VIETNAM NATIONAL UNIVERSITY, HANOI
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PHOEUN BUNNA

ASSESSING THE EFFECTIVENESS OF TEACHERS' MENTAL HEALTH LITERACY TRAINING IN CAMBODIA

DOCTORAL DISSERTATION
IN CHILD AND ADOLESCENT CLINICAL PSYCHOLOGY

HANOI – 2021

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Mentors by:

Dr. Amanda Joan Nguyen,
Research Assistant Professor, Curry School of Education and Human Development, University of Virginia

Dr. Tran Thanh Nam,
Lecturer at the University of Education, National University Hanoi and member of Vietnam Association of Psychology and Education (VAPE)

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Abstract

Objectives: Low mental health literacy (MHL) is a barrier to identification and care for children experiencing mental health problems in low- and middle-income countries. School-based MHL programs may offer an effective and sustainable approach to promote teachers' and students' mental health literacy. The aim of this study was to evaluate the effectiveness of a school-based, teacher-delivered MHL program on teachers' and students' mental health knowledge and attitudes in Cambodia.

Methods: This study used a pre-post, randomized design at one high school in Phnom Penh in which teachers were randomly assigned, and classrooms purposively assigned, to either participate in a MHL curriculum or control condition. The intervention consisted of a 3-day teacher training followed by teacher-delivery of six weekly classroom lessons. Outcomes were assessed before training and after the classroom implementation using the Mental Health Literacy Scale, Beliefs toward Mental Illness scale, and a MHL assessment developed with the curriculum. ANCOVA models were used to test post intervention differences between groups while adjusting for baseline scores.

Results: Complete case analysis included 67 teachers (34 interventions, 33 control) and 275 students (145 interventions, 130 controls). At post-test, teachers in the intervention group had significantly higher knowledge scores (M = 64.6 vs. M = 51.3, $p<.001$), more positive attitudes (M = 3.62 vs. M = 3.16, $p<.001$), and fewer negative beliefs (M = 1.88 vs. M = 2.57, $p<.001$) relative to controls. Significant differences in student knowledge (M = 56.9 vs. M = 50.6, $p<.001$) and attitude scores (M = 4.60 vs. M = 3.98, $p<.001$) also favored the intervention group, although effect sizes were smaller.

Conclusions: Findings from this pilot RCT support the potential benefits of school-based MHL training in Cambodia, where there is substantial stigma, prejudice and discrimination toward mental illness. However, small to moderate effect sizes suggest a need for further refinement and testing of the curriculum to optimize impact, including further consideration of implementation strategies and supports.

List of Abbreviations

ADHD	: Attention Deficit Hyperarosual Disorder
AGMv	: African Guide Malawi version
ANCOVA	: Analysis of covariance
ASD	: Austism Spectrum Disorder
BMI	: Beliefs Toward Mental Illness
CBT	: Cognitive Behaviour Therapy
CD	: Conduct Disorder
DALYs	: Disablity-Adjusted Life Years
GLM	: General Liner Model
HICs	: High Income Countries
IOM	: Institute of Medicne
IQ	: Intelligence Quotient
LMICs	: Low-and-Middle Income Countries
MEB	: Mental Emotional Behavioral
MH	: Mental Health
MHKQ	: Mental Health Knowledge Quiz
MHL	: Mental Health literacy
MHLS	: Mental health Literacy Scale
MTSS	: Multi-Tier System of Supports
OCD	: Obsessive Compulsive Disorder
ODD	: Oppositional Defiant Disorder
RCT	: Randomized Control Trial
RECAP	: Reaching Educators Children and Parents
SPSS	: Statistical Package for the Social Sciences
T1	: Time One
T2	: Time Two
WHO	: World Health Organization
WHO-EMRO	: World Health Organization Eastern Miterranean Reginal Office

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INTRODUCTION

1. Context and Background

1.1. Global Burden of Child Mental Health Problems

Child mental health problems create great burden throughout the world for individuals, their families and public health services. According to the World Health Organization (WHO), up to 20% of children suffer from mental health disorders worldwide, accounting for 15-30% of Disability-Adjusted Life Years (DALYs) lost during the first three decades of life (Kieling et al., 2011; Vigo et al., 2016). This burden is the most hard-hitting in low-and-middle income countries (LMICs), where there is often a lack of mental health infrastructure, resulting in massive treatment gaps (Morris et al., 2012). In the poorest of these countries, it is estimated that up to 85% people with severe mental illness receive no treatment for their problems, and the treatment gaps are often the highest for children (Demyttenaere et al., 2004; Morris et al., 2011; Paula et al., 2014; Vigo et al., 2016).

Larger treatment gaps in LMICs may occur as a consequence of the limited resources available in these settings. For example, the median number of psychologists and psychiatrists in high income countries is 180 times greater than that in low-income countries (Morris et al., 2012). The WHO (2014) highlighted the limited number of professional mental health careers in LMICs, suggesting a prevalence of approximately 0.5 psychiatrists per 100,000 people in these countries compared to the proportion of 6.6 psychiatrists per 100,000 people in HICs. Similarly, there are over 30 nurses working in mental health contexts per 100,000 people in high-income country settings compared to 0.4 per 100,000 in low-income countries, 2.5 in lower-middle-income countries and 7.1 in upper-middle income countries. More

generally, the shortage of trained mental health professionals, as well as uncertain financial resources, are considered as barriers to develop and strengthen mental health systems in these LMICs (Kessler et al., 2009; Malhotra & Padhy, 2015; Morris et al., 2012).

Beyond the resource and policy challenges described above, there are also other, more social reasons that mental health disorders in LMICs remain unrecognized and untreated, among both adult and child populations. Key among these are related to low mental health literacy, including a lack of knowledge about mental health and mental disorders, and the reluctance of individuals to seek support given the stigma associated with mental disorders (D. Chisholm et al., 2007; Hossain, 2006; Saraceno et al., 2007; WHO, 2005a). People with mental illness describe stigma as resulting in them being concerned about seeking professional help, putting off intended treatment, and failing to disclose their problems to relatives and peers (Collins et al., 2006; Henderson et al., 2013). Both internalized stigma (i.e., self-stigma or the shame one feels) and external stigma (i.e., enacted stigma or the experiencing of being stigmatized by others) may result from culturally and religiously informed beliefs about mental illness and the mentally ill, and can contribute to poor mental health and barriers to help seeking for children (Gray, 2002). Research has shown stigma as a risk factor leading to negative mental health outcomes and devastating consequences for mentally ill patients across populations (Ando, Yamaguchi, Aoki, & Thornicroft, 2013; Angela M. Parcesepe & Cabassa, 2014; Seeman, Tang, Brown, & Ing, 2016; Shrivastava, Bureau, & Johnston, 2012; Yang et al., 2013). Studies conducted in LMICs have also reported stigma reduced disclosure and help-seeking and increased harmful coping strategies; in these settings, even medical professionals may have limited mental health knowledge and negative attitudes toward mental illness (Mascayano et al., 2015).

1.2. Mental Health Situation in Cambodia

In Cambodia, the burden of mental health disorders remains a pressing issue of concern and there is little in place to deal with this burden. It is estimated up to 40% of Cambodians suffer from mental health problems and those identified with problems receive little or no assistance due to the lack of treatment services (Jong, 2002; Sun, Bun, Pich, & Gschaider-Sassahun, 2019; TPO Cambodia, 2015). In a previous study, only 100 mental health professionals (i.e., psychiatrists and psychiatric nurses) were trained to provide mental health services and only 20% of them remained working in mental health services to serve a population of over 15 million people ("ASEAN Mental Health System," 2016; McLaughlin & Wickeri, 2012). The low numbers of trained mental health professionals, issues such as limited mental health knowledge within communities and uncertain budget allocation for mental health priorities significantly impact the identification and management of mental health problems among the Cambodian population, particularly the care for children (Deva, D'Souza, & Sundram, 2009; McLaughlin & Wickeri, 2012; Olofsson, Sebastian, & Jegannathan, 2018). There are some mental health services provided by NGOs, but their services are often short-term programs dependent on funding from overseas donors and their services are limited to targeting specific mental health problems prioritized by their funders.

Mental health services for children are even more inadequate in both private and public institutions. Although dated now, the 2005 WHO mapping exercise failed to identify any child mental health specialists (WHO, 2005), and there is little indication that this has changed in the intervening years. Though there is no nationally representative epidemiologic study of Cambodian child mental health, several studies point to the potential magnitude of mental morbidity among young people in Cambodia and

provide evidence of the imperative to respond to this developing need (Bhoomikumar & Gunnar, 2011; Vostanis, 2006).

Although we know no previous studies of mental health literacy in Cambodia, it is generally acknowledged to be low. Anecdotally, low mental health literacy and an over-reliance on medication have been identified as challenges to reducing the burden of mental disorders in Cambodia ("TPO, 2015 "). Khmer cultural explanations for mental illness originate from Buddhist-Hindu beliefs, beliefs in spirits, concepts of luck and astrology, and a stronger emphasis on the connection between physical and mental health; often help-seeking through the formal health system would occur only if traditional approaches are unsuccessful in addressing the problem (Schunert et al., 2012). Poor mental health literacy creates more stigmatizing attitudes, beliefs and discrimination toward mental illness. People fail to understand that many mental disorders are highly treatable. Many highly publicized cases describe people with mental illness being left alone, caged or chained up, or in other ways neglected and abused by both their families and communities. Failure to detect early sign of problems has also contributed to delayed treatment seeking.

2. Statement of the Problem

Many adverse mental health outcomes could be reduced if prevention, early identification, and intervention efforts were initiated in a timely and effectively manner (Hawton et al., 2012). Particularly in LMICs, where there is a lack of treatment resources, the potential positive impact of prevention and early intervention for improving outcomes is substantial. More research is therefore urgently needed to promote mental health in children and adolescents, detect mental health problems early, and develop effective interventions for children experiencing mental health issues (Levav & Rutz,

2002). This focus on the promotion of positive mental health and the early identification of mental health disorders in LMICs could result in timely and appropriate diagnosis and effective treatment of young people with mental illness, prevent further serious mental disorders, and improve the lifelong outcomes for these young people (Chisholm et al., 2007; Kutcher, Hampton, & Wilson, 2010; Kutcher, Wei, Mcluckie, & Bullock, 2013; Lund et al., 2012).

Particularly in LMICs such as Cambodia, where there is such a shortage of mental health treatment options, the potential impact of a comprehensive prevention, early intervention, and treatment system such as that promoted by the U.S. Institute of Medicine (IOM; 2009) is substantial. Following a public health approach, comprehensive programming should be delivered at multiple tiers of risk, with a range of universal, selective, and indicated interventions targeting entire populations, at-risk subgroups, and those showing signs of disorder (Gordon, 1983). These interventions may be focused on creating more protective environments for children across multiple contexts, including family, school and community.

Schools are a critical setting for mental health promotion, prevention and early intervention, as they serve a majority of all children in a community and are often less stigmatized than services offered through the health system (Fazel, Patel, et al., 2014; O'Reilly et al., 2018; WHO, 1994). School programs, such as comprehensive early education programs for preschool, classroom management interventions to promote good behavior, and targeted intervention for specific problems (i.e. prevention of anxiety, prevention of depression, prevention of posttraumatic stress disorder, etc.) have produced positive impacts in a cost-effective manner across settings and populations (Fazel, Hoagwood, et al., 2014).

Within schools, teachers have been leveraged as a pathway solution to facilitate early mental health education, identification, and intervention in a range of other LMICs, such as Vietnam (Dang et al., 2017; Kutcher et al., 2015, 2017; Yamaguchi et al., 2019). The close and trusting relationship between teacher and student potentially allows them to be both a great resource for the individual student as well as an important link connecting students they identify as distressed with specialist support services, allowing timely and effective referrals and treatment (Reinke, Stormont, Herman, Puri, & Goel, 2011; Langeveld et al., 2011). This link with the teacher, who is recognized and respected by the community, potentially also promotes the message of the importance of mental wellbeing and the acceptance of mental illness as a health problem without associated stigma. This existing relationship between teachers and students has therefore been identified as a potential avenue for bringing mental health services to adolescents in communities where there are limited existing mental health resources (Dang et al. 2017; Greenwood, 2008; Miller-Lewis et al., 2014).

Previous research has found that increasing teachers' mental health literacy to support students with mental health problems was strongly correlated with teacher knowledge, beliefs, and ability to identify problems as well as support and refer students with mental disorders for professional help, with the potential for positive long-term impact on child wellbeing (Jorm, Kitchener, Sawyer, Scales, & Cvetkovski, 2010; Kirchner, Yoder, Kramer, Lindsey, & Thrush, 2000; Koller & Bertel, 2006; Wells, Barlow, & Stewart-brown, 2003). Following a prevention framework, a school-wide mental health literacy program, aimed at reducing mental health stigma and improving student and teacher knowledge about mental health, would be considered a universal prevention intervention. It is theorized to decrease stigma, build resilience, create supportive environments, and assist in early

identification and early intervention for students in need of higher level supports (Riebschleger et al., 2017). While this type of program was not designed to be a stand-alone program and should instead be fit into a larger system of supports, building mental health literacy among youth and the adults who regularly interact with them is a necessary and critical component, complementary to making treatments more available, to reduce stigma and promote student help-seeking, identification, and referral. In LMIC, where often the focus of research has been on individual mental health treatments, more research is needed to guide the development and evaluation of these comprehensive prevention frameworks.

Within schools in Cambodia, although poorly documented, both student and teacher mental health literacy is thought to be very low. Additionally, there is a lack of research in the development and testing of school-based child mental health interventions. As such, in a setting with substantial child mental health treatment gaps and a lack of evidence-based services in schools, there is a critical need for research to develop and test preventive interventions to improve mental health supports for youth.

3. Objectives of the Study

The objective of this study was to evaluate an evidence-based mental health literacy (MHL) intervention for students and teachers. As a first aim, this study sought to characterize the baseline MHL of teachers and students, overall and as a function of teacher sex, education, and experience of teaching and as a function of student age, sex, and grade. Second aim, this study sought to evaluate the effectiveness a mental health literacy training program in which teachers received initial training and then taught a curriculum to students. Impacts on teacher and student mental health knowledge and

attitudes, as well as potential moderators of intervention impact, were assessed.

4. Research Questions and Hypotheses

Research Questions

In this study, we aim to answer seven questions as identified as below:

1. What are the baseline measures of MH knowledge, attitudes and beliefs across secondary and high school teachers? Are these baseline measures influenced by gender, educational background and teacher experience?
2. Does Mental Health Literacy (MHL) Training increase teachers' knowledge, beliefs, and attitudes toward mental illness as measured post training?
3. Are changes in teachers' MH knowledge, beliefs and attitudes influenced by the variables of gender, education and experience of teaching?
4. What are the baseline measures of students' MH knowledge and attitudes across students in High school (grade 7, 8, 10, and 11)? Are these baseline measures influenced by age, sex, and grade?
5. Does a mental health literacy program, taught by teachers an hour per week for six weeks, lead to an increase in students' MH knowledge and attitudes?
6. Are changes in students' MH knowledge and attitudes influenced by age, gender, and education (grade)?
7. Is the Guide-VN culturally feasible and acceptable for the Cambodian classroom context?

Hypotheses

1. Hypothesis 1: Teachers will have low baseline MH knowledge, and negative attitudes and beliefs about mental illness; these will vary by gender, level of education, and teaching experience.
2. Hypothesis 2: Mental health literacy training will increase teachers' MH knowledge and improve attitudes toward mental illness relative to a control group.
3. Hypothesis 3: Demographic characteristics such as gender, education and experience of teaching will moderate the impact of the MHL training on teacher outcomes.
4. Hypothesis 4: Students will have low baseline mental health knowledge, more negative attitudes, and their knowledge; attitudes will vary by age, sex, and grade.
5. Hypothesis 5: Mental health literacy training for students will increase students' MH knowledge and improve attitudes toward mental illness relative to a control group.
6. Hypothesis 6: Demographic characteristics such as age, gender and education (grade) will moderate the impact of the MHL training on teacher outcomes.
7. Hypothesis 7: The Guide-VN MHL intervention will be feasible for Cambodian teachers to implement and acceptable within the Cambodian school context.

5. Significance of the Study

As the first school-based MHL study in Cambodia, this study provided primary data on the knowledge, attitudes and beliefs (i.e., mental health literacy) amongst secondary and high school teachers and students. This project also involved evaluation of a locally adapted MHL intervention

for use in Cambodian high schools. The pilot randomized controlled trial provides preliminary evidence for its feasibility, acceptability, and effectiveness, as well as suggestions for further adaptation to improve the intervention's impact. It is anticipated that this project will serve as a foundation for a larger follow-up implementation-effectiveness evaluation of the adapted curriculum in Cambodia.

CHAPTER 1

LITERATURE REVIEW

1. Mental Health Literacy in Low-Middle Income Countries

While inadequate knowledge and negative attitudes about mental health and mental illness are a challenge worldwide, this study takes a specific focus on mental health in LMIC. This is because of widescale recognition that knowledge about the nature and etiology of mental disorders, and where to seek help for disorders, is particularly low in many LMIC (Ganasen et al., 2008). Explanatory models that do not align with available mental health services can heavily impact both how and where people with mental illness seek help, and how they are perceived and treated by their communities. In other words, even when mental health systems and services are available, they may not be well utilized if the public does not understand when and how to access those Services. This is critical, as not only are there fewer mental health services available in LMIC, but poverty, conflict, and many other social drivers of mental illness are also more prevalent in these settings (Lund et al., 2010; Murthy & Lakshminarayana, 2006), contributing to a potentially higher burden of poor mental health. Further, it is important to study MHL in LMIC rather than simply transporting models from elsewhere without further research. This is because how people and communities explain and make meaning of mental illness is inherently influenced by culture, and efforts to increase mental health knowledge must understand current cultural explanations and service structures in order to consider how best to integrate new models and systems of care (Atilola, 2015).

Indeed, calls to increase public mental health literacy are rampant in the literature on expanding mental health care in LMIC. In Pakistan, for example, a systematic review from different sources identified a dearth of knowledge about mental disorders and their treatment, and called for enhancing mental health literacy to increase society's acceptance and use of evidence-based mental health care (Begum et al., 2020; Munawar et al., 2020). Similar calls have come from Afghanistan, a country in which children today have never known peace and where people are at high risk to develop mental health problems such as PTSD, Anxiety, and Depression with limited access to care (Aroche, 2017; Slewa-Younan et al., 2017; WHO, 2006). Low MHL has been identified as a challenge for child mental health in Bangladesh, where up to a quarter of children face mental health problems and people with low education, low socio-economic status, and living in remote areas have particularly low access to care (Hossain et al., 2014; Uddin et al., 2019; WHO, 2019). Even in China, a country with rapid economic development compared to other countries, mental health literacy is low among the population. This example highlights the role not just of access but of motivation and source of help-seeking, as mixed perspectives on cultural diversity and neurobiological attributions to mental illness led to greater use of traditional or herbal medicine, with low motivation to seek professional help (Huang et al., 2019; Wong et al., 2017). In Cambodia, a country still grappling with intergenerational impacts of war and poverty, mental health problems are highly prevalent while stigma, low mental health literacy and cultural diversity are regarded as major factor contributing to lack of mental health care (Jegannathan et al., 2015; Jong, 2002; Parry & Wilkinson, 2020).

In the following sections, the construct of mental health literacy as used in this study is further defined in terms of a conceptual framework. The

literature on each component of this conceptual framework is then examined separately, with discussion of findings from both high-income countries (where the majority of work has been carried out), and from LMIC. Specifically, this also includes a section discussing cultural and religious influences on knowledge and attitudes toward mental illness.

2. Conceptual Framework of Mental Health Literacy

Mental Health Literacy (MHL) is a construct that has arisen from health literacy and it is generally described in terms of several major components that could be targets for intervention; specifically, this includes the recognition of mental health issues, knowledge about mental health, and attitudes toward mental health conditions (Jorm, 1997 & 2000; O'Connor et al., 2014). Jorm (1997) conceptualized MHL as "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm, Korten, & Jacomb, 1997). Later, MHL was refined as (a) the ability to identify mental disorders or various forms of psychological distress; (b) knowledge and beliefs regarding risk factors and determinants of mental health problems or disorders; (c) knowledge and beliefs about self-help interventions, knowledge and beliefs about available professional help; (d) attitudes which aid in recognition of mental health disorders and appropriate help-seeking behavior; and (e) knowledge on how to access mental health information (Jorm, 2012). More recently, a conceptualization of MHL put forward by Kutcher and colleagues includes understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma relating to mental disorders; and enhancing help-seeking efficacy, knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities (Kutcher, Bagnell, & Wei 2015).

Hence, the concept of mental health literacy identifies many critical elements that are important in recognition and intervention for mental health issues (Langeveld et al., 2011; Wei & Kutcher, 2014). Overall, MHL has been widely recognized as the groundwork for the promotion of mental health, particularly in school settings (Jorm, 2012; Jorm, Korten, Jacomb et al., 1997; Kutcher, Bagnell, & Wei, 2015; Kutcher , Wei, & Coniglio, 2016; Kutcher, Wei, & Weist, 2015; Reavley & Jorm, 2011; McLuckie, Kutcher, Wei, & Weaver, 2014).

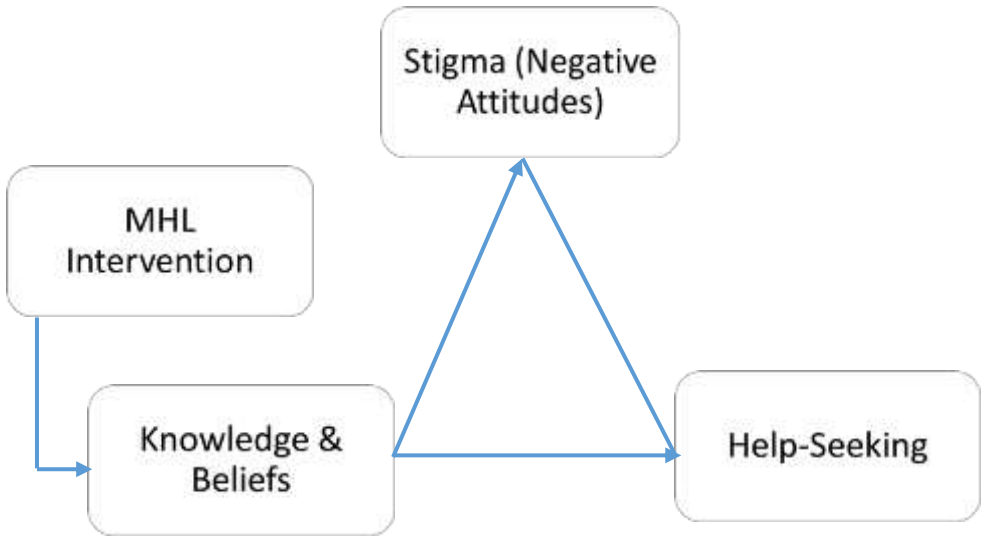
As is described further in the following sections, MHL

MHL training is about improving knowledge as a precursor for change. Conceptually, knowledge about mental health is the foundation for attitudes and beliefs, both directly - by being able to recognize when help is needed and have knowledge of how to seek help; and indirectly – by decreasing the negative attitudes and beliefs toward mental health that contribute to mental health stigma and serve as powerful barriers to help-seeking. Therefore, in the current intervention it is hypothesized that increasing mental health knowledge across a number of domains (e.g., knowledge about signs and symptoms of various mental disorders, when and where to seek help for disorders, impacts of mental illness on functioning and quality of life) will improve participants' attitudes toward mental health and mental illness and self-efficacy to seek help. It is further hypothesized that improvements in these proximal, measured outcomes will in turn lead to improvements in actual behaviors (a distal, unmeasured outcome), including recognition and help-seeking for mental health problems in oneself or others, as well as more supportive interactions with people experiencing mental illness.

For this paper, we considered the definition of MHL as provided by Kutcher et al. (2015) to reflect the key elements of knowledge, attitudes, and

beliefs about mental health. These elements of low MHL are closely tied to stigma, described by SAMHSA (2004) as "a cluster of negative attitudes and beliefs that motivate the general public to fear, reject, avoid, and discriminate against people with mental illness." Linking stigma to help-seeking, SAMHSA (2004) further describes how "fear of stigma and the resulting discrimination discourages individuals and their families from getting the help they need". As such, help-seeking self-efficacy (i.e., knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capacities) was also included in this current study conceptual framework as resulting from both increased knowledge and decreased negative attitudes about mental health, although actual help-seeking behaviors were not able to be measured.

