Disease 2010 showed that the prevalence of major depressive disorder (MDD) and anxiety disorders was 4.33% and 3.96%, respectively (Vos et al., 2012). Mental and behavioral disorders attributed the largest amount in global years lived with disability (YLD) that is of 22.7% of total YLD. The most leading cause of global YLD in the year 2010 after low back pain, was major depressive disorder which accounted a total of 8.1% of YLDs, which caused 63 million of YLD. Anxiety disorders contributed to 3.5% of all YLD. Among the 25 leading causes of YLD, MDD ranked second globally, whereas anxiety disorders ranked seventh, in the leading causes of global YLD. However, in South East Asia, depression was the foremost cause of YLD, while anxiety remained at the seventh rank.

The global burden of disease reveals that depression has been ranked as the fourth disorder. It will probably be the highest disorder within countries that have a high income by the year 2030 (WHO, 2001). Approximately 12% of all YLD is attributed to depression in terms of disease burden (Ustun, Ayuso-Mateos, Chatterji, Mathers, & Murray, 2004). Adult Psychiatric Morbidity Survey which was carried out in England showed that 17.6% of the adult population met at least one criteria of common mental health disorder (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2007). (McManus et al., 2007). The National Survey on Drug Use and Health (NSDUH) conducted among adults who were 18 years or older within the United States (US) reported that about 45.9 million adults had any mental illness in the past year, representing 20% of the population; with 5% of them having a serious of any mental illness (Substance Abuse and Mental Health Services Administration, 2012). In the
study, any mental illness was defined as adults who met diagnostic criteria of mental, behavioral or emotional disorder in the past year based on Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV). The findings also showed that 6.8% of the adults had suffered a major depressive disorder (MDD) in the previous year.

A National Survey of Mental Health and Wellbeing that was carried out in Australia in 2007 found that those who were aged between 16 and 85 found a lifetime prevalence of mental disorders of 45% (Slade et al., 2009). An estimated 3.2 million (20%) of them had suffered mental disorders in the previous year. Being the most common mental health disorders, anxiety disorders affected 2.3 million of the Australian population, accounting for 14.4%. The survey also revealed 6.2% of Australians suffered from an affective disorder, and within the past year, 4.1% of them experienced a depressive episode.

In Singapore, a population-based survey among adult residents aged 18 years or more showed that 12.0% of the population had at least one lifetime affective, anxiety, or alcohol use disorders (Chong, Abdin, Vaingankar, et al., 2012). In Malaysia, The Fourth National Health and Morbidity Survey (NHMS IV), revealed a prevalence of Generalized Anxiety Disorder (GAD) of 1.7% and current depression of 1.8% using the Mini International Neuropsychiatric Interview (MINI) (Institute for Public Health, 2011). Various biological, social and psychological factors contribute to the occurrence of depression and anxiety disorders.

Various psychological approaches are available for the management of mental health problems, especially for depression and anxiety. One of it is psycho-education. It was noted that many patients were found to be lacking of information regarding their own health conditions and unaware on various treatment that are available (Lin, Moyle, Chang, Chou, & Hsu, 2008). Studies shown that patient education is one of the most commonly used in health promotion and was found to be effective in adhering to medications besides being often used as primary prevention (Pampallona S, Bollini P, Tibaldi G, 2002). It is understood that individuals that are empowered with knowledge have better understanding about their disorder and are more aware about the management of their disorder (Lin et al., 2008).

1.2 Problem statement

Anxiety disorders and depression affected 69.1 million and 30.3 million of people in 2010, respectively in Europe (Witcchen et al., 2011). In Malaysia, more than 300 000 of adults aged 16 years and above are suffering from depression and anxiety (Institute for Public Health, 2011). The prevalence of depression and anxiety has been found increasing over the years, globally as well as in Malaysia. The pronounced effect, especially on the quality of life, physical well-being and its long term effect in the development of other diseases are of concern. Both depressive and anxiety disorders are associated with significant economic burden with both signified as a growing public health threat (Mirza & Jenkins, 2004).
Besides that, individuals with depression and anxiety disorders were found to be associated with suicidal ideation and attempt (Mykletun et al., 2007; Nepon, Belik, Bolton, & Sareen, 2010; Sareen et al., 2005). The considerable amount of YLD due to mental and behavioral disorders (Vos et al., 2012) draw attention to the urgent need for the identification and implementation of effective and affordable strategies for this set of problems. The consequences of psychiatric morbidity can be severe if not identified and treated in the early stage (ZamZam, Thambu, Midin, Omar, & Kaur, 2009).