Figure 1. Conceptual Framework



The table1 below outlined how the different measures were mapped onto the conceptual framework (knowledge, attitudes and beliefs.

Table 1. The conceptual framework and measures relationship		
Knowledge	**Attitudes**	**Beliefs**
❖ **Mental Health Knowledge Quiz (MHKQ)** ❖ **Mental Health Literacy Scale (MHLS)** ***sub-scale1:*** *Ability to recognize disorders* ❖ **Students' Mental health knowledge**	❖ **Mental Health Literacy Scale (MHLS)** ***sub-scale2:*** *Mental health help-seeking/self-efficacy* ***sub-scale3:*** *Stigma/negative attitudes toward mental illness* ***sub-scale4:*** *Willingness to interact with people with mental illness* ❖ **Students' Attitudes toward mental illness**	❖ **Beliefs Toward Mental Illness (BMI)** ***sub-scale1:*** *Dangerousness* ***sub-scale2:*** *Poor interpersonal* ***sub-scale3:*** *Social skills, Incurability*

2.1. Mental Health Knowledge

Mental health knowledge refers to awareness of and understanding of mental health conditions. MH knowledge is one component of MHL. As defined by Kutcher (2015), MH knowledge includes understanding how to

maintain positive mental health, understanding mental problems, and treatments (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capacities). So, MH knowledge, for example, refers to knowledge about the etiology of mental disorders (e.g., not an evil eye), knowledge about signs and symptoms, knowledge of whether mental illness is treatable, knowledge of whether mental illness is dangerous or contributes to poor social / interpersonal skills, knowledge about when and where to seek help, etc. Therefore, MH knowledge is an important element in mental health promotion and intervention, with particular utility in early identification and treatment efforts in everyday settings such as schools (Jorm, 2012; Kutcher, Wei, & Coniglio, 2016).

2.1.1. General Population Recognition of Mental Health Problems

Mental health disorders are often unrecognized and untreated for long periods, leading to increased difficulties, relapses, risk of death, reduced remission rates and deteriorating overall outcomes. A systematic review of 37 studies revealed substantial treatment gaps for all disorders, with marked differences across disorders: a lower treatment gap for severe/psychotic disorders such as schizophrenia (32.2%), but a much higher gap for many more common disorders such as depression (56.3%), dysthymia (56.0%), and anxiety (57.5%), and the highest treatment gaps for substance-related disorders such as alcohol abuse and dependence (78.1%) (Kohn et al., 2004). Drancourt and colleagues (2013) reported the average length of time left untreated was about eight years, and 13 to 15 years for moods disorders (anxiety, depression, and bipolar) (Drancourt et al., 2013). In one Australian study, among 271 individuals diagnosed with anxiety and mood disorders, the average time to recognize the problems was nearly 7 years, and an additional

1.3 years between recognition of the problems and actually seeking help (Thompson et al., 2008). A population study (N=1312), using case vignettes to measure mental health literacy regarding depression, dementia, and schizophrenia revealed about 63% of the sample could identify symptoms of dementia, 55.2% could identify depression, and only 11.5% were able to identify symptoms of schizophrenia from the case vignettes (Barney et al., 2006).

Disorder recognition also varies by context and type. For example, Americans are more likely to correctly identify mental health problems overall, but still show marked differences in ability across mental health conditions. Amongst 1104 American adolescents, 40% could correctly identify depression, but only 1% who could correctly identify the social anxiety disorder as social phobia or social anxiety (Coles et al., 2016). Amongst a sample of 1393 American adults, about 60% could correctly recognize depression and about 42% could identify ADHD (attention deficit hyperactivity disorder) (Bernice A. Pescosolido et al., 2008). Canada also has higher rates of recognizing mental health problems. Amongst 1004 Canadian adults, nearly 70% could correctly identify mental disorders, mostly for depression (80%), schizophrenia (50%-60%), and anxiety (50%) (Marcus & Westra, 2012). British also were more likely to correctly identify mental health problems. In a sample of 370 British young people aged 17-22 years, highest ability to identify mental health problems was for addiction (65.1%-87.4%), followed by anorexia (55.8%-81.3%), bulimia (45.5%-77.2%), OCD (41.9%-70.7%), ADHD (42.4%-70.6%), depression (33.3%-74.4%), bipolar (14.2%-46.2%), schizophrenia (37.3%-48.8%) and social phobia (10.5%-30.2%) (Furnham et al., 2014). In contrast, in a survey of 650 Saudi adults, only about 12.5% could recognize mental problems and nearly 60% had negative perception about mental illness (Abolfotouh et al., 2019). Amongst a

sample of 4938 youth age 14-24 in Portugal, only a quarter could recognize depression (27.2%) in a vignette and only 5.5% identified this as a mental disorder, whereas others categorized the problem as stress (47.3%), emotional problems (40.8%), and nervous breakdown (33.8%) (Loureiro et al., 2013). Though the recognition for schizophrenia was better, it was still correctly identified by less than half (42.2%), and identification of psychosis was even lower (22.2%) (Loureiro et al., 2014). In Sweden, amongst a sample of 368 adults aged 20-64, 66% failed to recognize depression, instead commonly regarding this disorder as stress and a day-to-day problem (Dahlberg et al., 2008). Amongst 426 Sweden adolescents, 42.7% and 34.7% could identify depression and schizophrenia (Melas et al., 2013).

In South East Asian populations, one qualitative study using a series of focus group discussions with Hmong, Cambodian, and Thai immigrants residing in the US revealed a lack of recognition and understanding depression and one of major barriers to recognizing depression due to no definition for this phenomenon (H. Lee et al., 2010). A non-systematic review of published literature in Singapore identified a gap of mental health knowledge among Singaporeans. This study revealed many lay people were not able to recognize mental disorders and held negative attitudes toward mental illness, obstructing people from seeking professional treatment (Tonsing, 2018). A cross –cultural study of 440 individuals from Britain, Hong Kong and Malaysia showed the British were best in identifying correct psychiatric diagnosis to vignettes of OCD, schizophrenia, depression, ADHD, child with depression, and bipolar disorder, followed by Hong Kong citizens and Malaysians (Loo et al., 2012). Amongst 916 Indian adolescents, mental health literacy was very low; only 29.0% could correctly identify depression and only 1.3% could clearly recognized schizophrenia (Ogorchukwu et al., 2016). In Philippines, amongst 797 first year Filipino college students, 55.2%

could identify depression in a given vignette (Ines, 2019). A cross-sectional study involving 285 Nigerian adolescents showed that only 4.8% could correctly identify depression in a vignette (Deborah, Anyachebelu, Anosike, & Anizoba, 2018). In Nigeria adolescent, using vignette of schizophrenia, only 25.6% of respondents identified the vignette as describing a mental disorder and none accurately identified schizophrenia, instead labelling it as an emotional problem, depression and mania respectively (Adeosun et al., 2015). In Vietnam, a cross sectional study that involved 350 people showed limited understanding about mental disorder, as more than 80% failed to recognize depression disorder while a depression vignette was commonly identified as stress (Thai & Nguyen, 2018).

In Cambodia, mental health literacy is very low across the population (Jegannathan et al., 2015; Sonis et al., 2009). One study assessing help-seeking behavior among 104 Cambodians with schizophrenia who started their first treatment at a referral hospital found nearly 80% of the patients did not initially seek professional help due to inability to recognize their problems as mental health-related, instead mostly seeking treatment through traditional and religious medicine (Coton et al., 2008). A more recent study assessing the duration of untreated mental illness among sample of 109 patients diagnosed with psychiatric problems found that the average duration of untreated mental illness was 34.8 ± 42.4 months, ranging from 0 to 240 months (Nishio et al., 2018).

In summary, ability to recognize mental health problems varies widely across settings and is generally lower in LMIC. Moreover, recognition varies across types of disorder, with common mental illnesses such as depression oftentimes being mistaken as daily stress, while even severe mental illnesses such as schizophrenia may be misidentified or perceived as a spiritual or other problem. All of these misperceptions may result in lower or inappropriate

help-seeking. These examples, highlighting the challenge and complexity of addressing mental health problems, particularly among children and adolescents, and the need to first improve basic mental health knowledge to improve attitudes toward mental health and inform effective help-seeking.

2.1.2. Teachers' Recognition of Mental Health Problems

Teachers also have challenges in identifying children with mental health problems. In an Australian study by Headley & Campbell (2011), teachers demonstrated inadequate knowledge to distinguish the severity of the mental disorder; they were more able to recognize severe anxiety disorders but not moderate anxiety symptoms. Among 134 elementary school teachers in rural south India, less than 50% of participants could recognize mental disorders (Mendonsa, R. D. Shihabuddeen, 2013). A study in Nigeria also indicated poor mental health literacy among teachers. This study was designed to assess the teachers' recognition of mental health problems and help-seeking behavior through vignettes. Of 120 participants from five secondary schools in southeast Nigeria, only 16% could correctly identify mental disorders and less than 14% suggested professional help from psychiatrists or psychologists (Deborah Oyine Aluh et al., 2018). A qualitative study with African teachers in Limpopo, South Africa showed teachers lacked knowledge in identifying the warning signs of suicidal behavior among students, creating a barrier to supporting students who are in crisis (Shilubane et al., 2015). In Vietnam, a study of 353 Vietnamese teachers highlighted substantial stigma, misperception, prejudice, and discrimination around mental illness; for example, 39% indicated they believed people with mental illness are dangerous, and 35% indicated that seeing a mental health professional means you are not strong enough to manage your own difficulties (Dang, Weiss, Lam, & Ho, 2018).

In summary, these studies demonstrate that low MHL is a current barrier to identification of student mental health supports. Teachers have limited knowledge of mental health, unable to recognize students with mental health problems, and lacking confidence and competence to provide support to children in need. Low mental health literacy among teachers can also contribute to a more negative school environment for students; instead of identifying and providing proper support to children, they may turn to blame and judge students' problems in the wrong manner. It should be noted that this research is limited, particularly in the use of vignettes primarily related to depression and schizophrenia rather than including other common mental health problems as well as locally relevant syndromes. They failed to represent the entire mental health population.

2.1.3. Students' Recognition of Mental Health Problems

Numerous studies have shown students lack mental health literacy and hold negative beliefs and attitudes toward mental disorders. Again, most of this research has been conducted in Western or high-income countries where knowledge and resources for mental health are generally higher. In Australia, a population-based health survey conducted among 1678 students in 2013 showed that only 16.4% participants had adequate mental health literacy in terms of identification of depression and help-seeking intentions. Among this population, 23.4% correctly identified the vignette as depression and 14.8% were classified to have more moderate to severe depression. This study revealed that majority of participants who had better knowledge in recognizing depression also had higher intention to seek help (Lam, 2014). In Japan, a survey conducted with high school students showed less than 20% of respondents rated professional help seeking to be helpful for mental health problems; instead viewing, listening, talking to family, and spending time

together as more helpful; this perception is an obstacle for treatment (Yoshioka et al., 2015).

In countries with less formal infrastructure for mental health care, the situation is even worse. In Nigeria, for example, a cross-sectional vignette-based study with 156 students showed only 25.6% of participants recognized the vignette as describing a mental disorder and none accurately identified schizophrenia; additionally, with different perspectives and beliefs about the cause of mental illness, less than quarter (23.7%) of participants recommended mental health services as the appropriate place to seek help (Adeosun et al., 2015). Results were even worse in a separate study using depression vignettes among 285 Nigerian secondary students: less than 5% of the participants could correctly identify and label the vignette as depression and only 1.5% recommended help from a psychiatrist or psychologist, instead referring the depressed person to a counsellor, friends, family, teacher, pastor, or God (Deborah O. Aluh et al., 2018). This represents a huge gap of understanding mental health and the issues around mental health utilization with this population.

In India, a study conducted in 2016 among 354 school-going adolescents showed limited understanding of depression as having a biological basis; a majority of respondents felt depression was due to external factors or poor coping skills, whereas only 14.4% indicated a biological or brain-based cause of depression (Sharma et al., 2017). The finding from Southern India also showed mental health literacy among Indian adolescents was very low. In another study of 916 Indian adolescents aged 15-19 that used vignettes of depression and schizophrenia, less than a third (29.0%) of this population could clearly recognize depression and almost none recognized schizophrenia (1.3%); again, related to these vignettes' adolescents preferred

informal source of help including family members rather than seeking professional help (Ogorchukwu et al., 2016).

In Uganda, a study using 24 focus group discussions with 78 students in secondary schools to explore students' perception and understanding of mental illness illustrated that participant lacked attention to common mental disorders, believed that people with mental illness were dangerous, and tended to avoid interacting with people with mental illness (Okello et al., 2014). In Vietnam, a cross sectional study that involved 350 students using a depression vignette to assess knowledge, beliefs and attitudes showed that only 32% could correctly recognize depression; instead, depression was commonly identified as stress (Thai & Nguyen, 2018). The authors cautioned that this limited knowledge of mental health could also lead to avoiding help-seeking behavior as well as limited understanding of the proper treatment of depression.

The literature described above provides an overview of mental health literacy among students in diverse cultural and societal contexts. Findings indicate that students worldwide have limited understanding of mental health, which leads to poor identification of mental health problems, misunderstandings about the nature and causes of mental illness, negative attitudes and discrimination toward people with mental illness, and a preference for informal help-seeking through friends or family rather than formal help-seeking from professionals.

2.2. Attitudes and Beliefs Toward Mental Illness

One of the major factors contributing to poor mental health and barriers to help seeking among children and adolescents is the stigma associated with mental illness. Stigma as defined by SAMHSA (2004) refers to negative beliefs and attitudes that motivate the general public to fear, reject,

avoid and discriminate against people with mental illness; this creates an environment that discourages individuals and their families from getting help they need (as cited in Kutcher, 2016. p 51). Corrigan & Watson (2002), highlight three main domains of stigma associated with mental illness includes stereotypes (negative beliefs), about mental illness, prejudice (cognitive and affective response) toward people with mental illness and discrimination (negative/hostile behavior) (Corrigan & Watson, 2006). Stigma can manifest as internalized stigma (i.e., self-stigma), enacted or external stigma from the general population. Research has shown stigma as a risk factor leading to negative mental health outcomes and devastating consequences for mentally ill patients across populations (Ando, Yamaguchi, Aoki, & Thornicroft, 2013; Angela M. Parcesepe & Cabassa, 2014; Seeman, Tang, Brown, & Ing, 2016; Shrivastava, Bureau, & Johnston, 2012; Yang et al., 2013). In the sections below, the concept of stigma is further explored as it relates to culture and religion, the nature of various mental disorders, and ultimately, help-seeking behavior.

2.2.1. Stigma Relates to Cultures and Religions Toward Mental Illness

Cultures and religious teaching frequently influence beliefs about the causes of mental illness, and shape attitudes toward the mentally ill. These cultural and/or religious beliefs in turn influence an individual's readiness to both seek and comply with treatment (Choudhry et al., 2016). A lack of culturally appropriate intervention models, and community lack of awareness or acknowledgement of mental issues, may create strong barriers to care (Collins et al., 2006). For example, in a study using case vignette among Indian adolescents (N=354), most adolescents reported that depression was due to the person's weakness and god punishing past sins, and reported not seeking help because of shame about asking for help (Sharma et al., 2017).

Zorba (2015) also compared attitudes to schizophrenia between Greek and Turkish Cypriot communities (n=100) living in Cyprus. Results found Turkish Cypriots reported higher levels of negative attitudes whereas the Greek were significantly different in anger, pity, coercion, help, segregation, fear and avoidance (Zorba, 2015). And Dessoki and Hifnawy, (2009) demonstrated significant differences in stigma by socioeconomic background; specifically, the study found more stigmatizing attitudes toward psychiatric illness among females. The author of this study concluded the culture and socioeconomic differences associated to beliefs about mental illness and highly needed for public education about mental illness in Egypt.

Stigmatizing beliefs that arise from cultural and religion may relate to explanatory models of mental illness, its origins, and appropriate treatment. In Saudi Arabia, a cross-sectional study with 531 undergraduate students showed that over half of participants believed evil eye, magic, demonic possession, and envy are the cause of mental illness. About 30% of participants believed that people with mental illness were dangerous, 56.9% said they would not marry a mental ill person (24.3% participants said people with mental problems should not get married at all), and 40.7% of participants reported they would not tell anyone if they were experiencing a mental problem (Mahfouz et al., 2016). In a cross-sectional study in India by Gailha et al. (2014), most participants (74%) perceived sharing mental problems as not important and believed mental illness was caused by evil spirits, black magic or sins in one's past life. They could not identify mental illness and only 6% were able to recognize five common symptoms. Sixty percent did not perceive seeing or hearing things that were not there as signs of mental illness. Traditional healing was believed to "cure" mental illness, with 74% saying that they would prefer going to go to a traditional/faith healer than to a psychiatrist (Gailha et al., 2014). Hirai & Clum, (2000) found people of Asian

heritage who believe that mentally ill people are dangerous and incurable are more likely to seek folk medicine remedies or traditional medical treatments. Previous studies have also shown that mental health perceptions and help-seeking behavior are influenced by a lack of knowledge and a mix of cultural perspectives (Ham et al., 2011).

In summary, cultural and religious practices and beliefs shape people's understanding of mental health and their response to mental illness. Explanatory models that incorporate bad actors or spiritual elements impact people's perceptions of people living with mental illness, understanding of symptoms as mental illness, and can lead to shame or hiding mental illness. Even when seeking help, how mental health problems are attributed to various explanatory causes can impact where help is sought, such as through traditional or religious healers rather than mental health professionals. Stigmatizing beliefs arising from culture, religion, the general population and even self-conception can influence people's knowledge of mental illness and willingness to seek help– these constructs of knowledge, help seeking, attitudes and beliefs all comprise components of mental health literacy and it is this mental health literacy that, in turn, appears a critical component of understanding individual and community responses to mental illness.

2.2.2. Stigma Toward Mental Illness Varies by Disorder

Stigmatizing beliefs may also vary depending on different diagnoses and perceived origins of various mental disorders. People may believe those who are severely mentally ill are dangerous, or prone to incompetency and criminality (Angermeyer & Dietrich, 2006). For example, a study exploring attitudes towards psychosis (Kermode et al., 2009) found greater social distance from people experiencing psychosis relative to individuals suffering depression. This increased social distance occurring as a consequence of

perceptions of dangerousness associated with psychosis. A substantial proportion of participants agreed that people with psychosis are a danger to others, can be erratic in their behavior, and should be avoided. In a similar study, Jorm (1999) investigated the difference between public and professional attitudes toward mental illness by using vignettes describing schizophrenia and depression. This study involved the public as well as general practitioners, psychiatrists and clinical psychologists. Half of each group was given a vignette describing a person that met criteria for major depression and the other half were given a vignette of a person who met criteria for schizophrenia. Results showed a significant difference in respondents' attitudes towards these illnesses with increased discrimination towards schizophrenia compared to depression (Jorm, Korten, Jacomb, Christensen, & Henderson, 1999).

The stigmatization of mental illness can also be influenced by the perceived cause of the illness. In a 2003 study, Chinese Americans and European Americans were presented with a vignette of an individual who had been diagnosed with schizophrenia or a major depressive disorder. Participants were told that individual's illness was "genetic", "partly genetic", or "not genetic" and asked to rate how they would feel if one of their children dated, married or reproduced with the case in the vignette. The results indicated that genetic attribution of mental illness significantly reduced willingness to marry and reproduce among Chinese Americans, but it increased the same measures among European Americans (WonPat-Borja et al., 2012). Nieuwsma and colleagues (2011) explored attitudes toward depression among Indian and U.S. populations. They found that Indians were more likely to attribute depression to failure, unfulfilled expectations, and family issues and thus to more greatly stigmatize the condition (Nieuwsma et al., 2011).

In summary, explanatory models of mental illness vary according to different disorders, and likewise stigma and discrimination toward people with mental illness also varies according to these disorders. This can further interact with other cultural values and aspects of explanatory models. When considering the cultural aspects of mental health literacy interventions, this complexity is important to consider in order to appropriately target prevailing beliefs about specific disorders within a specific context. Further, across contexts, there may be greater fear and misunderstanding of people with severe mental disorders, such as psychosis, that result in erratic social behavior.

2.2.3. Stigma Serves as Barrier to Help Seeking

The above literatures demonstrate that beliefs and perceptions about mental illness are closely linked to cultural and religious teachings regarding the causes and impacts of various disorders. Moreover, these beliefs and perceptions have strong significance to the care and well-being of people with mental illness. Negative beliefs and attitudes toward mental illness can potentially create strong barriers around help-seeking behaviours of individual, family, and community (Augsberger et al., 2015; Chen et al., 2014; Clement et al., 2015; Kanehara et al., 2015). Stigma can further impact an individual or family's ability to manage their experience of illness or the illness of their children (Heflinger & Hinshaw, 2010; Kim et al., 2010; Ndetei et al., 2016).

For example, results from the 2002-2006 world mental health Japan survey showed 63.9% of respondents reported not seeking help due to low perceived need; 68.8% participants wanted to solve the problem by their own and 54.2% dropped out of care due to low perceived need, highlighting a

strong association between beliefs and seeking help behaviour among Japanese people (Kanehara et al., 2015). A study of depression and suicide among Asian American women likewise found culturally-influenced stigmatizing beliefs and a lack of culturally appropriate mental health interventions significantly influenced the overall course of help seeking and treatment outcomes. More than 60% of this population failed to access any mental health care, and more than 80% failed to receive minimally adequate care. The author suggested that the influence of Asian family structure, community stigma and the lack of culturally appropriate mental health interventions could be regarded as strong barriers for mental health utilization among this population (Augsberger et al., 2015).

Huggins and colleagues (2016) also investigated the association of stigma with mental health and the underutilization of mental health services in school environments. In this qualitative study, school personnel and students (n=15) from three high schools in a rural public school, an urban public school, and an urban private school were interviewed. Results showed stigma significantly reduced the willingness of students to seek support from school-based mental health services because they misunderstood or had a negative perception of mental health services. They also feared being embarrassed or stereotyped when receiving treatment. A study conducted in UK showed young adults struggled to access for professional help due to stigma, with 35% of youth with mental health difficulties never seek any help due to feeling uncertain of their problems and holding strong negative beliefs related to seeking help from professional (Salaheddin & Mason, 2016). Similar findings by Bowers and colleagues (2013) indicated stigma as a main barrier to mental health service utilization among young people. This study showed around 70% of high school students reported stigma as a significant reason for not accessing school mental health services; 23% reported lack of knowledge

and information to get support; and 20% reported peer pressure and the inability to recognize problems as the second most common barrier.

Self-perception related to stigmatizing beliefs can also act as a barrier to seeking treatment. A literature review study by Gulliver et al., (2010) showed that adolescents not only held stigmatizing beliefs related to mental illness, but also demonstrated a preference for self-reliance. Clement et al., (2015) highlighted the central role negative self-concept and stigma can play in barriers to help seeking. The authors reviewed 354 studies conducted in Europe, Australia, New Zealand, Asia, and South America to address the relationship between stigma types and help seeking treatment. Most samples in these studies were students and people with personal experience of mental health problems or being in treatment. One hundred and forty-four studies were identified that involved stigma and help seeking behaviour. Internalized or negative self-concept and stigma in treatment was most often associated with reduced help-seeking.

A similar study by (Chen et al., 2014) also emphasized the influence of self-stigma on underutilization of mental health services among adolescents. Findings demonstrated a relationship between internal and external stigma and willingness to seek help. This self-stigma can be particularly acute among adolescents and may not be fully understood by service providers. In a Canadian survey, researchers set out to examine whether stigma affected utilization of school mental health services by interviewing both students and providers. The responses of high school students (aged 13-20) were compared with mental health providers. Results showed a significant between-group difference ($p = .03$), with nearly 70% of young people citing stigma as a major problem accessing care, versus 51% of service providers. The authors concluded that educators should build their capacity in the area of mental health literacy to reduce the gap between

school-based service providers and “young peoples’” perceptions (Bowers et al., 2013). A cross-sectional study between European Americans currently living in the USA (N=100) and Indians currently living in in India (N=108) to assess the knowledge and beliefs about depression, schizophrenia and anxiety disorders concluded that beliefs of culture played very important role in help-seeking. This study indicated that Indian who have better knowledge to recognize disorder were more likely to endorse both lay and professional help compare to European American the relationship between these two factors was orthogonal. This study stated that culture has influence on mental health literacy, knowledge and beliefs of individual toward mental illness and it impact the help-seeking behaviour (Altweck et al., 2015).

The above literature reveals that stigma – which as described earlier is a product of poor mental health knowledge, cultural and religious beliefs, and varied understanding of particular disorders – is major obstacle to care for mental illness. Further, it is not just community or external stigma, but also self-perceptions, that can lead to reduced willingness to seek professional health.

3. Meaning of MHL in MH Problem’s Prevention and Early Intervention

3.1. Promotion and Prevention Program in General

The above literature suggests that attitudes about mental illness are tied to knowledge and beliefs about the causes and consequences of various disorders, which are culturally specific. Therefore, approaches to prevention and early intervention must take into account not only structural challenges, such as poor service availability, but also cultural norms and beliefs that may be contributing to a lack of recognition, help-seeking, or support for people with mental health problems. This highlights the critical role of mental health

literacy as a foundational component to improving mental health services and support. Literatures showed there are different strategies when preventing mental, emotional and behavioral disorder that include mental health promotion interventions, universal preventive interventions, selective preventive interventions, and indicated preventive interventions. Promotion and prevention intervention have been recognized as an important component of the mental health intervention spectrum (IOM, 2009). The interventions can occur in a range of settings and multiple contexts, it has been targeted school, home, neighbourhood agency, primary care clinic, outpatient mental health, day treatment program residential facility, and inpatient unit for intervention. Most interventions aim at enhancing individual's ability to achieve developmental competence and positive mental outlook, well-being, social inclusion and strengthening ability to cope with adversity. This type of interventions could benefit most people especially for population that has not been identified on the basis of individual risk and its cost-effective manner that could be applied for across setting such as LMICs. For example, integration mental health promotion intervention into school system that is cost-effective strategy and the program could be reached to many people especially for students and teachers. In addition, universal preventive interventions have advantages when the costs of individual are low it is effective and acceptable to the population.

Preventive interventions also play an important role to facilitate early identification mental disorders and promotion of mental health treatment, and are therefore critical components of a comprehensive mental health system. Evidence shows that promotion and prevention programs leading to timely diagnosis and early intervention in any stage of mental illness have significant and life-changing consequences for a person's well-being, positive outcomes for youth and are cost-effective for communities (Foster & Jones, 2006;

Reynolds, Temple, White, Ou, Robertson, 2011). Lack of intervention can lead to tragic and costly consequences such as poor school performance or drop-out, stressed family relationships, involvement with the child welfare or juvenile justice system, substance abuse or engaging in risky behavior (Kapphahn et al., 2006; Kieling et al., 2011; V. Patel et al., 2007). A report by the National Research Council (2009) in the United States estimated the cost of mental health care services for young people at $247 billion, yet failure to intervene for young people potentially has far higher personal, social and economic consequences for society (O'Connell et al., 2009).

3.2. Promotion and Prevention to Mental Health Care

Related to mental health care, a growing body of evidence indicates that opportunities for preventing mental disorder are greatest when focused on children and adolescents and can produce long-lasting positive effects on multiple areas of functioning, producing social and economic benefits (Durlak & Wells, 1997; Jané-llopis et al., 2003; Kessler et al., 2007; Kutcher et al., 2010). For example, Dawson and his colleagues (2010) showed early treatment for children with autism spectrum disorder (ASD) leads to significant improvements in IQ and adaptive behaviour (Dawson et al., 2010). Although there may be a number of mental health programs in existence, only a small percentage of youth access professional help (Kieling et al., 2011; Paula et al., 2014). Studies have found that most children and adolescents with mental health disorders do not seek out or receive the services that they need. Studies suggest that between 60 to 90 percent of adolescents with mental health problems fail to receive treatment (Chandra & Minkovitz, 2006; David et al., 2008). Challenges obtaining adolescent mental health services may include the shortage of mental health professionals, low capacity and motivation of non-experts to provide quality mental health care to young

people, lack of funding, policies and regulations, family background systems, and, as described above, the stigma associated with mental disorders (Chandra & Minkovitz, 2006; Chen et al., 2014; Clement et al., 2015; Ndetei et al., 2016; Parcesepe & Cabassa, 2013; V. Patel et al., 2007; Pescosolido, Perry, Martin, McLeod, & Jensen, 2007; Rickwood, Mazzer, & Telford, 2015; Sercu & Bracke, 2016).

In order to overcome barriers to treatment for mental health among this population, it is important to establish mental health prevention and promotion programs for children and adolescents in LMICs**.** School is potentially most effective vehicle for such interventions, because it can reach a broad population of students in a cost-effective manner (Wolpert et al., 2013). A meta-analysis of 29 studies evaluating the effectiveness of school-based programs found school mental health prevention and intervention programs can alleviate the early onset of mental health disorders and reduce persistent symptoms among children and adolescents with emotional and behavioural problems (Reddy et al., 2009). Studies have found that teachers are willing to support students with mental health problems, and as a part of their role, they should provide a positive, safe, and friendly environment, teaching mental health education and identifying students' mental health concerns (Mazzer & Rickwood, 2015). Previous research found that professional development for teachers to support students with mental health problems was strongly correlated with teacher knowledge, belief and ability to identify problems, support and refer students with mental disorders for professional help (Jorm et al., 2010; Kirchner et al., 2000; Koller & Bertel, 2006). In their review of school mental health interventions, Barry and colleagues (2013) identified 22 evaluation studies, with 14 studies involving school intervention programs, and the other seven studies involving an experimental design for their evaluation. Most of the experimental designs

included interest in social, emotional, and problem-solving skills rather than solely focusing on improving mental health functioning. Findings provided evidence of the importance of school-based interventions for adolescents, but also take into account the potential of multicomponent interventions that impact youth mental health and social wellbeing (Barry, Clarke, Jenkins, & Patel, 2013; Weare & Nind, 2011).

In summary, a comprehensive prevention model such as that introduced by the Institute of Medicine (IOM, 2009) offers a framework for reducing the burden of mental, emotional and behavioral disorders on the healthy development of children and young people. Given the lack of treatment resources in many LMIC, methods to promote prevention and early intervention of mental health disorders are critical to reduce the harmful impact of mental illness on young people, improve their developmental trajectories, and ensure efficiency in use of limited resources.

3.3. Promotion and Prevention Mental Health Problems in School Setting

Strengthening existing resources and targeting environments like schools, health centres, communities and programs that help children at risk might reduce mental problems (Barry et al., 2013; Fazel, Patel, et al., 2014). Kieling et al., (2011) suggested that rather than developing new models of intervention, it is potentially more sustainable to integrate programs into services that already exist. A systematic review of universal approaches suggested that the promotion of mental health in schools has a positive impact on long-term interventions for mental health (Wells, Barlow, & Stewart-brown, 2003). In US, the Multi-Tiered System of Supports (MTSS) model is considered “best practice” to meet varying levels of need among school age children. Consistent with the IOM (2009) guidelines, The MTSS consists of a continuum of three tiers of prevention: primary, secondary, and tertiary. In

Tier 1, or primary prevention, all students receive academic and behavioral support (Ziomek-Daigle et al., 2016). Examples include teaching expected behaviors schoolwide, the use of evidence-based academic strategies and curriculums, and school-wide efforts to improve school climate. These types of universal programs are expected to be sufficient to meet the needs of approximately 80% of students. Students with elevated needs receive more specialized secondary and tertiary prevention, typically 15% and 5% of students, respectively (Sugai & Horner, 2009; Ziomek-Daigle et al., 2016). Educators provide increasing degrees of interventions and supports in order for each student to be successful academically and behaviorally. By integrating a multi-tiered framework in schools there is a comprehensive system in place to support kids.

A MHL program would be considered a Tier 1 support program. MHL curriculum is a universal intervention for all students/teachers to create a more accepting, positive school climate, and to aid in the identification and management of student mental health needs. While MHL is an important universal step to decrease stigma and increase recognition of mental health problems, this alone is not likely to be sufficient to impact change. Instead, to maximize program impact, a MHL curriculum should be integrated into a MTSS framework that is more effective and adequate to meet the varying need of children with mental health conditions. However, development of a comprehensive MTSS model in Cambodia has to date been hampered by lack of human resources, budget constraints, political will (i.e., motivation at all levels of educational system), and cultural differences between US and Cambodia.

Several studies indicated that school mental health literacy programs could potentially be seen as a pathway to improve mental health care for children and adolescents (Kutcher, et al., 2015; Kutcher et al., 2013; Kutcher,

Wei, & Morgan, 2015; Mcluckie, Kutcher, Wei, & Weaver, 2014; Milin et al., 2016; Wei & Kutcher, 2014; Wei, Kutcher, Hines, & Mackay, 2014). This provides evidence that interventions in school settings, health-care services, social services, and community services could have great benefits for child and adolescent mental health (Fazel et al., 2014; Kutcher et al., 2015; Kutcher, et al., 2015;). Dang et al. (2017) introduced a school-based intervention in Vietnam described as the Reaching Educators, Children, and Parents (RECAP) program. The authors suggest that this program may have value as a universal intervention for countries similar to Vietnam. The study used a semi-structured program that provides classroom social skills training to students, consulting for teachers and classroom-wide behavior management. The study showed significant treatment effects on both emotional and behavioral problems in the treatment compared to control group.

In summary, promotion and prevention programs are vital to promote children's mental health and well-being, and school is an optimal place to support early identification and intervention for students showing signs of poor mental health. Ideally, school-wide interventions would be integrated into multi-tiered care models in which a positive school climate is promoted for all students, with clear pathways to higher level supports when needed.

4. Role of Teachers in Management of Mental Health Problems

Teachers have an influential role in educating and supporting students' learning and development because they are able to observe them over an extended period of time (Herman, Reinke, Parkin, Traylor, & Agarwal, 2009; Meldrum, Venn, & Kutcher; Moor et al., 2000). A review of previous studies shows that teachers need to be involved and take action to support students

with mental health problems Kutcher, et al., 2015; Parikh et al., 2016; Woods, 2014).

Teachers see supporting students with mental health problems as part of their professional role (Herman et al., 2009; Reinke et al., 2011; Van Ameringen et al., 2003); but studies have shown that they believe they lack the knowledge and skills to adequately address such problems (Andrews, McCabe, & Wideman-Johnston, 2014; Mazzer & Rickwood, 2015; Reinke et al., 2011). For example, a study of teachers' perceptions of needed mental health services indicated a serious lack of knowledge regarding evidence based intervention – in fact, nearly half of the teachers being surveyed could not recognize the term "evidence based practice" (Reinke et al., 2011). A study in Canada showed teachers having limited knowledge about mental health. This study was conducted with 75 secondary school teachers in southwest region of Ontario, Canada. Results showed teachers agreed that supporting student with mental health difficulties was a part of their roles, but many of them acknowledged they did not have knowledge on mental health. Almost hundred percent of participants reported that they should react to students' mental health issues, but there were only 36 percent of participants reported they were confident to deal with students' problems (Andrews et al., 2014). A review of relevant literature indicates that although teachers have a desire to support students with mental health problems, they experience stress due to the fact that they feel they lack the experience to identify problems and the skills with which to respond (Curtis et al., 2006; Ibeziako et al., 2009; Jackson & King, 2004; Kurumatani et al., 2004; Kutcher, et al., 2015 & 2016; Langeveld et al., 2011; Loades & Mastroyannopoulou, 2010; Lucas et al., 2009; Masillo et al., 2012; Meltzer et al., 2003; Reinke et al., 2011; Rothì et al., 2008). Examining teachers' experiences of managing mental health problems, Rothì, Leavey, & Best (2008) found that teachers often feel unable

to identify mental health problems, or that they have no specific training in relevant areas (as shown by their confusion related to the terminology used by the Child and Adolescent Mental Health Service).

Teacher ability to identify and respond to student needs also varies by problem presentation. A study by Loades & Mastroyannopoulou (2010) showed that teachers are able to distinguish problem severity from vignettes, but were much more skilful in identifying clinical symptoms of behavioral disorders rather than those of emotional disorders. This is consistent with findings from (Meltzer et al., 2003) regarding help-seeking behavior by teachers. In this study, teachers were better able to identify emotional disorders in girls than they were in boys. Another study indicated teachers have fairly classified externalizing problem such as ADHD and conduct disorder rather than internalizing problems (Jackson & King, 2004; Undheim et al., 2016). Even studies that have shown teachers can correctly identify mental health problems may have problems related to validity, and also suggest that teachers often do not know how to respond. A study of teachers' recognition of mental health needs in Nigeria (Ibeziako et al., 2009), using focus group interviews, demonstrated that teachers were able to identify common mental health problems in children and their causal factors. However, the study used only focus group so its validity is limited. Research in England and Italy on teachers' awareness of psychotic symptoms in secondary school shows that the majority of teachers are able to recognize psychotic symptoms and correctly identify causal factors, prognosis and factors that might help recovery; but they are uncertain about their roles and confused about where to refer students in need (Lucas et al., 2009; Masillo et al., 2012).

Low teacher mental health literacy not only presents a missed opportunity to intervene, but can also create further challenges for struggling

students. A study by Bella, Omigbodun, & Atilola, (2011) investigating the knowledge and attitudes of teachers toward mental health problems found that teacher inability to recognize children with mental problems potentially resulted in emotional stress, intolerance and negative attitudes toward children with mental health problems. A further barrier to treatment may be negative attitudes educators hold toward mental illness. A study done by Parikh et al., (2016) revealed Indian secondary and high school teachers have inadequate knowledge and negative attitudes toward students with mental illness. This study designed face-to-face sessions with 520 Indian teachers from secondary and high schools, using structured questionnaires that consist of 25-items to explore the teachers' knowledge and attitude toward mental illness. A result showed teachers were less likely to identify mental problems if they were presented with a vignette. Very few could answer questions correctly about five common mentally illnesses, whereas a significant percentage could not answer any questions accurately regarding mental illness.

However, mental health literacy training has been shown to be effective in increasing teacher's skills and abilities (Kutcher, et al., 2015; Kutcher, Wei, Gilberds, et al., 2016). Although there has been a lack of research, evidence based on studies conducted to date suggests that teachers believe mental health literacy training will increase their knowledge, skills, and self-efficacy toward supporting and responding to the learning and development of students with mental health concerns (Graham, Phelps, Maddison, & Fitzgerald, 2011; Roeser & Midgley, 1997; Walter, Gouze, & Lim, 2006). A review of mental health literacy among educators by Whitley et a., (2013) acknowledged that research has been limited regarding teachers' values, beliefs and attitudes about mental health issues in the classroom. However, the previously mentioned study conducted in India Parikh et al., (2016) revealed lower education has a significant impact on mental health

literacy resulting in increased negative attitudes, increased beliefs in the dangerousness of people with mental illness and therefore increased attempts to socially distance themselves from those with mental illness. Preliminary research has shown that training can improve mental health literacy and classroom instruction. Research used to evaluate the impact of teacher mental health literacy training (the Guide) in Canada, and its adapted version for Tanzania and Malawi, showed a significant improvement regarding knowledge about mental health problems, a decrease of stigma and higher rates of help-seeking efficacy (Kutcher, Bagnell, & Wei, 2015; Kutcher et al., 2016). Another study in Norway found out that participating in a mental health literacy program or information campaign results in better recognition of psychotic cases and a more optimistic view regarding outcome of adequately treated psychosis (Langeveld et al., 2011).

This section highlights the importance of the role of teachers in facilitating mental health and well-being in children, and the potential for teachers to serve as central resources to promote mental health in school settings. Mental health literacy training can increase teachers' mental health knowledge, attitudes, reduces stigma and prejudice beliefs toward mental illness. Supporting teachers to have mental health knowledge contributes a massive benefit for children's mental health and well-being. When teachers are able to recognize problems, they can offer proper support timely and effectively for child care. With this approach, integrating mental health literacy programs into school settings can benefit all in a cost-effective manner.

5. Review Literature Supporting MHL Intervention in School Setting

Scholarly literature often probes various components of MHL that could be targets for intervention, as well as assessing responses among different populations to programs targeting the development of mental health literacy. Most commonly, studies have tracked the effect of interventions on knowledge, stigma reduction and awareness. Findings generally indicating that these components of mental health literacy are subject to positive change (Wei et al., 2014). Investigations relating to mental health literacy have been undertaken in many contexts including communities (Anthony F. Jorm, 2012), populations of university students (Mazzer & Rickwood, 2015) and school-based environments (Yoshioka et al., 2014). Within the school environment there is significant support for the efficacy of mental health interventions to increase the mental health literacy of the teacher cohort. Interventions related to MHL are generally shown to be an effective "evidence-based practice" to improve knowledge and attitudes in educational settings (Kutcher, Gilberds, Morgan, et al., 2015; Kutcher, Wei, & Coniglio, 2016; Stan Kutcher et al., 2013; Wei & Kutcher, 2014; Wei et al., 2014). Previous literature review suggests that MHL is necessary for prevention, identification and intervention related to mental health issues in schools. This study indicated that development of mental health literacy, ongoing support and training among educators, and the implementation of mental health literacy programs in schools can have a significant positive, long term impact on promoting positive mental health in schools (Whitely et al., 2013).

Evidence shows school mental health interventions can be a pathway solution to improve adolescents' mental health. For example, in Australia, a randomized controlled trial (RCT) of an 8-week school-based mental health education program taught by personal development, health and physical education teachers showed improved student knowledge and attitudes toward

mental illness relative to controls (Perry et al., 2014). In Norway, a similar training was implemented for students over a 3-day period; at 6-month follow up, results showed increased student knowledge in recognition, positive attitudes (reduced prejudiced beliefs) and appropriate help-seeking behaviors (Skre et al., 2013). A cluster-RCT in the UK also evaluated a peer-led intervention to address the stigma of mental illness, mental health literacy and mental health promotion. In this study, young people who experienced living with mental illness became teaching assistants to work with students in discussion sessions. The results showed the intervention was effective particularly integrating contact as a technique to reduce discrimination (Chisholm, Patterson, Torgerson, Turner, & Birchwood, 2012). Ojio and colleagues evaluated a two 50-minute MHL training taught by usual teachers for secondary school students in Tokyo, which showed increased knowledge and positive attitudes toward mental illness among school-age children. Due to the positive results the schools established mental health literacy programs in their system (Ojio et al., 2015). A study conducted in Portugal also evaluated an intervention to improve teacher MHL, designed for two sessions, 150 minutes each at one-week intervals. Teachers' knowledge and attitudes were assessed before and after the intervention, showing significant increases in knowledge of mental health and greatly decreased stigmatizing attitudes toward mental illness (Campos et al., 2014).

Mental health literacy trainings have also been evaluated across a number of LMIC. For example, in Malawi, teachers were assessed before and immediately after completing a 3-day MHL training, and demonstrated significant improvements in their knowledge and attitudes toward mental illness after the training (Kutcher, et al., 2015). A similar study in Haiti also demonstrated positive impacts in teacher knowledge and attitudes after a two and half day of MHL training for teachers; however, teachers also felt that the

length of training sessions should be extended (Eustache et al., 2017). Imran and colleagues identified that building teachers' capacity on mental health was a great alternative target to promote positive mental health among youth. This randomized control trial was conducted with Pakistani teachers using World Health Organization-School Mental Health Manual-based intervention in three 6-hour, face to face session. Teachers' mental health literacy was assessed before and immediately after intervention with a three-month follow-up. This finding was supported to the large scale of RCT; the intervention was effective to improve teachers' mental health literacy. The author suggested that WHO-EMRO School Mental Health Manual-base Intervention was applicable to build teachers' capacity of mental health and it was convenient to learn practical steps that could be implemented at low cost in school settings (Imran et al., 2018). Studies by Kutcher et al. (2013 & 2016) and Wei et al. (2014) showed that mental health literacy training significantly improved teachers' knowledge of and attitudes toward mental health issues. Kutcher et al. (2016) adapted a Canadian mental health curriculum for use in Africa, evaluating its impact on mental health literacy among Tanzanian secondary school teachers. Results revealed highly significant improvements in teachers' overall knowledge, including knowledge of mental health and curriculum specific knowledge. Teachers' negative beliefs about mental illness also decreased. Wei et al. (2014) used a guide developed by Kutcher (2013) to implement a one-day mental health literacy training session among 134 teachers. Results showed the training significantly improved teachers' knowledge and attitudes toward mental illness, and the training was highly successful in meeting the teachers' needs as well as enhancing the teachers' confidence in addressing students' mental health in school.

Teacher-delivered trainings have also been shown to improve student-level outcomes in LMIC. For example, Kutcher, et al., (2015) evaluated the

outcome of a classroom-based MHL intervention on students' school performance, mental health care related help-seeking, and social and emotional wellbeing. Teachers received mental health training based on AGMv format for one week before teaching in the classrooms. Following the intervention, most teachers reported students were more likely to open up and talk more about their problem or problems of others; it was reported around 70% of students approached them with a concern about their own mental health or their friends and around 94% encouraged their peers to seek help (Kutcher, et al., 2015). In a 2015 study, Kutcher et al. (2015) evaluated students' knowledge and attitudes related to mental health after being taught using the Mental Health and High School Curriculum Guide. Results showed students' knowledge of and attitudes toward mental illness improved substantially compared with baseline and this improvement was maintained at 2-month follow-up ($P < 0.001$). The findings suggest embedding MHL resources in the classroom curriculum can effectively improve literacy among students. MHL training can also be used to combat stigma against mental health disorders among student populations (Mcluckie et al., 2014; Milin et al., 2016; Wei et al., 2014). In a different study by Wei et al. (2014), students showed a significant decrease in stigmatizing beliefs related to mental illness after their teachers participated in a one-day training course (Wei et al., 2014). In a RCT showed MHL curriculum resource was effective in enhancing mental health literacy for students. In the study, some schools were randomly assigned to either the intervention or control group. Among 534 students from 24 high schools, about half of participants were taught mental health literacy by their teacher. The intervention program consisted of a six-module 4-8-week curriculum guide. The changes in MH knowledge and stigma/attitudes toward mental illness were evaluated overtime between intervention and control groups. As results showed students who received the mental health

curriculum had more positive attitudes towards people with mental illness and better mental health knowledge than student in control group who received no intervention (Milin et al., 2016). The study by McLuckie et al. (2014) showed that the measured improvements among students remained two months after the initial exposure.

6. Current Study

Whilst the previous literature review identifies a significant evidence base for changes in knowledge and attitudes associated with mental health literacy training in schools, the focus of the current research is to extend this literature base to within the Cambodian context to both develop an understanding of baseline measures of mental health literacy amongst Cambodian teachers and to then assess the impact of an intervention on these baseline measures. It is possible that the cultural beliefs and values relevant to both mental health and education potentially shape the findings of this study. To date, no study has been conducted in Cambodia related to mental health literacy in schools. Cambodia does not have the resources to hire school counsellors and thus teacher training is essential to developing MHL programs. However, research was necessary to determine how such resources can be culturally sensitive and also effectively integrated into Cambodian educational settings.

6.1. Interpreting study findings in terms of causal inference

In addition to expanding research on MHL to Cambodia, this project also seeks to address shortcomings in prior MHL intervention research in LMIC. A systematic review in (2013) that included 27 articles on school MHL interventions for students in LMIC showed that most of these studies had a risk of bias in terms of addressing the improvement of knowledge,

attitudes and help seeking behavior. Common limitations included the lack of randomization, control for confounding factors, validated measures and report on attrition in most studies (Wei et al., 2013). Indeed, many of the studies described above, and nearly all of the studies described in LMIC, do not support causal inference, most often due to lack of a control group.

In scientific research, the efficacy of teachers' mental health literacy training refers to capability of producing a desired result *through the MHL training*, with the implication that the mechanism employed in the MHL training has a direct counterpart in the actual causes of the observed phenomena. Therefore, in order to infer causality, we must operationalize our outcomes, measure them with valid and reliable instruments, incorporate consideration of change over time (e.g., pre-post), and *consider what change in these outcomes may have occurred during that same period of time in absence of the intervention*. This last point may only be addressed with the inclusion of a control comparison. This begins to answer the question of efficacy, or whether the intervention works in ideal circumstances.

Further along the evidence chain is the question of effectiveness; whereas efficacy trials evaluate the intervention in ideal circumstances (i.e., focused on internal validity), effectiveness studies examine whether the intervention will continue to work in regular, real-world practice (i.e., focused on generalizability) (Godwin et al., 2003). Whereas this is presented as a dichotomy, trials actually exist on a continuum of interpretation. Singal describes a number of features that must be in place to support conclusions of effectiveness: implementation in a real-world setting, using few to no exclusion criteria and usual providers, with less rigidity about how the intervention is offered (Singal et al., 2014). In this study, we move toward effectiveness research by the use of teacher implementers delivering the intervention in a real-world classroom. However, we do provide more

training and supports than would typically be available in everyday use, and the study itself is restricted to a single school setting, which limits the external generalizability of our findings. As such, this study is situated on the continuum somewhere in-between a clear efficacy or effectiveness study. We also note limitations in random allocation at the student level that further restricts causal inference related to study findings.