Although mental disorders cause about 60% of unavertable burden, there is a limited percentage of people receiving effective treatment (Andrews, Issakidis, Sanderson, Corry, & Lapsley, 2004). It is estimated that 60% of depressed individuals are not being treated (Kohn, Saxena, Levav, & Saethnicityno, 2004). Lack of psychological treatment and poor compliance with medications (Wade, 2010); cost of treatment and limited mobility due to illnesses (Klein, Meyer, Austin, & Kyrios, 2011) as well as lack of transportation are factors which favor the internet as a possible medium to deliver interventions to cope with these barriers.

The delay in the identification and management could threaten the lives of people. It is essential to detect these illnesses early, so as to lessen the consequences and the suffering caused by psychiatric morbidity (Wittchen et al., 2011). The earlier studies were mostly conducted in clinical setting and that those done in the community setting was not representative to the population of Selangor. As there were no recent study conducted in the current setting in this aspect, it is essential to fully comprehend and explore the factors associated with depression and anxiety in the community setting and identify individuals with depression and anxiety so as to assist them to get proper treatment.

The present study will determine the prevalence and predictors of depression and anxiety in the community. It will serve as a baseline data for the development of a specific and effective module to reduce frequently occurring mental health disorders in the community of Selangor. Busy and hectic lifestyles put everyone at risk of being stressed, and lack of knowledge and skills to cope with the problem of life, will eventually increase one’s risk in developing depression and anxiety. There is lack of knowledge on mental health among the general population, which eventually affects the help-seeking behavior (Ham, Wright, Vo Van, Doan, & Broerse, 2011). Study also has shown that poor knowledge on mental health suggest the importance to increase the awareness and instill the positive attitude towards mental health (Ganesh, 2011).

A systematic review which evaluate depression literacy among general population and patients found poor knowledge on depression and negative attitudes among the population affects the help seeking behavior and treatment choice (Gabriel & Violato, 2010). In the same review, it is noted that psycho-education may increase the knowledge and change their attitudes towards depression. Therefore, a psycho-education program was aimed at increasing the knowledge on mental health pertaining
to depression and anxiety and empower them with skills to cope with life events with successfully.

1.3 Significance of the study

This study would help to fill the gap of the literature on the prevalence and predictors of depression and anxiety in the current setting. By conducting this study, it would enable us to detect participants with depression and anxiety and provide a better understanding on the predictors of depression and anxiety among adults in Selangor. By determining the predictors of depression and anxiety, it would enable us to help the community to address their problems which hinder them from having good quality of life. Based on the predictors, the web-based psycho-education program that has been developed would benefit the participants by making them aware about their current mental health status by increasing their knowledge about depression and anxiety. Besides that, the program would empower them with the skills to cope with the current life problems which eventually would help them to take in charge of their life and live a quality life.

1.4 General description of the study

This study consists of two phases. Phase one of the study was a cross-sectional study to establish the prevalence and predictors of depression and anxiety among adults in the Selangor community. Phase two of the study was a randomized controlled trial of a web-based psycho-education program for the same cohort of the adult community in Selangor.

1.5 Objectives of the study

1.5.1 Phase One

1.5.1.1 General objective

To determine the prevalence and predictors of depression and anxiety among adults in Selangor, Malaysia.

1.5.1.2 Specific objectives

The specific objectives for phase one of this study were to:

1. Determine the socio-demographic characteristics such as age, gender, ethnicity, marital status, education level, employment status and income of the adults in the Selangor community.
2. Determine the prevalence of depression among adults in the community of Selangor.
3. To determine the predictors of depression among adults in the Selangor community.
4. Determine the prevalence of anxiety among adults in the community of Selangor.
5. To determine the predictors of anxiety among adults in the Selangor community.

1.5.2 Phase Two

1.5.2.1 General objective

To develop, implement and evaluate a web-based psycho education community intervention program for depression, anxiety and mental health literacy for an adult population in Selangor.

1.5.2.2 Specific objectives

The specific objectives for phase two of this study were to:

1. Develop and implement a web-based psycho-education intervention program for depression, anxiety and mental health literacy for an adult population in Selangor.
2. Determine the baseline socio-demographic characteristics such as gender, ethnicity, marital status and education level of participants in the intervention and control group.
3. Determine the outcome measures (scores of depression, anxiety and mental health literacy) of participants in the intervention and control group at baseline.
4. Determine the difference in depression, anxiety and mental health literacy scores at baseline, week 5 and week 12.
5. Determine the difference in depression scores between intervention and control group at baseline, week 5 and week 12.
6. Determine the difference in anxiety scores between intervention and control group at baseline, week 5 and week 12.
7. Determine the difference in mental health literacy scores between intervention and control group at baseline, week 5 and week 12.