CHAPTER 2

METHODOLOGY

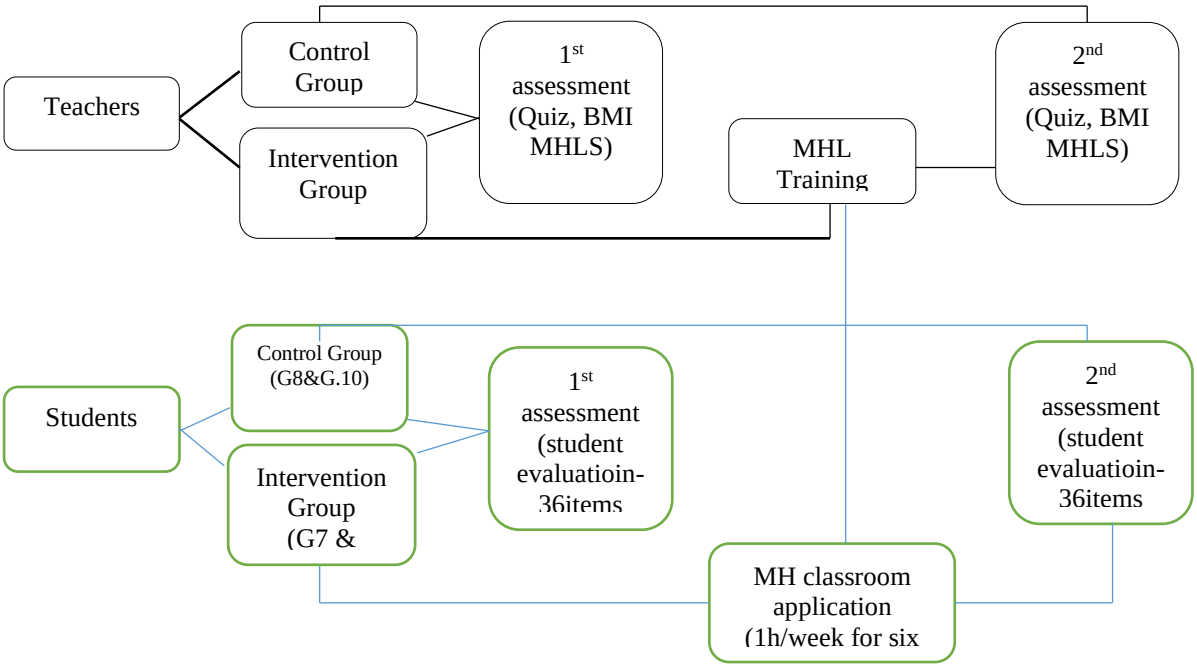
2.1. Overview of Research Design

The study used a randomized controlled trial among teachers, with a non-randomized controlled comparison among students. The study used a pre-post randomized controlled trial design in which the impact of the independent variable of mental health literacy training was evaluated in relation to the dependent variable of mental health literacy (knowledge, beliefs, and attitudes). The goal of this study was to evaluate a culturally adapted version of a school-based mental health literacy program, initially developed in Canada, for use in Cambodian high schools. Specifically, we aimed to adapt the program, evaluate baseline mental health literacy of both teachers and students, and compare post-intervention mental health literacy scores between teachers and students who were randomized to the intervention vs. control condition. We hypothesized that intervention participation would result in higher mental health literacy among both teachers and students.

Teachers were randomized to either participate in the mental health literacy training program or a no-intervention control condition. Teachers' mental health literacy was evaluated before and after intervention. The impact of the mental health literacy training was further investigated at the student level. To avoid contamination, students were purposively assigned to intervention and control conditions by grade level. Four teachers who had received the teacher training in the intervention condition also received an additional day of train the trainer instruction, and then taught. Students in the

intervention condition then participated in a 6-week classroom-based mental health training program delivered by these teachers. Mental health literacy of students was evaluated before and after the intervention.

Figure 2. Study design



1. Aim 1: evaluate whether baseline MHL scores vary according to participant demographics for a) teachers; and b) students.
2. Aim 2: evaluate whether the MHL intervention significantly improved MHL scores relative to a control group for a) teachers; and b) students.
3. Aim 3: evaluate whether intervention impacts were moderated by demographic characteristics for a) teachers and b) students.
4. Aim 4: evaluate feasibility and acceptability of the Guide-VN as adapted to Cambodian context.

2.2. MHL Curriculum Guide Overview

The Mental Health Curriculum Guide consists of six modules designed to be implemented by teachers into their usual classroom program. These modules outline the important areas needed for students to increase their mental health literacy, including understanding mental health and mental illness; a review of adolescents' experiences of mental illness; strategies to address disorder, enhance help-seeking and access to resources and the importance of positive mental health. The self-study module provides detailed description about common mental disorders in adolescents and 'what to do' strategies for teachers. All components in module aim at providing teachers with classroom ready lesson plans, activities and easily accessible resources to assist teachers when applying the guide in classroom. The guide consists of six modules that are designed to be taught in sequences. All modules have two sections: core materials and supplementary materials. The core materials are designed for teachers to be used for all students when applying the guide in classroom so as to achieve the outcome identified in the research and evaluation of this resource. The supplementary materials are designed for use by students who want to spend extra time to learn more about the module topic. The Guide consists of both teacher preparation and classroom ready materials that can be easily found at www.teenmentalhealth.org/curriculum. In each module provides several key features include overview of module, learning objective, major concepts, teacher background, activity, and preparation (i.e., required materials to conduct for each activity).

Topic and key concepts of each module are described below:

Figure 3. Modules and major concepts	
Module	Major concepts
Module 1: The stigma of mental illness	- Stigma acts a barrier to people seeking help for mental health problems and mental illness. - Learning the facts about mental illness can help dispel misconceptions and stigma. - People's attitudes about mental illness can be positively influenced by exposure to accurate information. - We all have a responsibility to fight the stigma associated with mental illness.
Module 2: Understanding mental health and mental illness	- Everyone has mental health regardless of whether or not they have mental illness. - The brain controls our thinking, perceptions, emotions, physical activities, behaviour and provides us with cues about how to adopt our environment. - A mental illness is a heath condition arising from changes in usual brain functioning that causes person substantial difficulty in functioning. - Mental illnesses have complex causes that include a biological basis and are therefore not that different from other illnesses. As with all illness the sooner people obtain effective treatment for mental illness, the better their outcomes.
Module 3: Information on	- All mental illnesses reflect difficulties in thinking, perception, emotions, physical activities, behaviour

specific mental illness	and signalling (response to environment). - The exact cause of mental illness is not yet known, but complex interactions between a person's biology and his environment are involved. - Like illnesses that affect other parts of the body, mental illnesses are treatable and the sooner people receive proper treatment and support, the better the outcomes.
Module 4: Experiences of mental illness	- Mental illnesses are diseases that affect many aspects of a person's life. - With appropriate support and treatment, most people with a mental illness can function effectively in everyday life. - Getting help early increase the chance that a person will make a full recovery from mental illness. - Mental illnesses, like physical illnesses, can be effectively treated.
Module 5: Seeking help and finding support	- There are many ways of seeking help for mental health problems and mental illnesses, and resources are available within schools and within the community; - Knowing the signs and symptoms of mental illness helps people know how to distinguish the normal ups and downs of life from something more serious. - Recovery from mental illness is possible, when a range of supports, beyond formal treatment, are available.

	- Everyone has mental health that can be supported and promoted, regardless of whether or not they also have a mental illness.
Module 6: The importance of positive mental health	- Positive coping strategies can help everyone maintain and enhance their mental health. - There are skills and strategies that we can learn to help us obtain and maintain good mental health.

2.3. Study Methods

About half of teacher was randomly assigned to intervention group and other half teacher was randomly assigned to control group. Teachers at intervention group required to participate 2-day mental health literacy training and intervention teachers were assigned to implement the guide in classroom attended one-additional day “train the trainer”. The intervention teachers were observed the change in knowledge, beliefs and attitudes compare to control group. Students were assigned by grade which grade 7 and 11 students were assigned to intervention group, receiving MHL classroom intervention, and grade 8 and 10 students were assigned to control group, no intervention or receiving only their standardize classroom curriculum. The intervention students were observed the change of knowledge and attitudes compare to control group. Descriptive analysis provides differences in mental health literacy as a function of participant’s demographic information, and Analysis of Covariance (ANCOVA) was used for both the teacher and student data.

2.3.1. Participants and Sampling Strategy

The study was conducted at one private high school in Phnom Penh, capital city of Cambodia. The vision of school is to provide good quality of education, enhance life morality and dignity for poor community children. The school provides general education program from kindergarten to high school education. The school enrols approximately 1300 students from all grades. Each grade has two classes and approximately 45 to 50 students per class. As reported by school administrator indicated there were about 108 staff who are working full-time and part-time in the school. It is a private and Catholic school, but the environment, education system, leadership, human resources bother teachers and students are not different from public or other private schools. One difference the enrolment is not as open as public or private schools. Students must apply and be interviewed according to the school's selection criteria. Mostly, selected students are from poor communities or families who lack the ability to send their children to public or private schools like other families.

This study used a random assignment for teacher participants based on a number on the consent form; those with an even number were assigned to the intervention group, and odd numbers to the control condition. Intervention teachers received training in the mental health literacy curriculum. Four intervention teachers were also selected and trained to implement the guide in classroom; the limited selection was due to limited number of classrooms for implementation. Teacher selection for this role was non-random, in consultation with the school director, because they taught English, Library, and Khmer language (i.e., classes in which the MHL materials could be included without deviating from governmental curriculum requirements). Teacher in control group were waiting list, did not receive any intervention. For students, purpose sampling was used. Because of containment and to reduce spill-over, students were carefully assigned by grade. Students at seven

and eleven grades were allocated to intervention group, and students at eight and ten grades were assigned to waiting list. Intervention students received six module sessions by their usual classroom teachers while control student did not receive any intervention.

A total of 100 staff were contacted for recruitment. N = 73 (intervention: n = 36; control: n = 37) consented and returned the baseline assessment. Of those, 67 provided complete data for analysis (intervention: n = 34, 94%; control: n = 33, 89%); reasons for staff loss to follow up were unrelated to the project (e.g., change of employment). Students from grade 7, 8, 10 and 11 were invited to participate in the study. Students at grade 7 and 11 were assigned into intervention group, receiving mental health literacy intervention by usual classroom teachers, and students at grade 8 and 10 were assigned into control group, waitlist or not received any intervention. At baseline, there were three hundred and two (N = 302) students completed the baseline assessment (intervention: n = 158; control: n = 144). Of those, 275 students (intervention: n = 145; control: n = 130) completed data for analysis. Twenty seven students were excluded the data for analysis because of mismatch assessments between T1 and T2.

2.3.2. MHL Intervention for Teachers and Students

In order to increase teachers' mental health literacy and supporting them in delivering the Mental Health Curriculum Guide within their classroom, a two-day face-to-face teacher training was conducted by researcher, clinical psychologist, who has more than ten years experiences in teaching and training in mental health field. The goal of this teacher training is to help enhancing mental health literacy as well as providing specific guidance on how to best implement the Mental Health Curriculum Guide in classroom. The content of the face-to-face teacher training parallel with the

six modules of the Mental Health Curriculum Guide and provides a more in-depth exploration of the key concepts. The training includes: a review of the context of adolescent mental health; relationship between brain function and mental health; a concept specific to mental disorders; psychological terms difference (i.e., what is stress and distress); mental disorders classification, stigma of mental illness; and overview how to use the Guide in classroom.

Teaching methods include case study, group discussion, group reflection, and power point slide presentation were used for learning and teaching during this 3-day training process. Ten cases studies have been developed include schizophrenia, Depression, Bipolar Mood Disorder, Social Anxiety, General Anxiety, Panic Disorder, Obsessive Compulsive Disorder, Post Traumatic Stress Disorder, Eating Disorder, and Attention Deficit Hyperactivity Disorder. Case studies were adapted from existing case studies developed by senior psychiatric consultant Dr. Sotheara Chhim, TPO Executive Director. Discussion groups were conducted in different forms (i.e., small group discussion or self-group reflection) to engage interactive learning environment. For example, participants were asked to work on case studies to identify problems/symptoms and think of kind of support/treatment should provide to the case. For the review of the context of adolescent mental health topic, teachers were asked to work in pair to discuss about the topic what they have learnt/known about mental health, particularly adolescent mental health (i.e., what is mental health, how do you recognize people with mental health problem, and how does community view about mental health problems?). Then, teachers were followed in deep understanding about adolescent mental health and a review of relationship between brain function and mental health through slide presentation which presented by trainer. Teachers were also divided into small groups working on case studies to identify the problems (signs and symptoms), contributing factors to the problem (causes), and type

of interventions or treatments. Every group was asked to present their result of discussion. Trainer used slide presentation to clarify and support their discussion. This training addresses knowledge and attitudes of the participants regarding mental illness by introducing video clips of youth experiencing mental illness and through discussion about the myths and facts of mental illness across all components of the training. Throughout the training, the trainers seek to facilitate dynamic discussions related to teaching strategies to scaffold the development of knowledge related to mental health and practical strategies for implementing the Mental Health Curriculum Guide within their classrooms. Each participant is provided with a copy of the Mental Health Curriculum Guide along with the teacher self-study module and a copy of the training materials used during the two-day training program.

Leveraging a train-the-trainers model, the four teachers assigned to use Mental Health Curriculum Guide in their classroom were then invited to participate in a one-day training session. The goal of this training was to help teachers gain more understanding of the materials and assist them to access the online resource materials recommended through this curriculum guide. Teachers were instructed study to improve the knowledge before delivering this Mental Health Curriculum Guide in their classroom program (e.g. teachers were instructed to read the Teacher Knowledge Update and complete pre-post quiz). Teachers were also instructed on how to use the Guide and existing school curriculum.

Assigned teachers to implement MHL program in classroom were instructed on how to access the training guides and materials in the text book and online sources (i.e. teacher knowledge self-test, teacher knowledge update, student evaluations, access the modules and guide download) through the link provided: http://teenmentalhealth.org/schoolmhl/school-mental-health-literacy/mental-health-high-school-curriculum-guide/about-the-guide/.

Teachers were trained to access these resources to update their knowledge or classroom use. For instance, teachers can assess the available online resources at www.teenmentalhealth.org website at the direct URL: www.teenmentalhealth.org/toolbox/school-mental-health-teachers-training-guide-english/. Teachers also learned when and how to apply this classroom curriculum. For example, they learned to apply subsequent modules (starting from module one to module six), and how to deliver the major concepts of each module. Classroom delivery teachers were also oriented to the existing work-plan and activity that informed in the module. For example, module one – activity 2: teacher asked students to use community attitudes survey to interview people they knew include member of families or relatives and then asked student to return the survey sheet in class to do group analyses and interpret the result together. Teachers also learned how to integrate other existing resources and their teaching approaches to create a positive learning environment in the classroom. Furthermore, teachers know that a research assistant (clinical psychologist) would sit in to observe their class and their performance.

2.3.3. Measures

This section describes about the measure that used in the current study both teachers and student measure including the process of adaptation and validation in Cambodia context.

2.3.3.1. Teacher Measures

Teacher pre-post outcomes were assessed using the Mental Health Knowledge Quiz (MHKQ), Mental Health Literacy Scale (MHLS), and Beliefs toward Mental Illness (BMI). These assessments were translated,

adapted and also piloted with 10 staff before beginning the study. The Guide Lesson Fidelity Rating and Teacher Survey were used to observe teacher implementing the guide in classroom.

The MHKQ (Kutcher, 2016) is an assessment developed for use with the curriculum to assess knowledge of information presented in the guide. The quiz consists of 30 true/false items (e.g., "a phobia is an intense fear about something that might be harmful such as heights, snakes, etc."). Each item was scored as incorrect = 0 and correct = 1, missing data was treated as incorrect. Scores are reported as the proportion correct (range: 0-1), with higher scores indicate greater knowledge. Internal consistency was not calculated as these items are not intended to measure a single underlying construct.

The Mental Health Literacy Scale (O'Connor & Casey, 2015) was designed to assess an individual's level of mental health literacy, determine areas in which individuals may require further support, and evaluate the effectiveness of interventions intended to improve MHL. The original MHLS is a 35-item measure including six subscales that identified subjects' mental health literacy demonstrating good internal consistency ($\alpha = .87$) and test-retest reliability ($r = .80$), and support for its validity for use in evaluating outcomes of mental health literacy training programs (O'Connor & Casey, 2015). The MHLS was adjusted for this current study by removing those seven items due to low reliability and lack of evidence these occur in Cambodia. No epidemiology studies that addressed the severity of illness between genders are available. All deleted items and scales are included below:

Question 9. To what extent do you think it is likely that in general in Australia, <u>women are MORE likely to experience a mental illness of any kind compared to men.</u>

Very unlikely Unlikely Likely Very Likely

Question 10. To what extent do you think it is likely that in general, in Australia, men are MORE likely to experience an anxiety disorder compared to women.

Very unlikely Unlikely Likely Very Likely

Question 11. To what extent do you think it would be helpful for someone to improve their quality of sleep if they were having difficulties managing their emotions (e.g., becoming very anxious or depressed).

Very unhelpful Unhelpful Helpful Very helpful

Question 12. To what extent do you think it would be helpful for someone to avoid all activities or situations that made them feel anxious if they were having difficulties managing their emotions.

Very unhelpful Unhelpful Helpful Very helpful

Question 13. To what extent do you think it is likely that Cognitive Behaviour Therapy (CBT) is a therapy based on challenging negative thoughts and increasing helpful behaviours

Very unhelpful Unhelpful Helpful Very helpful

Question 14. Mental health professionals are bound by confidentiality; however, there are certain conditions under which this does not apply. To what extent do you think it is likely that the following is a condition that would allow a mental health professional to break confidentiality: *If you are at immediate risk of harm to yourself or others*

Very unlikely Unlikely Likely Very Likely

Question 15. Mental health professionals are bound by confidentiality; however, there are certain conditions under which this does not apply. To what extent do you think it is likely that the following is a condition that would allow a mental health professional to break confidentiality: *if your*

problem is not life-threatening and they want to assist others to better support you.

Very unlikely Unlikely Likely Very Likely

Therefore, the new version of this instrument consists of 28 items which contains only four subscales four subscales, assessing (1) *ability to recognize mental disorders* (e.g., "If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, had difficulty controlling this worry and had physical symptoms such as having tense muscles and feeling fatigued then to what extend do you think it is likely they have General Anxiety Disorder?"; 8 items); (2) *Mental health help-seeking/self-efficacy (e.g.*, I am confident that I know where to seek information about mental illness"; 4 items); *(3) four subscales stigma/negative attitudes toward mental illness* (e.g., "If I had a mental illness I would not tell anyone"; 9 items); and (4) *willingness to interact with people with mental illness* (e.g., "How willing would you be to have someone with a mental illness marry into your family?" 7items). The remaining item numbers 1 to 8 were adjusted to the 1-5 Likert scale instead of the 1-4 Likert scale. The five-point scale provided better quality in terms of missing data and higher levels of internal consistency compared to four-point. Items are evaluated using a 5-point Likert scale ranging from 0 ("very unlikely"/ "strongly disagree"/ "definitely unwilling") to 4 ("very likely"/ "strongly agree"/ "definitely willing"). Sub-scale scores were calculated as the mean of all answered items, retaining the 0-4 scale range to increase ease of interpretation. For the sub-scale of recognition, self-efficacy, and willing to interact, higher scores are more positive; for stigma toward mental illness, higher scores indicate a greater stigma toward mental illness. The total score is produced by summing all items, with a maximum score of 140 and a minimum score of 28. In the current study, internal consistency for the full

scale was α = .61 (T1) and α = .72 (T2). For the subscales, internal consistency was: Recognition α = .60 (T1) and α = .66 (T2); Self-efficacy α = .63 (T1) and α = .74 (T2); Negative attitudes / stigma α = .60 (T1) and α = .66 (T2); and Willingness to interact α = .62 (T1) and α = .79 (T2)

The Beliefs toward Mental Illness Scale (Hirai & Clum, 2000) , a 21-item scale is designed to assess negative stereotypical views of mental illness. Response options use a six-point Likert-scale: "completely disagree" (0), "mostly disagree" (1), "partially disagree" (2), "partially agree" (3), "mostly agree" (4) and "completely agree" (5). Scores were calculated as the mean of all included items, retaining the 0-5 scale range which lower scores indicate positive attitudes and high scores indicate negative attitudes toward mental illness. Scale consists of three subscale include (1) dangerousness of individuals with mental illness (e.g., a mental ill person is more likely to harm others than a normal person), 5 items; (2) perceptions that individuals with mental illness have poor interpersonal/ social skills (e.g., I am afraid of what my boss, friends would think if I were diagnosed as having a psychological disorder.); 10 items; and (3) perceptions of the Incurability of mental illness as a chronic, unpredictable condition (e.g., Individuals diagnosed as mental ill will suffer from the symptoms throughout their life); 6 items. Internal consistency for the full scale was α = 81 (T1) and α = .87 (T2). For the subscales, internal consistency was: Dangerousness α = .77 (T1) and α = .84 (T2); Poor social skills α = .53 (T1) and α = .54 (T2); and Incurability α = .54 (T1) and α = .54 (T2).

The Guide Lesson Fidelity Rating includes 15 items designed to assess teacher fidelity to The Guide curriculum in delivering the classroom intervention. Ratings are made by a trained observer using a three-point Likert –scale from 1 = not done, 2 = partially done and 3 = done. The instrument evaluates five sub-domains including *content* (e.g.; follow lesson objectives

listed in the guide), 3-items; *process* (e.g.; follow the sequence of lesson steps), 3-items; *materials* (e.g.; used appropriate teaching materials or provide relevant examples), 2-items; *student acceptance* (e.g.; students participate in discussion), 3-items; and *quality of teaching* (e.g.; teacher understands the concept), 4-items.

The Teacher Survey includes 20 items designed to access teacher satisfaction implementing The Guide in classroom. Response options use a 3-Likert scale from 1 = totally disagree, 2 = somewhat agree and 3 = agree. The instrument consists of three sub-domains including *beliefs*, how teacher views about the MHL program for their classroom implementation (e.g.; this program is feasible to use in my classroom), 7-items; *self-efficacy*, how teachers' competency in delivering the Guide in classroom (e.g.; I use allocated time for activities that maximize learning), 7-items; and *enthusiasm*, accessing how teacher happy with the Guide (e.g.; I enjoy teaching the lesson in MHL), 6-items.

For both of these measures, the total and sub-scale scores were calculated as the mean to retain the original rating scale, with a minimum score 1 and maximum score 3. Internal consistency was not evaluated for these scales given the small sample size for completion.

2.3.3.2. Student Measures

The Mental Health Knowledge and Attitude Test (Kutcher, 2016), a 36-item questionnaire developed to accompany the Mental Health & High School Curriculum Guide: Understanding Mental Health and Mental Illness, Washington State, USA edition. This measure assess **knowledge**, with 28 statements evaluated as true / false / I don't know answer (e.g., "People who have a mental illness are frequently violent"). To more accurately assess knowledge and avoid correct responses by chance, students encouraged to

select “I don’t know” rather than guess if they did not know. Knowledge scores are reported as the proportion correct (range: 0-1), with “I don’t know” considered not correct. Total score is produced by summing all items, maximum score of 28. The remaining eight items in the test assess ***stigma*** (e.g., “A mentally ill person should not be able to vote in an election”), with response options on a 7-point Likert scale ranging from 0 “strongly disagree” to 6 “strongly agree”. Internal consistency was $\alpha = .47$ (T1) and $\alpha = .56$ (T2).

2.3.4. Procedures

Study recruitment. After receiving permission from school director researcher had a chance to participate in staff meeting to introduce himself and the research study to all teachers. The research Informed consent was also given to teachers, and they were asked to return the informed consent with their signature when they agreed to participate in the study. Researcher also made contact with students in grades 7, 8, 10, and 11 to introduce the research study and ask for their participation. The consent for students was obtained through a passive consent process with a letter sent home to the parents, and with students given the option to opt out of data collection. All participants were aware of their right to participate or refuse and how the data is stored. Teachers were informed that their academic careers would not be affected as it was only an exercise for a research purpose. Students also were aware that their decision to participate or not participate would not affect their grade as it was only an exercise for research. Teachers and students knew that their response is kept strictly confidential. Hence, they should be free and honest in answering the questions.