1.6 Research Hypotheses

1. Socio-demographic characteristics such as age, gender, ethnicity, marital status, education level, employment status and income; chronic diseases and history of mental health disorders; stressful life events; domestic violence; anxiety; high perceived stress; low self-esteem and religiosity are significant predictors of depression.
2. Socio-demographic characteristics such as age, gender, ethnicity, marital status, education level, employment status and income; chronic diseases and history of mental health disorders; stressful life events; domestic violence; depression; high perceived stress; low self-esteem and religiosity are significant predictors of anxiety.
3. The web-based intervention program on psycho education is effective in reducing depression scores of adults in Selangor.
4. The web-based intervention program on psycho education is effective in reducing anxiety scores of adults in Selangor.
5. The web-based intervention program on psycho education is effective in increasing mental health literacy scores of adults in Selangor.

1.7 Conceptual Framework

Figure 1.1 shows the conceptual framework of this study. The development of depression and anxiety has been known to be multi-factorial in origin. The presence of numerous factors such as presence of chronic diseases, personal and family history of mental health disorders, stressful life events such as financial constraint and unhappy relationship with family, domestic violence, high stress and low self-esteem in individuals contribute to higher likelihood of developing depression and/or anxiety. It is believed that intervention targeting those risk factors can help to reduce depression and anxiety symptoms.

Figure 1.1: A conceptual framework of risk factors of depression and/or anxiety and the psycho-education program.
1.8 Theoretical framework of the psycho-education intervention program

A theory is a set of interrelated concepts, definitions, and propositions that explains or predicts events or situations by specifying relations among variables. Theories and models help explain behaviour, as well as suggest how to develop more effective ways to influence and change behaviour. Various health theories are available, among which it include Health Believe Model (HMB), transtheoretical model, theory of planned behavior, Social Cognitive Theory (SCT) and the Information-Motivation-Behavioral Skills (IMB) model. All of these theories specify determinants of behavior that are potential to be changed and commonly used to develop health-related behavioral interventions. In particular, the IMB model was applied in this study as a theoretical framework for developing the psycho-education program because it consist of constructs that are needed for successful self-management and self-adherence to tackle chronic diseases, such as depression and anxiety. The IMB theory was originally developed by Fisher and Fisher for AIDS risk reduction program (Fisher & Fisher, 1992). The theory consists of three constructs that include information, motivation and behavioral. Information is a prerequisite for enacting a health behavior. Whereas the motivation construct consist of personal motivation that integrates one’s beliefs and attitudes towards health behavior; and social motivation that integrates social support for engaging in the behavior. The last construct which is the behavioral skills integrates the one’s objective skills and perceived self-efficacy for conducting the health behavior. It is noted that both information and motivation affect behavioral skills which will eventually lead to the behavioral change. The information and motivation construct exert direct effects on both behavioral skills and behavior change, whereas behavioral skills have direct effects on behavioral change.

The IMB model has been used for chronic diseases, with focus on risk prevention and self-care behaviors. A systematic review by Chang et al. who reviewed 12 articles showed that the IMB model has the potential to be used as a theoretical framework to develop behavioral interventions (Chang, Choi, Kim, & Song, 2014). It was suggested that disease-specific and behavior-specific information for the information construct; positive attitudes and feelings for the motivational construct; and self-efficacy and objective skills for the behavioral skills construct to change behavior should be emphasized and focused. The IMB model is applicable to patients with various chronic diseases. The web-based psycho-education program consist of four sessions, whereby session 1 consist of information construct whereby information of depression and anxiety was detailed. Whereas session 2 consist of motivation construct and session 3 and 4 consist of behavioral skills to enact the behavioral change.
Figure 1.2 : Theoretical framework of the psycho-education program.
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Siti Fatimah Kader Maideen was born and grew up in Klang. She obtained her Degree in Biomedicine in 2008. After graduation, she was working as a junior lecturer for almost four years in one of the private college in Selangor. Later, she further her studies in University Malaya and obtained her Masters of Medical Science in Public Health in 2010. In September 2011, she enrolled in the PhD program under the Department of Community Health, Faculty of Medicine and Health Sciences in University Putra Malaysia. Currently she is working as a lecturer in a private medical college.
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