Intervention allocation. Teachers who returned the research informed consent with odd numbers were randomly assigned to control group and even numbers were allocated to intervention group. Purposive sampling

was used to assign students' participation. Students were assigned by grade to avoid contamination while counterbalancing the two groups for developmental differences. Students in 7th and 11th grade classrooms were assigned to receive the intervention, while students in 8th and 10th grade classrooms were assigned to the control condition. Students in grades 9 and 12 were not included in this study as they were preparing for examinations.

Teacher training. Teachers in the intervention group completed the two-day in-person mental health literacy training, with the additional 3rd day of training for the four implementing teachers. All training was led by the researcher and followed the training outline described in section (2.3.2.). Teachers in the control group received no MHL training. Each teacher participant received the translated curriculum guide with the accompanying self-study module. All participants received the equivalent of $5 USD for completing the baseline- and follow-up assessments, $20 for participating in the 2-day training, and $35 for delivering the classroom-based curriculum.

Classroom implementation. Teachers were assigned to implement the classroom curriculum guide, in consultation with the school director, because their classes include English, Library, and Khmer language were classes most easily adjusted to allocate instructional time for the curriculum guide implementation while maintaining adherence the lesson plan of Ministry of Education Youth and Sport requirements. Students at intervention group, 7 and 11 grades received the Guide curriculum delivered by one of the four trained teachers during regular instructional time. In total, 6 weekly sessions, approximately 1 hour per week, were implemented over an eight-week period, with breaks between the third and fifth week due to the school holiday. During implementation, trained research assistants observed the classroom instruction and provided feedback the process of classroom intervention to researchers. The assistants completed the fidelity rating

checklist while observing teachers' implementation, collecting students' post assessment and teacher satisfaction survey. Students in 8 and 10 grades received their standard instruction, but completed baseline and follow-up assessments on the same time as the intervention group. Students in grades 9 and 12 were not included in this study as they were preparing for examinations.

2.3.4.1. Data Collection

All instruments were administered at baseline (T1) and post-intervention (T2). Assessments were administered to both intervention and control groups on the same schedule. Assessment was administered by group format; all participants completed the assessment in the same classroom under supervision by researcher and research assistants. Exception, the guide lesson fidelity rating and teacher survey was used only with intervention teacher at post-test. T1 assessments were administered before the beginning of the teacher training workshop for teachers, and before the beginning of the classroom implementation for students. T2 data collection for both teachers and students took place the week after completion of the full classroom delivery of the MHL curriculum.

2.3.5. Data Analysis

Data analysis for teachers, all data entry, management, and analysis were conducted in SPSS (IBM SPSS Statistics for Windows, 2013). Data was double-entered by two research assistants. Data discrepancies were compared and resolved using the original surveys. We then examined missing values to explore which missing data appeared to be at random. Participant's pre-post data was matched using demographic identifiers as age, sex, teaching experience, teaching subject, educational background, family status, etc.

We then calculated the total scale scores and sub-scale scores by taking the average of all responses; this approach was used to pro-rate missing responses. To evaluate the psychometric properties of each scale, we calculated internal consistency using Cronbach's Alpha separately by timepoint. Item analysis was used to examine potentially problematic items (i.e., items with low item-rest correlation). The conducted item analysis examined psychometric evaluation which was performed through scale reliability analysis that looked at internal consistency based on the average inter-item correlation of each scale. Throughout the cross tabulation, chi-square was used to examine the participant's baseline demographic information.

Aim 1 analyse. To examine the extent to which respondent background (teachers and students) influenced baseline MHL scores on each scale was carried out through a series of Univariate (GLM) models comparing each scale score across a variety of demographic characteristics. The aim was to investigate the baseline characteristics of knowledge, attitudes and mental health beliefs across secondary and high school teachers and students, and whether these baseline scores of teachers are influenced by gender, education and experience, and whether baseline scores of students are influenced by age, sex and grade. Due to sparse data, some variables were recoded for analysis. Teacher Participants reporting high school and lower were recoded as "low education" and participants reported with bachelor degree and higher were recoded as "high education". Teachers who reported up to five years of teaching experiences were recoded as "less experience", and who reported more than five-year experiences were recoded as "more experience". Student participants reporting aged of 15 and under were recoded as "under 16-year-old" and who reported age of over 15-year-old were recoded as "over 15-year-old". Students in grade 7 and 8 were recoded as "secondary school" and

"high school" for students at grade 10 and grade 11. Baseline scale scores were then compared across these variables (sex, age, education, grade, and experiences). Teacher and student demographic characteristics were compared across intervention groups to determine the extent to which groups were comparable at baseline.

Aim 2 analyses. Further analyses of Univariate Analysis of Covariance (ANCOVA) were operated to investigate the change between a) teacher groups; b) student groups by demographics at second timeline. The analysis of main effects, unadjusted and adjusted models was run to investigate whether mental health literacy training increased a) teachers' knowledge, beliefs, behaviours and attitudes; b) students' knowledge and attitudes. Each scale was specified as an outcome in a separate set of models. ANCOVA (unadjusted-model) was conducted to examine a statistically significant difference in a) teacher group on the scale of MHKQ, MHLS, and BMI; b) student group on the scale of Mental Health Knowledge and Attitude Test. Baseline demographics that were significantly different by treatment group were then included in a second, adjusted model.

Aim 3 analyses. To examine the influences of independent variables, we ran a third set of models including interaction terms to examine if the changes were influenced by demographic characteristics. First, we looked at characteristics of a) teacher mental health knowledge, beliefs, and attitudes through scales that include MHKQ, MHLS, and BMI; b) student mental health Knowledge and attitude to see if these scale T1 scores were influenced by participant's demographics. ANCOVA (unadjusted-model) was used to investigate a) teacher demographic characteristics such as independent variable (male vs. female, high education vs. low education, more experience vs. less experience); b) student demographic characteristics like (male vs. female, secondary vs. high school) , whether it influenced the scale T1 score,

dependent variable. Then ANCOVA (adjusted model) was used to look at the improvement of teacher and student knowledge, beliefs, behaviours, and attitudes after the intervention. First, we looked at the change by a) teacher groups at T2 after controlling T1 score; and then added sex, education, position, experience, marital status, religion, and income; b) student groups at T2 after controlling T1 scores; and then added sex, age and grade as adjustment variables to assess for potential differences. ANCOVA (Interaction model) was operated to investigate the interaction effect whether the changes were influenced by participant's demographic characteristics. First, we ran interaction effect between sex and group, whether differences between treatment and control scores at T2 were impacted by sex, while adjusting for the scale T1 score. Then, we run interaction effect between education and group changes depending on education while controlling the scale T1 score. Finally, we ran interaction effect between experience and group changes whether group changes depended on experience of teaching while adjusting the scale T1 score.

Aim 4 analyses. To examine the implementation outcomes based on the Guide Lesson Fidelity Rating and Teacher Survey checklists. It is primarily descriptive. We calculated mean instructional time and fidelity rating scores by lesson and by teacher. We also calculated mean satisfaction scores for each implementing teacher. Because there were only four teacher-classroom pairs, we explored whether teacher fidelity and satisfaction were associated student-level outcomes by using a one-way ANOVA to examine score differences by classroom. We also calculated mean fidelity rating scores (total and by domain) for each lesson to identify potential need for further adaptation or support.

CHAPTER 3

RESULTS

3. Results

The main result of this study is to seek the effectiveness of MHL intervention by usual classroom teachers on students' MHL. In results are covered for two sections in which the first section as described in 3.1. focused on the results of teacher analyses, and the second section in 3.2. described the results of student analyses.

3.1. Results of Teacher Analyses

3.1.1. Demographic Data of Teachers

Seventy-three (n=73) staff participants participated in this current study. Of the 73 participants, thirty-six (n=36) participants were intervention group and thirty-seven (n=37) participants were control group – that was time one (T1). By time two (T2) sixty-seven (n=67) participants remained for this study, six participants missed following up. Out of 36, thirty-four (n=34) remained for intervention group and thirty-three (n=33) remained for control group. Two participants from intervention group (n=2) and four from control group (n=4) failed to provide follow-up data due to reasons unrelated to the study (e.g., no longer working at the school, family leave, etc.).

The majority of participants were female (79%), with a median age of 27 and over half were teaching staff (66%). Just over half had a bachelor (53%) or masters (3%) degree, while others had either a high school (24%) or junior high school (15%) education. Two thirds were teaching staff (66%), with others in administrative or other non-teaching roles.

The mean scores, standard deviation of participant's characteristics was outlined in Table 2.

Table 2. Descriptive statistic summary of participant's background information

Variables	Overall (N=67)	Treatment (n=34)	Control (n=33)	*p-value*
Age (mean ± SD)	28.06 ± 4.99	28.03 ± 4.68	28.09 ± 5.37	0.96
Sex				
Male	14 (20.9%)	11 (32.4%)	3 (9.1%)	0.019
Female	53 (79.1%)	23 (67.6%)	30 (90.1%)	
Education				
Secondary	10 (31.3%)	0	10 (31.3%)	
High school	16 (24.2%)	6 (17.6%)	10 (31.3%)	0.006
Bachelor degree	35 (53%)	25 (73.3%)	10 (31.3%)	
Master degree	2 (3%)	2 (3%)	0	
Other	3 (4.5%)	1 (2.9%)	2 (6.3%)	
Family status				
Married	28 (42.4%)	16 (47.1%)	12 (37.5%)	0.733
Single	38 (54.5%)	17 (50%)	19 (59.4%)	
Separated	2 (3%)	1 (2.9%)	1 (3.1%)	
Experience	5.43 ± 4.282	5.47 ± 4.515	5.35 ± 3.93	0.929
less than 5 years	28 (57.1%)	19 (59.4%)	9 (52.9%)	0.665
5-year/more	21 (42.9%)	13 (40.6%)	8 (47.1%)	
Teachers' status				.000
Teaching staff	44 (65.7%)	30 (88.2%)	11 (42.4%)	
Non-teaching	23 (34.3%)	4 (11.8%)	19 (57.6%)	

Religion				
Buddhism	51 (76.1%)	24 (70.6%)	27 (81.8%)	0.281
Catholic	16 (23.9%)	10 (29.4%)	6 (18.2%)	
Socioeconomic status				
Less $100	7 (10.4%)	0	7 (10.4%)	
$100 - $300	38 (56.7%)	19 (55.9%)	19 (57.6%)	0.022
$300 - $500	17 (25.4%)	11 (32.4%)	6 (18.2%)	
$500 -$700	3 (4.5%)	3 (8.8%)	0	
$700 - 900$	2 (3%)	1 (2.9%)	1. (3%)	

3.1.2. Baseline Scale Scores of Teachers

In response to research question one to determine the baseline measures of MH knowledge, attitudes and beliefs across secondary and high school teachers and hypothesis one that assumed teachers would have low baseline MH knowledge, more negative attitudes and beliefs toward mental illness. This section demonstrated the findings through the measure of MHKQ, MHLS, and BMI regarding the research question and hypothesis.

3.1.2.1. Baseline Scale Scores Between Intervention and Control Groups

The mean scores, standard deviation of T1 were outlined in Table 3. There were no significant differences between groups on any of the baseline scores, all $p > .05$.

Table 3. ANCOVA – Difference participant's T1, mean scores, standard deviation, and p-value by groups

		Intervention		**Control**		
Scale	**F test, for effect of Group**	**N**	**M (SD)**	**N**	**M (SD)**	***p-value***
MHKQ	F (1,64) =.448	34	52.6	33	53.9	.506

			(.078)		(.080)	
MHLS	F (1, 64) = 10.449	34	3.39 (.254)	33	3.19 (.236)	.168
MHLS subscale1 - Recognition	F (1, 64) = 3.205	34	3.76 (.498)	33	3.39 (.427)	.078
MHLS subscale2 - Self-efficacy	F (1, 64) = .010	34	3.61 (.712)	33	3.50 (.612)	.920
MHLS subscale3 - Stigma	F (1, 64) = 1.457	34	3.26 (.403)	33	3.12 (.444)	.232
MHLS subscale4 - Willingness to interact	F (1, 64) = .043	34	3.09 (.406)	33	2.83 (.492)	.837
BMI	F (1, 64) = .628	34	2.38 (.612)	33	2.63 (.592)	.431
BMI subscale1 - Dangerous	F (1, 64) = .287	34	2.75 (.677)	33	2.90 (.791)	.591
BMI subscale2 - Poor skills	F (1, 64) = .536	34	1.85 (.714)	33	2.36 (.707)	.467
BMI subscale3 - Incurable	F (1, 64) = 2.426	34	2.96 (.744)	33	2.87 (.719)	.124

3.1.2.2. Aim 1: Evaluate Baseline MHL Scores by Participant's Demographics

In response to research question one if these baseline measures were influenced by gender, educational background and teacher experience and hypothesis one assumed that baseline measures will vary by gender, level of education, and experience of teaching.

3.1.2.3. Demographic Differences in Baseline Scores

The mean scores, standard deviation, and p-value by sex, education, and experience of scale score T1 were outlined in Table 4 below.

Table 4. ANCOVA-Differences (T1) Mental Health Knowledge Quiz on participants' sex, education, and experiences

	MHKQ		MHLS		BMI	
Variable	M (SD)	95% CI	M (SD)	95% CI	M (SD)	95% CI
Male	0.51 (0.02)	[.46, .55]	3.43 (0.06)	[3.29, 3.56]	2.64 (0.16)	[2.31, 2.97]
Female	0.53 (0.011)	[.517, .56]	3.26 (0.03)	[3.19, 3.33]	2.47 (0.08)	[2.30, 2.63]
High school/lower	0.53 (0.016)	[.50, .57]	3.23 (0.05)	[3.13, 3.33]	2.67 (0.11)	[2.43, 2.91]
Over high school	0.52 (0.013)	[.50, .55]	3.31 (0.04)	[3.23, 3.40]	2.359 (0.10)	[2.16, 2.55]
Experience less than 5-y	0.54 (0.018)	[.50, .57]	3.32 (0.05)	[3.22, 3.42]	2.36 0.12	[2.11, 2.61]
Experience 5-y/more	0.52 (0.01)	[.49, .55]	3.35 (0.05)	[3.23, 3.46]	2.53 (0.14)	[2.23, 2.82]

3.1.2.4. Mental Health Knowledge Quiz

At baseline, female teachers scored an average of 53.9% on the mental health knowledge quiz, compared to an average of 51.0% among male teachers. This difference was not statistically significant [F (1, 65) = 1.508, p = .224]. Teachers with high school education or lower scored an average 53.9% on the mental health knowledge quiz, compare to an average of 52.7% among higher education teachers. This difference was not statistically significant [F (1, 61) = .290, p = .592]. Teachers with less experience (4 years or less) score an average of 54.2% on the mental health knowledge quiz,

compare to an average of 52.6% among teachers with more experience (5 years or more). This difference was not statistically significant [F (1, 47) = .438, p = .511]. Results showed the demographic variables including sex, education and experience did not influence over the mental health knowledge quiz, indicating that the difference of sex (male vs. female), level of education (high vs. low) and experiences (more vs. less) of participants have no impact on teachers' mental health literacy.

3.1.2.5. Mental Health Literacy Scale

At baseline, female teachers scored an average of (M = 3.26, SD = .258), compare to an average score of (M = 3.43, SD = .241) among male teachers. This difference was not statistically significant [F (1, 65) = 4.970, p = .029]. Teachers with higher levels of education scored an average of (M = 3.31, SD = .233), compared to an average score of (M = 3.23, SD = .279) among teachers with lower education. This difference was statistically significant [F (1, 61) = 1.553, p = .217). Teachers with five years or more experience scored an average of (M = 3.35, SD = .237], compare to an average score of (M = 3.32, SD = .279) among teachers with less than five-year experience. The mean difference (B= -.026) there was not statistically significant difference [F (1, 47) = .115, p = .736]. As a result of baseline showed there was statistically significant difference between sex which female teachers had better MHL compare to male teachers, and there was not statistically significant difference between education (lower vs. higher), experiences (less vs. more), indicating that the difference of education and experience was not influenced over the teachers' mental health literacy.

3.1.2.6. Beliefs Toward Mental Illness

At baseline, male teachers scored an average (M = 2.64, SD = .618), compared to an average score of (M = 2.47, SD = .610) among female teachers. The mean difference (B= .174) there was not statistically significant difference [*F* (1, 65) = .893, *p* = .348]. Teachers with higher levels of education scored an average of (M = 2.35, SD = .592), compare to an average score of (M = 2.67, SD = .629) among teachers with lower education. The mean difference (B=.315) there was statistically significant difference [*F* (1, 61) = 4.093, *p* = .047], indicating that level of education was influenced over the beliefs toward mental illness. Teachers with five years or more experience scored an average of (M = 2.53, SD = .713), compared to an average score of (M = 2.36, SD = .630) among teachers with less than five year experience. The mean difference (B= -.167) there was not statistically significant difference [*F* (1, 47) = .755, *p* = .389]. This finding indicated that the difference between sex (male vs. female) and experience (less vs. more) was not influenced over the beliefs toward mental illness.

3.1.2.7. Summary Of Aim 1

Results from baseline measures indicated most notable were relatively poor MH knowledge as evidenced by an average score showing teacher were only able to answer slightly more than half of knowledge questions correctly which intervention group score an average 52.6% and control group score an average 53.9% from maximum score of 100%, low levels of willingness to interact with people with mental illness as evidenced by an average score of MHLS sub-scale (willingness to interact) that intervention group score an average score (M = 3.09) and control group score an average (M = 2.83) and the maximum score of 5 on scale of 0 to 4, and relatively high levels of beliefs about mental illness as more negative perceptions of the

dangerousness and incurability of mental disorders. Examining associations between baseline scale scores and demographics (sex, work experience, and level of education), the only positive association observed was between education and the total BMI score; relative to those with lower education, those with, higher education had a more positive attitude toward mental illness [F (1, 61) = 4.093, p = .047].

3.1.3. Aim 2: Evaluate the Effectiveness of MHL Intervention At T2

In response to research question two to determine whether MHL training increase teachers' MH knowledge, beliefs, and attitudes toward mental illness as measured post training and hypothesis two that assumed MHL training increased teachers' MH knowledge, beliefs and attitudes toward mental illness amongst intervention group compared to control group. This section demonstrated the changes of intervention group compared to control group after receiving MHL intervention.

3.1.3.1. Scale Descriptive

The *F* test, mean scores, standard deviation, and p-value of T2 were outlined in Table 5 below.

Table 5. ANCOVA – Difference participant's T2, mean scores, standard deviation, and p-value by groups

Scale	F test, for effect of Group	Intervention		Control		*p-value*
		N	M (SD)	N	M (SD)	
MHKQ	F (1, 64) = 22.22	34	64.66 (14.49)	33	51.37 (07.02)	< .001
MHLS	F (1, 64) = 27.36	34	3.62 (.33)	33	3.16 (.25)	< .001
BMI	F (1, 64) = 17.68	34	1.88 (.69)	33	2.57 (.70)	< .001

3.1.3.2. Mental Health Knowledge Quiz

After controlling for T1 score, the ANCOVA showed the intervention group score an average of 64.66% on the scale of mental health knowledge quiz, compare to an average score of 51.37% among control group. The mean difference (B =.13.3%) there was a statistically significant difference [F (1, 64) = 22.22, $p < .001$], indicating that the intervention was effective in increasing teachers' knowledge of mental health. We also run a second, fully adjusted-model to account for the potential influence of statistically significant baseline differences between the treatment and control groups on some demographic variables. This analysis showed that the treatment effect changes after adjusting for sex, level of education, teacher status, and income [F (1, 37) = 8.450, p = .006], indicating that these variables have influence over teachers' mental health knowledge quiz.

3.1.3.3. Mental Health Literacy Scale

We examine whether there was a statistically significant difference between treatment and control groups on the mental health literacy score at follow-up, adjusting for baseline scores. After controlling for T1 score (MHLS), the ANCOVA showed intervention group score an average of (M = 3.62, SD = .33) on the scale of mental health literacy, compare to an average score of (M = 3.16, SD = .25) among control group. The mean difference (B=.40) there was statistically significant difference [F (1, 64) = 27.36, $p <$ .001], indicating that the intervention was effective in increasing mental health literacy. We also ran a second, fully adjusted-model to account for the potential influence of statistically significant baseline differences between the treatment and control groups on some demographic variables. This analysis showed that the treatment effect remained after adjusting for sex, level of

education, teacher status, experiences, and income [F (1, 37) = 18.10, p < .001], indicating that these variables have influence over teachers' mental health literacy.

3.1.3.4. Beliefs Toward Mental Illness

We examine whether there was a statistically significant difference between treatment and control groups on the beliefs toward mental illness scores at follow-up, adjusting for baseline scores. After controlling for T1 score (BMI), the ANCOVA showed intervention group score an average (M = 1.88, SD = .69) on the beliefs toward mental illness, compare to an average score of (M = 2.57, SD = .70) among control group. The mean difference (B=-.55) there was statistically significant difference [F (1, 64) = 17.68, p<.001], indicating that the intervention was effective in reducing teachers' negative beliefs toward mental illness. We also ran a second, fully adjusted-model to account for the potential influence of statistically significant baseline differences between the treatment and control groups on some demographic variables. This analysis showed that the treatment effect remained after adjusting for sex, level of education, teacher status, experience, and income [F (1, 37) = 9.61, p = .004], indicating that these variables have influence teachers' beliefs toward mental illness.

3.1.3.5. Scale Descriptive for Subscale Measures

The difference F-test, mean scores, standard deviation of MHLS subscale and BMI subscale by intervention group were outlined in Table 6 below.

Table 6. Results of inferential analyses T2 between Intervention and Control Group

Dependent variable	***F* test, for effect of Group**	**ES[1]**	**Adjusted[2] Mean (SD) Tx**	**Adjusted[2] Mean (SD) Cntl**
Recognition	$F(1,64)=5.17^{*}$	$R^2=.07$	2.71 (.51)	2.45 (.38)
Self-efficacy	$F(1,64)=5.09^{*}$	$R^2=.07$	2.71 (.72)	2.33 (.64)
Stigma	$F(1,64)=6.24^{*}$	$R^2=.09$	1.46 (.64)	1.85 (.62)
Willingness to interact	$F(1,64)=30.00^{****}$	$R^2=.27$	2.47 (.39)	1.85 (.49)
Dangerous	$F(1,64)=17.47^{****}$	$R^2=.19$	2.01 (.97)	2.89 (.71)
Poor skills	$F(1,64)=8.99^{**}$	$R^2=.08$	1.57 (.67)	2.06 (.56)
Incurable	$F(1,64)=7.91^{**}$	$R^2=.09$	2.53 (.58)	2.93 (.56)

Notes: [1]=effect size is semi-partial eta-squared, controlling for T1 dependent variable. Means are adjusted for T1 scores
*=p<.05, **=p<.01, ***=p<.001, ****=p<.0001

3.1.3.6. Subscale of MHLS

All four dependent variables from the Mental Health Literacy Scale were significantly different between the two groups at follow-up, with Recognition [F (1, 64) = 5.17, p <.05], Self-efficacy in help-seeking [F (1,64)=5.09, p<.05], Stigma [F(1,64)=6.24, p <.05], and Willingness to Interact [F (1,64) = 30.00, p <.0001]. In all instances, results favored the experimental group, with higher levels of recognition, self-efficacy, and willingness to interact, and lower levels of stigma (see Table 5).

3.1.3.7. Subscale of BMI

The BMI for all three subscales showed significant Group effects, with Dangerousness [F (1, 64) =17.47, p <.0001], Poor skills [F (1, 64) =8.99, p <0.005], and Incurable [F (1, 64) =7.91, p<0.01]. All effects favored the experimental group, which showed lower levels of all variables at follow-up.

3.1.4. Aim 3: Evaluate the Effectiveness of MHL Intervention Moderated by Participant's Demographics

In response to research question three to determine the changes in teachers' MH knowledge, beliefs and attitudes influenced by the variables of gender, education and experience of teaching and hypothesis three assumed that demographic characteristics such as gender, education and experience of teaching will affect teachers' responses to MHL training. This section demonstrated the changes after MHL intervention in relation to these *variables based on three (MHKQ, MHLS, and BMI).*

3.1.4.1. Mental Health Knowledge Quiz

We looked at the interaction between sex of teacher and groups whether the impact of the intervention was different by sex, while adjusting for the T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 62) = 12.107, p = .001]. There was not statistically significant neither main effect of sex [F (1, 62) = 2.850, p = .096] nor a sex-by-group interaction effect [F (1, 62) = .159, p = .691].

We also looked at the interaction between teachers' education and groups whether the impact of the intervention was different by education, while adjusting T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 58) = 12.556, p = .001]. There was not statistically significant neither main effect of education [F (1, 58) = .473, p = .494], nor education-by-group interaction effect [F (1, 58) = .568, p = .454].

Adjusted-model was also used to examine the interaction between teachers' experience and groups whether the impact of the intervention was different by experience, while adjusting for the T1 score. ANCOVA showed the main effect of group was statistically significant [F (1, 44) = 11.766, p=.001]. There was not statistically significant neither main effect of

experience [F (1, 44) = 2.336, p = .134] nor experience-by-group interaction effect [F (1, 44) = .270, p = .606]. This finding revealed that sex, education and experience has no influenced over intervention on teachers' mental health knowledge quiz.

3.1.4.2. Mental Health Literacy Scale

We looked at the interaction between sex of teachers and groups whether the impact of the intervention was different by sex, while adjusting for the T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 62) = 13.187, p = .001]. There was not statistically significant neither the main effect of sex [F (1, 62) = .068, p = .795] nor sex-by-group interaction effect [F (1, 62) = .005, p = .945].

The interaction effect between teachers' education and groups was also examined whether the impact of the intervention was different by education, while adjusting for the T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 58) = 12.259, p = .001]. There was not statistically significant neither the main effect of education [F (1, 58) = .174, p = .678], or education-by-group interaction effect [F (1, 58) = 1.916, p = .172].

We also looked at the interaction between teachers' experience and groups whether the impact of the intervention was different by experience, while adjusting for the T1 score. ANCOVA showed the main effect of groups was significant [F (1, 44) = 27.790, p < .001]. There was not statistically significant neither the main effect of experience [F (1, 44) = .008, p = .928], nor experience-by-group interaction effect [F (1, 44) = .401, p = .530]. This finding indicated that sex, education and experience has no influenced over intervention on scale of scale of mental health literacy.

3.1.4.3. Beliefs Toward Mental Illness

We looked at the interaction between sex of teachers and groups whether the impact of intervention was different by sex, while adjusting for the T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 62) = 5.915, p = .018]. There was not statistically significant neither the main effect of sex [F (1, 62) = .007, p = .933] nor sex-by-group interaction effect [F (1, 62) = 24.938, p = .742].

The interaction effect between teachers' education and groups was also examined whether the impact of the intervention was different by education, while controlling for the T1 score. ANCOVA showed the main effect of groups was significant [F (1, 58) = 13.124, p = .001]. There was not statistically significant neither the main effect of education [F (1, 58) = 1.083, p = .302], nor education-by-group interaction effect [F (1, 62) = .024, p = .877].

We also examined the interaction between teachers' experience and groups whether experience moderated the treatment effect, while adjusting the T1 score. ANCOVA showed the main effect of groups was significant [F (1, 44) = 10.424, p = .002]. There was not statistically significant neither the main effect of experience [F (1, 44) = .028, p = .868] nor the experience-by-group interaction effect [F (1, 44) = .257, p = .615]. This finding indicated that sex, education and experience has no influenced over intervention on scale of beliefs toward mental illness.

3.2. Results of Student Analyses

In response to research question four to determine the baseline measures of students' MH knowledge and attitudes across students in High school (grade 7, 8, 10, and 11) and hypothesis four assumed that students will

have low baseline mental health knowledge, more negative attitudes, and their knowledge; attitudes.

3.2.1. Demographic Data of Students

Students (N = 275) who are studying at one Catholic High School (grade 7, 8, 10, & 11) were invited to participate in the current study. Out of 275 which intervention group 52.7% (*n* = 145) and control group 47.3% (*n* = 130). The majority of participants were female 61. 5% (*n* = 169), male 37.8% (*n* = 104), correspondents did not indicate their sex 0.7% (*n* = 2). Age ranges from 13 to 22 (M = 15.48). Out of 275, grade 7 (25.8%, *n* = 71), grade 8 (24.7%, *n* = 68), grade 10 (22.5%, *n* = 62), and grade 11 (26.9%, *n* = 74) and

Table 7 below was outlined the mean, standard deviation, *p*-value demographic of participants (age, sex, and education).

Table 7. Distribution of participant' age, sex, and grade between treatment and control groups

	Overall (*N* = 275)	Treatment (*n* = 145)	Control (*n* = 130)	*p-value*
Age (*Mean* ± *SD*)	15.48 (SD = 1.99)	15.58 (SD = .199)	15.37 (SD = 1.42)	*p* <.001
15 and under	137 (49.8%)	70 (48.3%)	67 (51.5%)	
16 and over	138 (50.2%	75 (51.7%)	63 (48.5%)	p = .589
Sex				
Male	104 (38.1%)	60 (41.4%)	85 (58.6%)	*p* = .234
Female	169 (61.9%)	44 (34.4%)	84 (65.6%)	
Education				
Grade 7	71 (25.8%)	71 (49%)	0	*p* < .001
Grade 8	68 (24.7%)	0	68 (52.3%)	

Grade 10	62 (22.5%)	0	62 (47.7%)	
Grade 11	74 (26.9%)	71 (51%)	0	
Grade 7-8 (Low)	139 (50.5%)	71 (49%)	68 (52.3%)	$p < .580$
Grade 10-11 (High)	136 (49.5%)	74 (51%)	62 47.7%)	

3.2.2. Scale Descriptive

The mean scores and standard deviation by timepoint were outlined in Table 8. This shows that at baseline, control and intervention groups did not differ on scale scores.

Table 8. ANCOVA – difference participant's T1, F test, mean scores, standard deviation, and p-value by groups

		Intervention		Control		
Scales	F test, for effect of group	N	M (SD)	N	M (SD)	*p-value*
MHL - Knowledge	F (1,272) =.005	145	53.68 (.09)	130	53.03 (.09)	=.946
MHL - Stigma	F (1,272) =.579	145	3.94 (.68)	130	3.90 (.85)	=.447

Notes. Student – MHL Knowledge is proportion correct. Range of the Student – Stigma scale is 0 ("strongly disagree") to 6 ("strongly agree").

3.2.2.1. MHL - Knowledge

At baseline, treatment group score an average of (M=53.68, SD=.09) on the MHL knowledge, compare to an average score of (M=53.03, SD=.09)

among control group. The difference was not statistically significant [*F* (1,272) =.005, *p*=.946].

3.2.2.2. MHL – Ktigma

Treatment group score an average of (M=3.94, SD=.68) on the MHL-stigma scale, compare to an average score of (M=3.90, SD=.85) among control group. The difference was not statistically significant [*F* (1,272) =.579, *p* =.447].

3.2.3. Aim 1: Evaluate Baseline MHL Scores by Participant's Demographics

In response to research question four to determine whether these baseline measures influenced by age, sex, and grad and hypothesis four assumed that baseline measures were influenced by age, sex, and grad of participants. This section demonstrated the if participant's demographics have influenced over the knowledge and attitudes of participants toward mental illness.

3.2.3.1. Scale Descriptive

The measure T1, mean scores, standard error, and 95% confidence interval by age, sex and grade were outlined in Table 9 below.

Table 9. ANCOVA-differences (T1) knowledge and attitudes on participants' age, sex, and grade

	Knowledge		Attitudes	
Variable	M (SD)	95% CI	M (SD)	95% CI
15-y/under	.524 (.008)	[.509, .539]	3.749 (.064)	[3.622, 3.876]
Over 15 years	.544(.008)	[.528, .559]	4.102 (.064)	[3.976, 4.228]

Male	.525(.009)	[.508, .542]	3.892 (.076)	[3.743, 4.041]
Female	.541(.007)	[.527, .554]	3.943 (.059)	[3.826, 4.060]
Grade 7-8	.526(.008)	[.511, .541]	3.726 (.063)	[3.602, 3.851]
Grade 10-11	.542(.008)	[.526, .557]	4.130 (.064)	[4.004, 4.256]

3.2.3.2. Knowledge and Attitudes by Age

We looked at the baseline measures whether baseline score (T1) of mental health knowledge and attitudes toward mental illness is varied by age. Univariate analysis of variance showed that students age 15 and under had an average score of 52.4% and student over age 15 had an average score of 54.3%. The mean difference (B = -.020) there was not statistically significant difference [F (1, 273) = 3.324, p = .069], indicating that age of correspondent has no influence over the knowledge of mental health. Attitudes, ANCOVA showed that students age 15 and under had an average score of (M = 3.74, SD = .787) and student over age 15 had an average score of (M = 4.10, SD = .718). 54.3%. The mean difference (B = -.353) there was statistically significant difference [F (1, 273) = 15.099, p < .001], indicating that age of correspondent has influence over the attitudes toward mental illness.

3.2.3.3. Knowledge and Attitudes by Sex

We also looked at the baseline measures whether baseline score (T1) of mental health knowledge and attitudes toward mental illness is varied by sex. ANCOVA female students score an average of (54.07%), compare to an average score of (52.50%) among male students. The mean difference (B = -.016) there was not statistically significant difference [F (1, 271) = 1.938, p = .165], indicating that sex has no influence over the mental health knowledge.

Attitude's scale was also examined, ANCOVA showed female students score an average of (M = 3.94, SD = .059), compare to an average score of (M = 3.89, SD = .076) among male students. The mean difference (B = -.051) there was not statistically significant difference [*F* (1, 271) = .280, *p* = .597], indicating that sex has no influence over the attitudes toward mental illness.

3.2.3.4. Knowledge and Attitudes by Grade

We looked at grade of students on mental health knowledge T1 scores whether the effect of mental health knowledge and attitudes scales were influenced by grade. Grade was computed into two groups (grade 7 and 8 as secondary school (n = 139), and grade 10 and 11 as high school (n = 136)). ANCOVA showed a lower secondary school score an average of (M =.526, SD = .008), compare to an average score (M = .542, SD = .008). The mean difference (B = -.015). There was not statistically significant difference [*F* (1, 273) = 1.987, *p* = .160], indicating that grade has no influence over the mental health knowledge. The effect of attitudes scale was examined whether it was influenced by grade. A one-way ANCOVA showed higher secondary school student score an average of (M = 4.130, SD = .064), compare to an average score (M = 3.726, SD = .063) among lower secondary school students. The mean difference (B=-.404) there was statistically significant difference [*F* (1, 273) = 20.079, *p* < .001], indicating that grade have influence over attitudes toward mental illness.

3.2.4. Aim 2: Evaluate the Effectiveness of MHL Intervention at T2

In response to research question five to determine whether MHL that taught by teachers 1h/week and 6h for six weeks lead to an increase in students' MH knowledge and attitudes? and hypothesis five assumed that

MHL intervention for students' increase MH knowledge and attitudes toward mental illness compared to students in the control condition.

3.2.4.1. Scale Descriptive

The difference *F*-test, mean scores, standard deviation, *p*-value T1 and T2 by groups were outlined in Table 10 below.

Table 10. ANCOVA – difference participant's T1 & T2, F-test, mean scores, standard deviation, and p-value by groups

			Intervention		Control		
Scale	Time point	F test, for effect of Group	N	M (SD)	N	M (SD)	*p-value*
MHL - Knowledge	T1	F (1,272) =.005	145	53.68 (.09)	130	53.03 (.09)	=.946
	T2	F (1,272) =32.570	145	56.98 (.09)	130	50.57 (.08)	=.000
MHL - Stigma	T1	F (1,272) =.579	145	3.94 (.68)	130	3.90 (.85)	=.447
	T2	F (1,272) =41.528	145	4.60 (.84)	130	3.98 (.76)	=.000

Notes: Student – MH Knowledge is proportion correct. Range of the Student – Stigma scale is 0 ("strongly disagree") to 6 ("strongly agree").

3.2.4.2. Knowledge and Attitudes

We looked at the effect of the mental health knowledge T2 score between groups whether the intervention was effective in increasing mental health knowledge while adjusting for the T1 score. A one-way analysis of

covariance (ANCOVA) showed the intervention group scores an average of (56.98%), compare to an average score of (50.57%) among control group. Intervention group had higher mental health knowledge score than control group (B = .06). The difference was statistically significant [*F* (1, 272) = 32.570, $p < .001$], indicating that the intervention was effective in increasing the students' mental health knowledge.

We also looked at the attitudes T2 score between groups whether the intervention was effective in increasing positive attitudes toward mental illness. After adjusting T1 score, the analyses of ANCOVA showed that intervention group had higher score (M = 4.60, SD = .84) than control group (M = 3.98, SD = .76). The mean difference (B =.61) the difference was statistically significant [*F* (1, 272) = 41.528, $p <.001$], indicating that the intervention was effective to decrease students' negative attitudes toward mental illness.

3.2.4.3. Scale Descriptive ANCOVA Fully Adjusted-Model

The differences *F-test*, mean scores, *p*-value T2 by groups were outlined in Table 11 below.

Table 11. Participants T2 of knowledge and attitudes on adjusted-model between groups and sex, age, grade

	Attitudes			Knowledge		
Variables	M	F	p-value	M	F	p-value
Sex	8.636	14.440	.000	.095	11.898	.001
Age	1.078	1.803	.180	.009	1.092	.297
Grade	2.034	3.402	.066	.000	.047	.829
Group	29.405	49.168	.000	.306	38.531	.000

We also run a second, fully adjusted-model to account for the potential influence of statistically significant baseline differences between the treatment and control groups on some demographic variables. This analysis showed that the intervention effect remained for the attitudes after adjusting for sex, age, and grade [F (1, 267) = 49.168, p <.001] and sex has significant difference (p =.001) but age and grade were not statistically significant (p >.005). Knowledge also remained after adjusting for sex, age, and grade [F (1, 267) =38.531, p <.001] and sex has significant difference (p =.001) but age and grade were not statistically significant (p >.005).

3.2.5. Aim 3: Evaluate the Effectiveness of Intervention Moderated by Participant's Demographic Characteristics

In response to research question six to determine the changes in students' MH knowledge and attitudes influenced by age, gender and education (grade) and the hypothesis six assumed that demographic data such as age, gender and education (grade) affect students' responses to MHL intervention; therefore, the analyses was to evaluate the effectiveness of MHL intervention in relation to demographic information.

3.2.5.1. Scale Descriptive

The difference of mean score, *F-test* and *p*-value were outlined in Table 12 below.

Table 12. ANCOVA - The difference interaction effect students' knowledge and attitudes T2 by sex, age, and grade

Scales	Variable	Mean Square	F	*p-value*
Interaction by Sex - Knowledge	Group	0.234	30.051	*.000*
	Sex	0.088	11.259	*0.001*

	Sex and Group	0.057	7.316	*0.007*
Interaction by Sex - Attitudes	Group	25.104	41.467	*.000*
	Sex	7.475	12.348	*0.001*
	Sex and Group	0.605	0.999	*0.319*
Interaction by Age - Knowledge	Group	0.268	32.156	*.000*
	Age	0.04	4.85	*0.028*
	Age and Group	0	0.023	*0.881*
Interaction by Age - Attitudes	Group	26.41	41.774	*.000*
	Age	0.481	0.761	*0.384*
	Age and Group	0.39	0.617	*0.433*
Interaction by Grade - Knowledge	Group	0.268	32.044	*.000*
	Grade	0.038	4.574	*0.033*
	Grade and Group	0.001	0.098	*0.755*
Interaction by Grade - Attitudes	Group	26.437	41.936	*.000*
	Grade	1.143	1.813	*0.179*
	Grade and Group	0.192	0.305	*0.581*

3.2.5.2. Knowledge and Attitudes by Sex

We looked at the interaction between sex of correspond and groups whether the impact of intervention was different by sex, while adjusting for the T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 268) = 30.051, p <.001]. There was statistically significant neither the main effect of sex [F (1, 268) = 11.259, p =.001] nor the main sex-by-group interaction effect [F (1, 268) = 7.316, p =.007]. Attitudes, ANCOVA showed the main effect of groups was statistically significant [F (1, 268) = 41.467, p <.001]. The main effect of sex was statistically significant [F (1, 268) = 12.348, p =.001] but sex-by-group interaction effect not statistically significant [F (1, 268) = .999, p =.319].

3.2.5.3. Knowledge and Attitudes by Age

We looked the interaction between grade of correspondent and groups whether the impact of intervention was different by grade, while controlling for the T1 score. ANCOVA showed the main effect of groups was statistically significant [F (1, 270) = 32.156, p <.001]. The main effect of grade was statistically significant [F (1, 270) = 4.850, p =.028) but age-by-group interaction effect not statistically significant [F (1, 270) = .023, p = .881], indicating that the intervention was not influenced by age. We also looked at the interaction between age of correspondent and groups whether the age moderated the T2 score. Univariate analysis of variance (ANCOVA) showed that the main effect of groups was statistically significant [F (1, 270) = 41.774, p < .001]. There was not statistically significant neither the main effect of age [F (1, 270) = .761, p = .384] nor age-by-group interaction effect [F (1, 270) = .167, p = .433], indicating that the interaction was not influenced by age.

3.2.5.4. Knowledge and Attitudes by Grade

We looked at the interaction between grade of students and groups whether groups change depending on the grade while controlling for the mental health knowledge and attitudes T1 scores. ANCOVA showed that higher secondary school students score an average of (55%), compare to an average score of (52.6%) among lower secondary school students. Higher secondary school students score higher than lower secondary school students (B=.024). Intervention group had higher mental health knowledge T2 scores (M = .569) than control group (M = .507). The mean difference (B=.063) there was not statistically significant difference [F (1, 270) = .098, p =.755], indicating that intervention was not influenced by grade level. Attitudes, lower secondary school students score an average of (M = 4.36), compare to

an average score of (4.22) among control group. Lower grade students score higher than higher grade students (B=.134). Intervention group had higher on attitudes T2 score (M = 4.60) than control group (M = 3.98). The mean difference (B=.622) there was not statistically significant difference [*F* (1, 270) = .305, *p* =.581], indicating that intervention was not influenced by grade level.

3.2.6. Exploratory Results of Aim 4: Evaluate Feasibility and Acceptability of The Guide-VN as Adapted

In response to research question seven to determine Is the Guide-VN culturally feasible and acceptable to Cambodian classroom context and hypothesis seven assumed that The Guide-VN MHL intervention will be feasible and acceptable for Cambodian teacher implementation. This section, the guide teacher survey and the guide lesion fidelity checklist, analyzed the effectiveness of MHL intervention by usual classroom teachers and students' improvement of knowledge and attitudes toward mental illness based on the students' knowledge and stigma/attitudes measures.

3.2.6.1. Implementation Outcomes

Instructional time. All teachers spent a similar amount of time, on average, delivering the lessons. Individual teacher averages ranged from 56 minutes to 62 minutes per lesson. However, whereas all other lessons took an average of 51 to 57 minutes to deliver, Lesson 3 (Information on Specific Mental Illnesses) took an average of 88 minutes. This was consistent with teacher reports that they needed more time to cover this module due to the extensive information presented.

Fidelity. Mean fidelity by session was generally high with a combined mean of 2.55 across sessions, ranging from a low of 2.45 in Lesson 5

(Seeking Help and Finding Support) to a high of 2.65 in Lesson 6 (Positive Mental Health). Notably, examining the 24-individual time-fidelity records, there appeared to be no correlation between time spent and fidelity (r = -.03).

Table 13 similarly displays no relationship when looking at classroom averages.

Table 13. A summary of fidelity, teacher survey, and students' knowledge and attitudes mean scores

	Class-A	Class-B	Class-C	Class-D	Combined
Average Instructional Time	60.83	62	62	57.17	60.63
Average Fidelity Score	2.62	2.11	2.62	2.86	2.55
Content	2.83	2.17	2.67	3.00	2.67
Process	2.76	2.17	2.67	2.89	2.60
Materials	2.58	2.08	2.67	2.92	2.56
Acceptance	2.61	2.00	2.17	2.61	2.35
Quality	2.46	2.13	2.88	2.88	2.58
Teacher Satisfaction	2.75	2.60	2.45	2.60	2.60
Beliefs	2.42	2.28	2.42	2.42	2.39
Self-Efficacy	2.85	2.57	2.42	2.57	2.60
Enthusiasm	3.00	3.00	2.50	2.83	2.83
Classroom Knowledge	0.567	0.592	0.556	0.562	0.56
Classroom Attitudes	4.35	4.68	4.41	4.96	4.61

We did observe variation in fidelity between teachers, with average fidelity scores ranging from a low of 2.11 to a high of 2.86. Given this variation, we also examined whether there was classroom variation in student outcomes. Post-hoc analyses did show that Classroom "D" had significantly higher Knowledge scores than all other classrooms (all $p<.01$), the rest of which did not significantly differ from each other. Classroom B had

significantly higher (i.e., worse) Attitude scores (all $p<.01$) than all other classrooms, while Classroom "D" also had significantly ($p<.01$) higher Attitude scores than Classrooms "A" and "C" (which did not differ from each other). Comparing these scores with classroom average instructional time and fidelity score, we see no clear pattern of association (Table 1).

We also examined fidelity sub-domain, including content (M = 2.67, range: low-high), process (M = 2.60, range: low-high), materials (M = 2.56, range: low-high), students' acceptance (M = 2.35, range: low-high), and quality (M = 2.58, range: low-high).

Teacher satisfaction. Implementing teachers reported generally high satisfaction with the program, with an average satisfaction score of M = 2.60 (range: 2.45 - 2.75). Teachers reported higher satisfaction related to enthusiasm (M=2.83, range: 2.5-3) and self-efficacy (M= 2.60, range: 2.43-2.6), with lower satisfaction regarding beliefs about classroom implementation (M= 2.39, range: 2.29-2.43).

3.3. Discussion

Knowledge, attitudes and beliefs about mental illness plays an important role in early identification and referral of children in need of support. In this regard, this preliminary study was conducted to investigate the knowledge, attitudes and beliefs and to assess the feasibility of a mental health literacy program, The Guide,(Kutcher, 2016), on knowledge, beliefs and attitudes among teachers and students in Cambodia. Findings suggest that with limited adaptations to the original curriculum guide, a 2-day teacher mental health literacy training followed by teacher-led classroom implementation can improve teacher and student mental health literacy (i.e. knowledge, beliefs, and attitudes). This demonstrates the potential of sustainable approach aimed at training educators on the low-cost application

and teacher-optimized resource and embedding the mental health literacy program into existing standard curriculum in classroom.

To our knowledge, this is the first study assessing teacher and student mental health literacy in Cambodia.

Hypothesis 1&4: It was assumed teachers and students will have low baseline MH knowledge, more negative attitudes and beliefs toward mental illness and these will vary by participant's demographic information. The results found are in response to this hypothesis, baseline results demonstrated that both teachers and students have limited knowledge, prejudiced perceptions and negative attitudes about mental illness. Prior to intervention, the finding showed there were no significant difference between intervention and control groups on any of the basline scores ($p > .05$). Demographic variables (sex, education, experience of teaching) have no impact on the teachers' MH knoweldge and attitudes but education has influence over the beliefs of teachers and students toward mental illness. Baseline result showed consistent finding between teachers and students, higher education teachers and students' grade had less negative beliefs and attitudes toward mental illness. Knowledge might be one of important factors to decrease stigma. As the previous report showed the public has very limited knowledge about mental health(TPO Cambodia, 2015). Culture might also be another main contributing factor to stigma around mental illness. Living in a culture that was mixed with various religious beliefs might bring more stigmatizing beliefs and attitudes. Khmer believe in Buddhist-Hindu beliefs, beliefs in spirits, luck and astrology, and emphasis on the connection between physical and mental health; help-seeking through the medical system often only occurs when traditional methods are unsuccessful in addressing the problem (Schunert et al., 2012).

Our first findings are consistent with prior research in Vietnam using the same instruments, which showed Vietnamese teachers had poor knowledge of mental health problems (Dang et al., 2018). Previous studies have also showed teachers had difficulty to identify and distinguish the severity of mental disorders, which reflects poor mental health literacy among teachers (Deborah Oyine Aluh et al., 2018; Mendonsa, R. D. Shihabuddeen, 2013). Further, research across multiple settings such as United States, Canada, Malaysia and Nigeria have all demonstrated a need to improve students' knowledge, awareness, recognition, and stigma as well (Mcluckie et al., 2014; Mustafa et al., 2015; Omi Jack ide et al., 2016; Wahl et al., 2012). These current findings provide critical information about mental health literacy challenges in a context that receives little attention on the mental health care system, and where the low mental health literacy creates substaintial barries to mental health care (McLaughlin & Wickeri, 2012; TPO Cambodia, 2015).

Hypothesis 2 & 5: It was assumed that mental health literacy training will increase teachers and students' MH knowledge, beliefs and attitudes toward mental illness amongst intervention group compared to control group. Our second finding of this current study confirms the mental health literacy program -The Guide was effective at increasing teachers and students' mental health literacy (knowledge, beliefs, and attitudes). The finding was supported by previous literature that underpinned the effectiveness of mental health literacy programs for training teachers and MHL program that taught by usual classroom teachers has positive impact on students' MH knowledge and attitudes toward mental illness (Kutcher, Wei, & Morgan, 2015; Ojio et al., 2016).

Hypothesis 3 & 6: It was assumed that demographic characteristics such as gender, education and experience of teaching would affect teachers'

responses to MHL training. The findings also demonstrated participant's demographic including sex, education, occupation status, experience, and income have no influence over MH knowledge, attitudes, and beliefs toward mental illness. The largest effects for teachers were reported on the scales measuring willingness to interact with people with mental illness and perceptions of dangerousness. We posit two explanations for this. First, greater understanding about mental illness (i.e., the cause and effect) might increase empathy toward people experiencing mental disorder. Specifically, providing a bio-psycho-social framework that includes a medical explanation of mental illness as a brain or neurobiological disease may reduce perceptions of a spiritual cause of mental illness that implies something evil or something brings upon oneself by bad action. Prior research has also shown that people who view mental illness as a medical condition tend to hold less stigmatizing attitudes than people who viewed mental illness through neurobiological explanation or brain condition (Lebowitz & Ahn, 2014; Loughman & Haslam, 2018). Second, both willingness to interact and perceptions of dangerousness may be linked to fear: fear either of social or spiritual contamination, or fear of direct physical harm. Both increased understanding of the cause of mental illness and increased awareness that most mentally ill people are not dangerous should decrease fear and increase willingness to interact.

Student - it is assumed that demographic characteristics such as age, sex, and grade would affect students' response to MHL training. The findings indicated participant's age and grade have no influence over knowledge and attitudes, but sex was significant or influence over knowledge ($p = .007$). This finding was also consistent with previous studies that sex was influenced over mental health knowledge and attitudes, mental health attitudes of males was significantly lower than females (H. Y. Lee et al., 2020); males displayed poorer mental health literacy skills compared to females. Males were unlikely

to correctly identify problems, more likely to rate symptoms as less serious, to perceive the individual as having greater personal control over such symptoms, and less likely to endorse the need for treatment of mental illness (Gibbons et al., 2015). The difference by sex, girls are more likely to perceive more knowledge than boys, may be a number of reasons. One possible explanation for this finding is that females may be inherently more psychologically minded, introspective, and emotionally aware, thus increasing the likelihood that they (a) more active and participate in MHL classroom intervention, (b) engage in conversation with teachers and peers relating to emotional and psychological difficulties, (c) access to mental health literacy materials and/or (d) have contact or interact with individuals who have a mental illness. To the best of our knowledge, most generally the public have more stigmatizing attitude because they perceived inaccurate information about mental illness, and promoting accurate information about mental illess could reduce stigma, prejudice, and increase their positive interaction with people with mental illness. These findings of smaller effects in other domains do, however, highlight areas to focus on in further refinement of The Guide.

Hypothesis 7: The Guide-VN MHL intervention will be feasible and acceptable for Cambodian teacher implementation. Likewise, although we observed statistically significant effects at the student level, their low scores – particularly in knowledge – indicate room for additional improvement. These findings are not atypical; a previous study of The Guide reported about 14% improvement among students receiving the intervention (Mcluckie et al., 2014), compared to about 12% in the current study. Although literature supports teacher MHL training as a good strategy to promote children mental health care in school system (Mcluckie et al., 2014) its effectiveness may vary based on the methodology and actual context (Kutcher, Wei, McLuckie, & Bullock, 2013; Kutcher, Bagnell, & Wei, 2015; Mcluckie, Kutcher, Wei, &

Weaver, 2014; Wei, Kutcher, Hines, & MacKay, 2014). Potential factors affecting student outcomes in the current study may include both implementation factors and cultural/contextual fit. Below we discuss a number of these potential factors.

Cascading training model. This program was implemented by general education teachers who received a 3-day training, which included only one day of implementation (train-the-trainers) training. This level of training, although a direct carry-over from the North American curriculum, may be insufficient to prepare relatively inexperienced Cambodian teachers to deliver the mental health lesson to students. We observed during the teacher training a gap in knowledge of mental health literacy in general (manifested also in their pre-post Quiz scores) and skills to deliver classroom curriculum. Teachers had difficulty understanding the conceptual framework to deliver the classroom curriculum. Even in Canada, previous study has found that teachers needed more preparation when working with mental issue (A. L. Andrews, 2012). Other studies in Canada and Haiti also emphasized the necessity to extending the duration and number of training sessions to get better outcome of the training (Eustache et al., 2017; Kutcher, Gilberds, Udedi, et al., 2015). Teachers also reported feeling stressed and lacking confidence, in need extra support from the trainer besides the training for their preparation and delivery classroom curriculum. This concern has been observed elsewhere as well (Daniszewski, 2013; Udoba, 2014). We believe providing additional supports like continuing professional development, supervision or consultation would improve both teacher and student outcomes. This is consistent with literature that suggests supervision is necessary to lead to behavioral change for learning and teaching processes (Evans et al., 2017; Kikegbusi, Gloria & Eziamaka, 2016). Similar findings

among Canadian teachers have also showed that supervision was important during delivering curriculum in classroom (Daniszewski, 2013).

Dose. Beyond the dosage issues described for the teachers above, one hour per week may be insufficient to deliver the content of the six modules in Cambodia, even though prior study had showed the curriculum guide need six hours of classroom time or 4-8 weeks intervention (Milin et al., 2016). Since this curriculum was developed for Western students, additional implementation changes may be needed. For example, Cambodian students may have lower baseline mental health literacy, requiring more intervention exposure. Additionally, Cambodian classrooms may have a larger number of students than Canada or the US, requiring adjustment to the classroom environment to allow time for teacher-student interaction. For instance, each module should require two sessions (two hours), and given this extension may provide more interaction between teachers and students.

Lack of motivation (intrinsic motivation) may also be a factor. Teachers play an important role to created friendly learning environment that allow students to seek knowledge as worthwhile and take ownership over their learning (Bieg et al., 2011; Blazar & Matthew A. Kraft, 2017; Valerio, 2012). However, as observed, teachers not only had difficulty understanding the concepts and teaching process but also face stressors related to managing large classrooms. Students may have also paid less attention than their usual study because there were no performance requirements, like taking an exam or receiving a grade.

Cultural fit. Although the Guide required minimal adaptations and was further reviewed by a team of highly trained Cambodian psychologists, it is also possible that some of this decreased impact was due to the lack of specific cultural and contextual adaptations. For example, previous study in Cambodia has documented culturally distinct mental health syndrome

presentations (D. Hinton et al., 2001; D. E. Hinton et al., 2005) that were not incorporated into The Guide. It is possible that expanding The Guide content to address these types of syndromes as well may improve outcomes by addressing a more comprehensive cultural understanding of what constitutes mental illness.

3.4. Strength and Limitations

Strengths of this study include incorporating a randomized experimental design into a real-world implementation context, inclusion of both teaching and non-teaching staff, as well as the low dropout rate of participants. There are, however, some important limitations. First, we conducted this study only in one private school; it is unclear whether these findings would generalize to other schools in Cambodia. Teachers and students receive more support from school compared to public school; for example, teachers receive better support (salaries), and students receive more attention from teachers and schools; they receive free part-time courses compared to students in public or private schools. Second, because not all staff were subsequently engaged in curriculum delivery, they received less training and may have been less motivated to fully learn the material and implement The Guide. The single-school design also presented barriers to randomization; the control group students who did not receive the intervention may have had interactions with teachers, non-teaching staff, and students who have received the training. Additionally, although the assessment tools had been previously validated in Vietnam and were piloted before use, they were not separately validated in Cambodia. Adaptations were also restricted to the mental health syndromes already described in the materials, which did not include local syndromes that Cambodians may be more familiar with, and so cannot be assumed to represent the totality of

mental health and disorder in this population. Finally, due to resource constraints we were unable to conduct a longer-term follow-up to evaluate sustained programmatic impacts on knowledge and attitudes, and also were not able to directly measure behavior. The self-report data collection without observation or behavior-based measures is a limitation of the study due to the potential for social desirability bias. Knowledge and attitudes are seen as intermediate outcomes conceptualized as leading to the ultimate goals, of increased identification of mental health need, connection to services, and ultimately improved functioning. Our current findings are promising and support more extensive evaluation of the MHL curriculum in Cambodia to include further adaptation and study of implementation features.

CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

The current study demonstrated consistently positive, although varying in magnitude, improvements in knowledge and attitudes among teachers and students following implementation of a classroom-based mental health literacy program in Cambodia. Integrating school-based mental health program in school setting can be a path-way solution to build the significant needs for children and adolescents in limited resource settings like Cambodia and is increasingly a focus in LMICs (Kieling et al., 2011; Vikram Patel et al., 2013). The task-sharing approach that engage teachers to take responsible in promoting mental health rather than professional to implement the schoolwide mental health programming in accessibility of service and reducing stigma associated with seeking mental health care through health facilities (Dang et al., 2017; Milin et al., 2016). However, low levels of mental health literacy in many LMICs, including among professionals such as teachers, indicate a basic need to strengthen staff and student understanding of mental health, mental health disorders, and their treatments, to decrease stigma, and increase help-seeking.

4.2. Recommendations

- Findings from this pilot RCT support the potential benefits of school-based MHL training in Cambodia, where there is substantial stigma, prejudice and discrimination toward mental illness.

Practical Recommendations:

- Integrate MHL training into standard curriculums in Cambodia

- Include MHL training as only one of a multi-tiered system of supports. As MHL increases, there also needs to be clear routes of accessing care and support within schools.
- Consider revise curriculum to be more in accordance with cultural context (e.g., Khmer culture) and extend the length of teaching for each module (e.g., two hours/sessions for each module).

Research Recommendations:

- Replicate study in larger, multi-school sample to address methods limitations of single school design.
- Mixed methods research – more qualitative understanding of how teachers/students experienced the program, would recommend it be improved.
- Future research should conduct longer follow-up period to look at long-term impact.
- Include measures of behavior change, help-seeking to seek if MHL intervention by usual classroom teacher is effectiveness to increase students' MHL.
- Hybrid research to understand necessary supports for teachers to deliver the program with better outcomes for students, greater fidelity.

Publication

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List of appendices

No.	Name of Appendices
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Appendices in English

Questionnaire in English Version

"Assessing the Effectiveness of Teachers' Mental Health Literacy Training in Cambodia"

Q-code: ……

PART I. Socio-demographic information

Gender of respondent: ☐. Male ☐. Female	2. Age: ……
3. ☐. Full-time teacher ☐. Part-time teacher ☐Staff…… (Skip to 7)	4. Subject: …… 5. Grade: …… 6. Year of Teaching: ……
7. Educational background ☐. Secondary school diploma ☐. Master degree ☐. High school diploma ☐. Ph.D. degree ☐. Bachelor degree ☐. Others……	
8. How many children do you have? I have……. children	
9. Marital status: ☐. Married ☐. Separated/Divorce ☐. Widow/Widower ☐.Other	
10. What religion do you follow? ☐. Buddha ☐. Islamic ☐. Hindu ☐. Catholic ☐. Christian ☐. Non ☐. Other……	11. What is your total monthly income? ☐. Less than 100 $ ☐. $ 100 - $ 300 ☐. $ 300 - $ 500 ☐. $ 500 - $ 700 ☐. $ 700 - $ 900 ☐. Over $ 900

PART II. The Knowledge Quiz of mental health

Please identify whether the following statements are true or false

	True	False
1. A phobia is an intense fear about something that might be harmful (such as heights, snakes, etc.)		
2. Useful interventions for adolescent mental disorders include BOTH psychological and pharmacologic treatment.		

3. Mental distress can occur in someone who has a mental disorder.		
4. Stigma against the mentally ill is uncommon in the United States.		
5. Substance abuse is commonly paired with a mental disorder.		
6. The most common mental disorders in teenage girls are eating disorders.		
7. The stresses of being a teenager are a major factor leading to adolescent suicide.		
8. Three of the strongest risk factors for teen suicide are: romantic breakup, conflict with parents, and school failure.		
9. Schizophrenia is a split personality.		
10. A depressed mood that lasts for a month or longer in a teenager is very common and should not be confused with a clinical depression that may require professional help.		
11. After falling in the last two decades, youth suicide rates have recently begun to increase in the USA and Canada.		
Diet, exercise and establishing a regular sleep cycle are all effective treatments for many mental disorders in teenagers.		
13. Anorexia nervosa is very common in teenage girls.		
14. Bipolar disorder is another form for manic depressive illness.		
15. Many clinical depressions that develop in teenagers come “out of the blue”.		
16. Obsessions are thoughts that are unwanted and known not to be correct.		
17. Serotonin is a liver chemical that helps control appetite.		
18. About 20 percent of Americans will experience a mental illness.		
19. Most people with panic disorder do not get well with treatment.		
20. Depression affects about 2 percent of people in North America.		
21. A psychiatrist is a medical doctor who specializes in treating people who have a mental illness.		
22. Attention Deficit Hyperactivity Disorder (ADHD) is equally common in boys and girls.		
23. A hallucination is defined as a sound that comes from nowhere.		
24. Panic disorder is a type of Anxiety disorder.		

25. Medications called “anti-psychotics” are helpful to treat the symptoms of Schizophrenia.		
26. A delusion is defined as seeing something that is not real.		
27. Lack of pleasure, hopelessness and fatigue can all be symptoms of a clinical depression.		
28. Nobody with Schizophrenia ever recovers.		
29. People with mania may experience strange feelings of grandiosity.		
30. Mental disorders are psychological problems caused by poor nutrition.		

PART III. The knowledge of mental health and mental illness

The purpose of these questions is to gain an understanding of your knowledge of various aspects to do with mental health. When responding, we are interested in your degree of knowledge. Therefore, when choosing your response, consider that:

Very unlikely = I am certain that it is NOT likely
Unlikely = I think it is unlikely but am not certain
Neutral = I think I am in between unlikely and likely (uncertain)
Likely = I think it is likely but am not certain
Very Likely = I am certain that it IS very likely

If someone became extremely nervous or anxious in one or more situations with other people (e.g., a party) or performance situations (e.g., presenting at a meeting) in which they were afraid of being evaluated by others and that they would act in a way that was humiliating or feel embarrassed, then to what extent do you think it is likely they have **Social Phobia**				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, had difficulty controlling this worry and had physical symptoms such as having tense muscles and feeling fatigued then to what extent do you think it is likely they have Generalized Anxiety Disorder				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
If someone experienced a low mood for two or more weeks, had a loss of pleasure or interest in their normal activities and experienced changes in their				

appetite and sleep then to what extent do you think it is likely they have **Major Depressive Disorder**				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
To what extent do you think it is likely that **Personality Disorders** are a category of mental illness				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
To what extent do you think it is likely that **Dysthymia** is a disorder				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
To what extent do you think it is likely that the diagnosis of **Agoraphobia** includes anxiety about situations where escape may be difficult or embarrassing				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
To what extent do you think it is likely that the diagnosis of **Bipolar Disorder** includes experiencing periods of elevated (i.e., high) and periods of depressed (i.e., low) mood				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4
To what extent do you think it is likely that the diagnosis of **Drug Dependence** includes physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)				
Very unlikely	Unlikely	Neutral	Likely	Very Likely
0	1	2	3	4

Please indicate to what extent you agree with the following statements by tick (√):

0 = Strongly Disagree
1 = Disagree

2 = Neither agree or disagree
3 = Agree
4 = Strongly Agree

Items	Scale (0 to 4)				
9. I am confident that I know where to seek information about mental illness	0	1	2	3	4
10. I am confident using the computer or telephone to seek information about mental illness	0	1	2	3	4
11. I am confident attending face to face appointments to seek information about mental illness (e.g., seeing the GP)	0	1	2	3	4
12. I am confident I have access to resources (e.g., GP, internet, friends) that I can use to seek information about mental illness	0	1	2	3	4

Please indicate to what extent you agree with the following statements by tick (√):
0 = Strongly Disagree
1 = Disagree
2 = Neither agree or disagree
3 = Agree
4 = Strongly Agree

	Scale (0 to 4)				
13. People with a mental illness could snap out if it if they wanted	0	1	2	3	4
14. A mental illness is a sign of personal weakness	0	1	2	3	4
15. A mental illness is not a real medical illness	0	1	2	3	4
16. People with a mental illness are dangerous	0	1	2	3	4
17. It is best to avoid people with a mental illness so that you don't develop this problem	0	1	2	3	4
18. If I had a mental illness I would not tell anyone	0	1	2	3	4
19. Seeing a mental health professional means you are not strong enough to manage your own difficulties	0	1	2	3	4
20. If I had a mental illness, I would not seek help from a mental health professional	0	1	2	3	4
21. I believe treatment for a mental illness, provided by a mental health professional, would not be effective	0	1	2	3	4

Please indicate to what extent you agree with the following statements by tick (√):

0 = Strongly Disagree
1 = Disagree
2 = Neither agree or disagree
3 = Agree
4 = Strongly Agree

	Scale (0 to 4)				
22. How willing would you be to move next door to someone with a mental illness?	0	1	2	3	4
23. How willing would you be to spend an evening socializing with someone with a mental illness?	0	1	2	3	4
24. How willing would you be to make friends with someone with a mental illness?	0	1	2	3	4
25. How willing would you be to have someone with a mental illness start working closely with you on a job?	0	1	2	3	4
26. How willing would you be to have someone with a mental illness marry into your family?	0	1	2	3	4
27. How willing would you be to vote for a politician if you knew they had suffered a mental illness?	0	1	2	3	4
28. How willing would you be to employ someone if you knew they had a mental illness?	0	1	2	3	4

Please say How True you think each of the following statements is by tick (√):

0 = completely disagree
1 = mostly disagree
2 = partially disagree
3 = partially agree
4 = mostly agree
5 = completely agree

BMI - 21 Items						
1. A mentally ill person is more likely to harm others than a normal person	0	1	2	3	4	5
2. Mental disorders require a much longer period of time to be cured than other general diseases take to be cured	0	1	2	3	4	5
3. It may be a good idea to stay away from people who have psychological disorder because their behaviour is dangerous	0	1	2	3	4	5
4. The term ‘psychological disorder’ makes me feel embarrassed	0	1	2	3	4	5

5.	A person with psychological disorder should have a job with only minor responsibilities	0	1	2	3	4	5
6.	Mentally ill people are more likely to be criminals	0	1	2	3	4	5
7.	Psychological disorders tend to re-occur	0	1	2	3	4	5
8.	I am afraid of what my boss, friends and others would think if I were diagnosed as having a psychological disorder	0	1	2	3	4	5
9.	Individuals diagnosed as mentally ill will suffer from the symptoms throughout their life	0	1	2	3	4	5
10.	People who have once received psychological treatment are likely to need further treatment in the future	0	1	2	3	4	5
11.	It may be difficult for mentally ill people to follow social rules such as being punctual or keeping promises	0	1	2	3	4	5
12.	I would be embarrassed if people knew that I dated a person who once received psychological treatment	0	1	2	3	4	5
13.	I am afraid of people who are suffering from psychological disorders because they might harm me	0	1	2	3	4	5
14.	A person with psychological disorder is less likely to function well as a parent	0	1	2	3	4	5
15.	I would be embarrassed if a person in my family became mentally ill	0	1	2	3	4	5
16.	I believe that psychological disorders can never be completely cured	0	1	2	3	4	5
17.	Mentally ill people are unlikely to be able to live by themselves because they cannot assume responsibilities	0	1	2	3	4	5
18.	Most people would not knowingly be friends with a mentally ill person	0	1	2	3	4	5
19.	The behaviour of people who have psychological disorders is unpredictable	0	1	2	3	4	5
20.	Psychological disorders are unlikely to be cured, regardless of treatment	0	1	2	3	4	5
21.	I would not trust the work of a mentally ill person assigned to my work team	0	1	2	3	4	5

The Guide Lesson Fidelity Rating

Teacher: _____School_____ Class_____
Lesson: _____
Lesson length: _____Time tart: _____Time end_____
Date of Rating: _____
Rater: _____

1 = Not Done **2 = Partially Done** **3 = Done**

No.	Items	**1**	**2**	**3**
1. Content				
1.1	Follow lesson objectives listed in the Guide			
1.2	Address major concepts listed in the Guide			
1.3	Organize activities recommended			
2. Process				
2.1	Follow the sequence of lesson steps			
2.2	Use appropriate methods (list methods used)			
2.3	Appropriate and efficient time for activities - List time for instruction/lecture - Time for discussion - Time for demonstration - Time for practice - Others:			
3. Materials				
3.1	Use appropriate teaching materials (e.g., worksheet, photos, etc.,)			
3.2	Provide relevant examples			
4. Students' acceptance				
4.1	Students participate in discussion			
4.2	Students respond to the lesson			
4.3	Students show interest in the lesson			
5. Quality of teaching				
5.1	Teacher understands the concept			
5.2	Teacher prepares for the lesson			
5.3	Teacher shows enthusiasm			
5.4	Teacher shows confidence			

Teachers Survey

1 = Totally Disagree **2 = Somewhat Agree** **3 = Agree**

No.	Items	**1**	**2**	**2**
Beliefs				
1	This program is feasible to use in my classroom			
2	This program probably would require more time on my part than it's worth.			
3	I am a little concerned that this program might have some negative effects for some of my students			
4	I like the strategies and methods used in this program.			
5	Overall, I believe this program will be beneficial for my students.			
6	This program is helpful for me and my students			
7	This program seems complicated to use in my classroom			
Self-efficacy				
8	I use allocated time for activities that maximize learning			
9	I communicate to students the specific learning outcomes of the lesson			
10	I communicate to students' content knowledge that is accurate and logical			
11	I monitor students' involvement during learning task			
12	I successfully maintain a positive classroom climate			
13	I adjust teaching and learning activities as needed			
14	I provide alternative explanation or example when the students are confused			
Enthusiasm				
15	I intend to make a good effort to implement the program.			
16	I read the manual carefully			
17	I spend time to prepare before teaching the lessons of MHL			
18	I am willing to try this program in my classroom			
19	I try my best to make the lesson of MHL interesting			
20	I enjoy teaching the lesson in MHL			

Agenda for day-3 MHL training

Detailed instructions on how to use a handbook for teaching mental health in school

Time	Topic	Descriptions & Activities	Facilitator (s)
07:30 – 8:00	Registration	• Arrival of Participant	Bunnary & Chanthorn
08:00-09:00	Introduction to six modules	• Review the module together with participants • slide presentation the summary of main activities and message for each module	Bunna
09:00-10:00	Introduction to modules and online resource	• Link and password to access to modules • Practice to use internet and access to the module and download.	Bunna
10:00-10:30	***Coffee-Break***		
10:30-12:00	Working on Modules in detail and set the work plan in draft	• Group discussion • what was the main activities and message cover for each module? • Time management in delivering the activities and key messages.	Bunna
12:00-13:30	***Lunch-Break***		
13:30-14:30	Working on Modules in details and set the work plan in draft	• Group discussion • what was the main activities and message cover for each module? • Time management in delivering the activities and key messages.	Bunna
14:30-15:30	***Coffee-Break***		
15:30 - 16:30	Working on Modules in details	• Slide presentation cover the main activities and message.	Bunna
16:30 – 17:00	Reflection	• Question and Answer	Bunna

Letter to Teacher' Informed Consent Form English Version

Date
Dear Teacher:

My name is Phoeun Bunna, lecturer psychology at National Institute of Physical Education and Sport and PhD. Student in Child and Adolescent Clinical Psychology at University of Education, Vietnam National University, Hanoi, Vietnam. I am conducting a research on "Assessing the Effectiveness of Teachers' Mental Health Literacy Training in Cambodia".

I would like to invite you to participate in this study. If you agree to participate, you will be randomly selected be either in group of intervention or control group. Both groups are required to complete survey questionnaire prior and after the study which survey includes background and socio-economic status information, beliefs toward mental illness, mental health literacy scale, and the knowledge of quiz prior and after the study. Answering the questionnaire will take about 30 minutes. In addition, intervention group are required to participate a 2-day training on mental health literacy and require to teach student about mental health literacy based on existing manual 1 hour per six weeks.

Answering the survey is voluntary and you have the right to discontinue at any time and for whatever reason. Your responses will be treated with confidentiality and will neither show to other teachers nor the school director. Research reports will not contain the identities of respondents nor their individual responses.

Should you have any questions or concerns, please feel free to contact me at telephone no. (855) 12 942 964 or email to: bunnapsyeng@gmail.com.

We look forward to your participation.

Sincerely,

Phoeun Bunna

Teachers' Informed Consent

By signing below, it means I give either agree to answer a survey on "Assessing the Effectiveness of Teachers' Mental Health Training in Cambodia" or participate in a 2-day training that is being administered by Mr. Phoeun Bunna, the lecturer at National Institute of Physical Education and Sport and Ph.D. student at Vietnam National University.

I understand that:
I will either participate in control participants or intervention participants by randomly selected
I will answer a questionnaire regarding views about background and socio-economic status information, belief toward mental illness, mental health literacy scale, and the knowledge of quiz. The questionnaire will take about 30 minutes to answer.
I am free to stop answering the questionnaire at any time and for whatever reason.

My responses will neither show to other teachers nor the school director.

Research reports will not include my name or my individual responses.

_____	_____
Teacher of Student	Teachers' Printed Name
_____	_____
Date	Date

Parent Informed Consent

Dear Sir/Madam
Parent or Guardian

My name is Phoeun Bunna, Ph.D. student at the Vietnam National University. I am conducting a research on "Assessing the Effectiveness of Teachers' Mental Health Literacy Training in Cambodia" and the study will be held at private High School in Cambodia, with the permission from school director.

Part of this study will require students' participation of grades 7, 8, 10 and 11. They will participate in answering some mental health questions about 15 minutes and participate in learning mental health literacy one hour per week for six weeks. All their responses will be kept confidential and the research report will not identify the respondent's identities or the individual answers. For this, they will receive a pen and highlighter.

As notified above, I would like to ask your permission for children's participation in this study.

If you have any questions or concerns please contact me on 012-942-964
Or email: bunnapsyeng@gmail.com

Made in Phnom Penh, March 26, 2018

Phoeun Bunna

Appendices in Khmer

កម្រងសំណួរ

កូដ……..

“ការវាយតម្លៃប្រសិទ្ធភាពវគ្គបណ្តុះបណ្តាលផ្នែកសុខភាពផ្លូវចិត្តគ្រូបង្រៀននៅកម្ពុជា”

ផ្នែកទី ១ : ពត៌មានប្រជាសាស្ត្រ

ភេទរបស់អ្នកឆ្លើយតបសម្ភាសន៍: □. ប្រុស □.ស្រី

2. អាយុ: ……

□.គ្រូបង្រៀនពេញម៉ោង

□.គ្រូបង្រៀនក្រៅម៉ោង

□.បុគ្គលិកផ្នែក .....

...

បង្រៀនមុខវិជ្ជា: ……

ថ្នាក់ទី: ……

បទពិសោធន៍បង្រៀន ……ឆ្នាំ

(រំលងទៅសំណួរទី៧)

3. ប្រវត្តិនៃការសិក្សាអប់រំ

□.មធ្យមសិក្សាបឋមភូមិ □.បរិញ្ញាបត្រជាន់ខ្ពស់

□.មធ្យមសិក្សាទុតិយភូមិ □.បរិញ្ញាបត្របណ្ឌិត

□.បរិញ្ញាបត្រ □.ផ្សេងៗ.....(បញ្ជាក់)

4. តើអ្នកមានកូនចំនួនប៉ុន្មាននាក់? ……នាក់

5. ស្ថានភាពគ្រួសារ □. រស់នៅជុំគ្នា (រៀបការ) □. រស់នៅបែកគ្នា

□ . មេម៉ាយ / ពោះម៉ាយ ឬ លែងលះ □ . ផ្សេងៗ

6. តើអ្នកកាន់សាសនាអ្វី ?

□.ព្រះពុទ្ធ

□.អ៊ីស្លាម

□.ហិណ្ឌូ

□.កាតូលិក

7. តើប្រាក់ចំណូលសរុបប្រចាំខែរបស់គ្រួសារអ្នកប្រហែលប៉ុន្មាន?

□ . តិចជាង $100

□ . $ 100 - $ 300

□ . $ 300 - $ 500

☐.គ្រីស្ទីន ☐ . $ ៥០០ - $ ៧០០

☐.អត់ ☐ . $ ៧០០ - $ ៩០០

☐.ផ្សេងៗ

.....

ផ្នែកទី ២ : ចំណេះដឹងទាក់ទងនិងសុខភាពផ្លូវចិត្ត

សូមបញ្ជាក់ ថាតើប្រយោគខាងក្រោមនេះ ពិត ឬ មិនពិត។ សូមជ្រើសចម្លើយ ពិត ឬ មិនពិត ដោយគូស) √) ក្នុងប្រអប់ដើម្បីបញ្ជាក់ពីចម្លើយរបស់អ្នក

ប្រយោគ (១ = ពិត ២ = មិនពិត)		
1. ជំងឺភ័យខ្លាច គឺជាការភ័យខ្លាចជ្រុលហួសហេតុពីអ្វីមួយដែលអាចធ្វើឱ្យមានគ្រោះថ្នាក់ ដូចជា) (កន្លែងខ្ពស់ សត្វពស់ ជាដើម	១	២
2. អន្តរាគមន៍ដែលមានប្រសិទ្ធភាពសម្រាប់ជំទង់ដែលមានជំងឺផ្លូវចិត្ត រួមមាន ការព្យាបាលតាមបែបចិត្តសាស្ត្រ និង ការព្យាបាលដោយប្រើឱសថផ្លូវចិត្ត	១	២
3. ការគាននឹងចិត្តអាចកើតមានចំពោះតែអ្នកដែលមានជំងឺផ្លូវចិត្តប៉ុណ្ណោះ	១	២
4. ការមាក់ងាយចំពោះជំងឺផ្លូវចិត្តមិនសូវមានទេនៅសហរដ្ឋអាមេរិក	១	២
5. ជាទូទៅ ការបំពានគ្រឿងញៀនកើតឡើងព្រមគ្នាជាមួយជំងឺផ្លូវចិត្ត	១	២
6. ជំងឺផ្លូវចិត្តភាគច្រើនដែលកើតក្នុងចំណោមក្មេងស្រីវ័យជំទង់គឺជំងឺវិបត្តិនៃការបរិភោគអាហារ	១	២
7. ការគាននឹងចិត្តក្នុងវ័យជំទង់គឺជាកត្តាចម្បងដែលបណ្តាលឱ្យមនុស្សវ័យជំទង់ធ្វើអត្តឃាត	១	២
8. កត្តាគ្រោះថ្នាក់ចម្បងៗបីដែលធ្វើឱ្យជំទង់ធ្វើអត្តឃាតរួមមាន: ការបែកបាក់ស្នេហា បញ្ហាជាមួយឪពុកម្តាយ និង បរាជ័យក្នុងការសិក្សា	១	២
9. ជំងឺចិត្តវិកលរ៉ាំរ៉ៃ គឺជាបុគ្គលិកលក្ខណៈបែកខ្ញែក	១	២
10. អារម្មណ៍ធ្លាក់ទឹកចិត្តដែលមានក្នុងរយៈពេលមួយខែឬច្រើនជាងនេះក្នុងវ័យជំទង់គឺជារឿងធម្មតា ហើយមិនគួរកាន់ច្រឡំជាមួយនឹងជំងឺធ្លាក់ទឹកចិត្តដែលអាចត្រូវការការជួយពីអ្នក	១	២

ជំនាញឯកទេសនោះទេ		
11. បន្ទាប់ពីមានការធ្លាក់ចុះរយៈពេលពីរទសវត្សចុងក្រោយនេះ អត្រានៃការសម្លាប់ខ្លួនរបស់យុវជនបានចាប់ផ្តើមកើនឡើងជាថ្មីនៅ សហរដ្ឋអាមេរិក និងកាណាដា	១	២
12. ការមានរបបអាហារ ការហាត់ប្រាណ និងការបង្កើតទម្លាប់គេងឱ្យបានទៀតទាត់ ទាំងនេះជាការព្យាបាលដ៏មានប្រសិទ្ធភាពសម្រាប់ជំងឺផ្លូវចិត្តជាច្រើននៅវ័យជំទង់	១	២
13. ជំងឺខ្លាចធាត់ គឺជារឿងធម្មតាសម្រាប់ក្មេងស្រីក្នុងវ័យជំទង់	១	២
14. ជំងឺបាយប៉ូឡា ជាជំងឺផ្លូវចិត្តដែលមានទឹកចិត្តឡើងចុះ	១	២
15. ជំងឺធ្លាក់ទឹកចិត្តភាគច្រើនដែលកើតឡើងក្នុងវ័យជំទង់គឺកើតឡើងភ្លាមៗ“ ដោយមិនដឹងពីមូលហេតុ”	១	២
16. ការគិតរំខានដដែលៗ គឺជាការគិតដែលគេមិនចង់កើតមានហើយត្រូវបានទទួលស្គាល់ថាជាគំនិតមិនត្រឹមត្រូវ	១	២
17. អ័រម៉ូនសេរ៉ូតូនីន ជាសារធាតុគីមីក្នុងថ្លើមដែលជួយគ្រប់គ្រងចំណង់ក្នុងការបរិភោគអាហារ	១	២
18. ប្រមាណជា ២០ភាគរយ នៃជនជាតិអាមេរិកមានជំងឺផ្លូវចិត្ត	១	២
19. មនុស្សភាគច្រើនដែលមានជំងឺស្រឹត មិនបានទទួលផលប្រសើរពីការព្យាបាលទេ	១	២
20. ជំងឺធ្លាក់ទឹកចិត្តប៉ះពាល់ដល់ប្រជាជននៅអាមេរិកខាងជើងប្រមាណជា ២ភាគរយ	១	២
21. គ្រូពេទ្យវិកលវិទ្យាជាគ្រូពេទ្យវេជ្ជសាស្ត្រដែលមានឯកទេសក្នុងការព្យាបាលអ្នកដែលមានជំងឺផ្លូវចិត្ត	១	២
22. ជំងឺរំពឹស ADHDកើតឡើងមានចំនួនស្មើគ្នារវាងក្មេងប្រុស និងក្មេង ស្រី	១	២
23. មមាល hallucinationត្រូវបានគេកំណត់ថាជាសំឡេងមួយដែលគ្មានប្រភពពិតប្រាកដ	១	២
24. ជំងឺស្រឹតជាប្រភេទមួយនៃជំងឺថប់បារម្ភ	១	២
25. ថ្នាំដែលគេហៅថា “ប្រឆាំង-ចិត្តវិកល (anti-psychotics)” មានសារៈប្រយោជន៍ដើម្បីព្យាបាលរោគសញ្ញានៃជំងឺចិត្តវិកលវ៉ាំរ៉ៃ	១	២

26. ជំនឿខុស ត្រូវបានគេកំណត់ថាជាការមើលឃើញអ្វីមួយដែលមិនមានពិតប្រាកដ	១	២
27. ការបាត់បង់ភាពសប្បាយរីករាយភាពអស់សង្ឃឹមនិងអស់កម្លាំងល្ងិតល្ងៃអាចជារោគសញ្ញានៃជំងឺធ្លាក់ទឹកចិត្ត	១	២
28. គ្មាននរណាម្នាក់ដែលមានជំងឺចិត្តវិកលរ៉ាំរ៉ៃធ្លាប់ជាសៈស្បើយទេ	១	២
29. មនុស្សដែលមានការរើរាយអាចមានអារម្មណ៍ចម្លែកអស្ចារ្យ	១	២
30. ជំងឺផ្លូវចិត្តជាបញ្ហាផ្លូវចិត្តដែលបណ្តាលមកពីកង្វះអាហារូបត្ថម្ភ	១	២

ផ្នែកទី ៣ : ចំណេះដឹងសុខភាពផ្លូវចិត្តនិងជំងឺផ្លូវចិត្ត

គោលបំណងនៃសំនួរទាំងនេះ គឺដើម្បីបង្កើនការយល់ដឹងរបស់អ្នកទាក់ទងនឹងសុខភាពផ្លូវចិត្ត។ យើងចាប់អារម្មណ៍នឹងកម្រិតនៃចំណេះដឹងរបស់អ្នកនៅពេលឆ្លើយនឹងសំណួរ។ ដូច្នេះ នៅពេលអ្នកជ្រើសរើសចម្លើយ សូមពិចារណាលើកម្រិតទាំងនេះ៖

0 = មិនទំនងទាល់តែសោះ (ខ្ញុំប្រាកដថាវាមិនមែនអញ្ចឹងទេ)
១ = មិនទំនង (គិតថាវាមិនទំនង តែខ្ញុំមមិនប្រាកដទេ)
២ = ទំនងខ្លះអត់ខ្លះ (ចម្លើយរបស់ខ្ញុំនៅចន្លោះ ទំនង និង មិនទំនង មិនប្រាកដ)
៣ = ទំនង (ខ្ញុំគិតថាវាទំនងជាអញ្ចឹងតែខ្ញុំមិនប្រាកដទេ)
៤ = ទំនងខ្លាំងណាស់ (ខ្ញុំប្រាកដថាវាពិតជាអញ្ចឹង)

1. ប្រសិនបើនរណាម្នាក់ មានការភ័យខ្លាច ឬ ភ័យស្លន់ស្លោយ៉ាងខ្លាំងក្នុងស្ថានភាពមួយ ឬច្រើនពេលនៅជាមួយមនុស្សដទៃផ្សេងទៀត ឧ). នៅក្នុងពិធីជប់លៀងឬ ពេលបំពេ (ញេកការងារ ឧ). ការធ្វើបទបង្ហាញនៅក្នុងអង្គប្រជុំថាពួកគេមានការភ័យខ្លាចអ្នកដទៃវាយតម្លៃខ្លួន (ហើយពួកគេបញ្ចេញសកម្មភាពដូចជាកំពុង រងភាពអាម៉ាស ឬ មានអារម្មណ៍ថាអាម៉ាស ដូច្នេះតើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថាពួកគេទំនងជាមានបញ្ហា **<u>ខ្លាចសង្គម</u>**

មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4

2. ប្រសិនបើនរណាម្នាក់ មានបទពិសោធន៍ ព្រួយបារម្ភជ្រុលទៅលើរឿង៉ាវ ឬ សកម្មភាពមួយចំនួន ដែលកម្រិតនៃការព្រួយបារម្ភនេះ មិនប្រាកដប្រជា ហើយពួកគេមានការលំបាកក្នុងការគ្រប់គ្រងការព្រួយបារម្ភនេះ និង

មានរោគសញ្ញាលើរាងកាយដូចជា តឹងសាច់ដុំ និង មានអារម្មណ៍ថាអស់កម្លាំង តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថាពួកគេទំនងជាមាន**<u>ជំងឺថប់បារម្ភទូទៅ</u>**				
មិនទំនងទាល់តែសោះ	**មិនទំនង**	**ទំនងខ្លះអត់ខ្លះ**	**ទំនង**	**ទំនងខ្លាំងណាស់**
0	1	2	3	4
ប្រសិនបើនរណាម្នាក់ មានបទពិសោធន៍ ធ្លាក់ចុះនៃអារម្មណ៍ ក្នុងរយៈពេល ២ ឬ ច្រើនសប្តាហ៍ ពួកគេបានបាត់បង់នូវអារម្មណ៍សប្បាយរីករាយ បាត់បង់នូវចំណាប់អារម្មណ៍ចំពោះសកម្មភាពប្រចាំថ្ងៃ ប្រែប្រួលរបបអាហារ ហើយការគេងរបស់ពួកគេមានការប្រែប្រួល តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថាពួកគេទំនងជាមានជំងឺធ្លាក់ទឹកចិត្តធ្ងន់ធ្ងរ				
មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4
តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថា ជំងឺ<u>វិបល្លាសបុគ្គលិកលក្ខណៈ</u>ត្រូវបានគេដាក់ក្នុងប្រភេទនៃជំងឺផ្លូវចិត្ត				
មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4
តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថា <u>ការធ្លាក់ទឹកចិត្តកម្រិតស្រាលរ៉ាំរ៉ៃ</u> គឺជាជំងឺផ្លូវចិត្ត				
មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4
តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថា ការធ្វើរោគវិនិច្ឆ័យនៃ <u>បញ្ហាខ្លាចទីកន្លែងទូលាយ</u> រួមមានរោគសញ្ញា ភ័យខ្លាចពីស្ថានភាពលដែលពិបាកគេចវេស ឬ ជារឿងអាម៉ាស				
មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4
តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថាទំនងជា ការធ្វើរោគវិនិច្ឆ័យនៃ <u>ជំងឺបាយប៉ូឡា</u> រួមមានរោគសញ្ញា អារម្មណ៍រំជើបរំជួលខ្លាំង (កើនឡើងខ្ពស់) និង អារម្មណ៍ធ្លាក់ទឹកចិត្ត(អារម្មណ៍ធ្លាក់ចុះ)				
មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4
តើក្នុងកម្រិតប៉ុណ្ណាដែរ ដែលអ្នកគិតថា ការធ្វើរោគវិនិច្ឆ័យនៃ <u>បញ្ហាស្រាំថ្នាំ</u> រួមបញ្ចូល ប្រតិកម្មផ្លូវកាយ និងផ្លូវចិត្តចំពោះថ្នាំ(ឧ. តម្រូវឲ្យមានការបន្ថែមថ្នាំដើម្បីទទួលបានប្រសិទ្ធដូចមុន)				

មិនទំនងទាល់តែសោះ	មិនទំនង	ទំនងខ្លះអត់ខ្លះ	ទំនង	ទំនងខ្លាំងណាស់
0	1	2	3	4

សូមបញ្ជាក់ពីកម្រិតដែលអ្នកយល់ស្របចំពោះប្រយោគខាងក្រោមនេះ៖

០ មិនយល់ស្របទាល់តែសោះ = ១ = មិនយល់ស្រប ២ = មិនប្រាកដ ៣ យល់ស្រប = ៤ = យល់ស្របខ្លាំងណាស់					
9.ខ្ញុំប្រាជកថា ខ្ញុំដឹងកន្លែងស្វែងរកព័ត៌មានអំពីជំងឺផ្លូវចិត្ត	0	1	2	3	4
10.ខ្ញុំមានទំនុកចិត្តក្នុង ការប្រើប្រាស់កុំព្យូទ័រ ឬ ទូរស័ព្ទ ដើម្បីស្វែងរកព័ត៌មានអំពីជំងឺផ្លូវចិត្ត	0	1	2	3	4
11.ខ្ញុំមានទំនុកចិត្តចំពោះការណាត់ជួបផ្ទាល់ដើម្បីស្វែងរកព័ត៌មានអំពីជំងឺផ្លូវចិត្ត)ឧ. ការជួបជាមួយ វេជ្ជបណ្ឌិតទូទៅ(	0	1	2	3	4
12.ខ្ញុំមានទំនុកចិត្តថាខ្ញុំមានលទ្ធភាពស្វែងរកធនធាន ឧ). វេជ្ជបណ្ឌិតទូទៅ អ៊ីនធឺណែត និង មិត្តភក្តិ (ដែលខ្ញុំអាចប្រើប្រាស់ដើម្បីស្វែងរកព័ត៌មានអំពីជំងឺផ្លូវចិត្ត	0	1	2	3	4
13.អ្នកដែលមានជំងឺផ្លូវចិត្តអាចបញ្ឈប់វាបាន ប្រសិនបើពួកគេចង់	0	1	2	3	4
14.ជំងឺផ្លូវចិត្តជាសញ្ញានៃភាពទន់ខ្សោយផ្ទាល់ខ្លួន	0	1	2	3	4
15.ជំងឺផ្លូវចិត្តមិនមែនជាជំងឺវេជ្ជសាស្ត្រពិតប្រាកដទេ	0	1	2	3	4
16.អ្នកដែលមានជំងឺផ្លូវចិត្ត គឺប្រកបដោយគ្រោះថ្នាក់	0	1	2	3	4
17.វាជារឿងដ៏ប្រសើរបំផុតក្នុងការគេចចេញពីអ្នកដែលមានជំងឺផ្លូវចិត្ត ដូច្នេះអ្នកមិនកើតបញ្ហានេះទេ	0	1	2	3	4
18.ប្រសិនបើខ្ញុំមានជំងឺផ្លូវចិត្ត ខ្ញុំនឹងមិនប្រាប់អ្នកណាឡើយ	0	1	2	3	4
19.ការជួបជាមួយអ្នកជំនាញផ្នែកសុខភាពផ្លូវចិត្ត មានន័យថាអ្នកមិនមានភាពខ្លាំងគ្រប់គ្រាន់ក្នុងការគ្រប់គ្រងការលំបាករបស់អ្នកទេ	0	1	2	3	4
20.ប្រសិនបើខ្ញុំមានជំងឺផ្លូវចិត្ត ខ្ញុំនឹងមិនស្វែងរកការជួយពីអ្នកជំនាញផ្នែកសុខភាពផ្លូវចិត្តទេ	0	1	2	3	4
21.ខ្ញុំជឿថាការព្យាបាលជំងឺផ្លូវចិត្ត ដោយអ្នកជំនាញផ្នែកសុខភាពផ្លូវចិត្ត នឹងមិនមានប្រសិទ្ធភាពទេ	0	1	2	3	4
គ្មានឆន្ទៈសោះ =1 ប្រហែលជាគ្មានឆន្ទៈ = 2 មិនប្រាកដ = 3 មានឆន្ទៈ = 4 = មានឆន្ទៈទាំងស្រុង					

22.តើអ្នកមានឆន្ទៈចង់ផ្លាស់ប្តូរទៅរស់នៅក្បែរអ្នកដែលមានជំងឺផ្លូវចិត្តយ៉ាងណាដែរ?	0	1	2	3	4
23.តើអ្នកមានឆន្ទៈចង់ចំណាយពេលចូលរួមលក្ខណៈសង្គមពេលល្ងាចជាមួយអ្នកដែលមានជំងឺផ្លូវចិត្តយ៉ាងណាដែរ?	0	1	2	3	4
24.តើអ្នកមានឆន្ទៈចង់រាប់អានមិត្តជាមួយអ្នកដែលមានជំងឺផ្លូវចិត្តយ៉ាងណាដែរ?	0	1	2	3	4
25.តើអ្នកមានឆន្ទៈចង់ឱ្យអ្នកដែលមានជំងឺផ្លូវចិត្តសហការជិតស្និតធ្វើការជាមួយអ្នកយ៉ាងណាដែរ?	0	1	2	3	4
26.តើអ្នកមានឆន្ទៈចង់ឱ្យអ្នកដែលមានជំងឺផ្លូវចិត្តរៀបការចូលក្នុងគ្រួសាររបស់អ្នកយ៉ាងណាដែរ?	0	1	2	3	4
27.តើអ្នកមានឆន្ទៈចង់ បោះឆ្នោតឲ្យអ្នកនយោបាយណាម្នាក់ ប្រសិនបើអ្នកបានដឹងថាពួកគេធ្លាប់មានជំងឺផ្លូវចិត្តពីមុន?	0	1	2	3	4
28.តើអ្នកមានឆន្ទៈចង់ ជួលនរណាម្នាក់ឱ្យធ្វើការ បើអ្នកដឹងថាគេធ្លាប់មានជំងឺផ្លូវចិត្តពីមុន?	0	1	2	3	4

សូមបញ្ជាក់ ថាតើអ្នកគិតថាប្រយោគខាងក្រោមនេះ ពិតកម្រិតណាដែរសម្រាប់អ្នក៖)**BMI - 21 Items**(

0 = មិនយល់ស្របទាល់តែសោះ 1 = មិនយល់ស្របភាគច្រើន

2 = មិនយល់ស្របផ្នែកខ្លះ 3 = យល់ស្របផ្នែកខ្លះ

4 = យល់ស្របភាគច្រើន 5 = យល់ស្របទាំងស្រុង

បុគ្គលដែលមានជំងឺផ្លូវចិត្តទំនងជាបង្ករគ្រោះថ្នាក់ដល់អ្នកដទៃច្រើនជាងមនុស្សធម្មតា	0	1	2	3	4	5
ជំងឺផ្លូវចិត្តតម្រូវឲ្យមានរយៈពេលក្នុងការព្យាបាលយូរជាងការព្យាបាលជំងឺទូទៅ	0	1	2	3	4	5
វាប្រហែលជាគំនិតល្អ ក្នុងការដែលនៅឲ្យឆ្ងាយពីអ្នកដែលមានជំងឺផ្លូវចិត្តពីព្រោះអាកប្បកិរិយារបស់ពួកគេប្រកបដោយគ្រោះថ្នាក់	0	1	2	3	4	5
ពាក្យថា “ជំងឺផ្លូវចិត្ត” ធ្វើឲ្យខ្ញុំមានអារម្មណ៍ថាអាម៉ាស់	0	1	2	3	4	5
បុគ្គលដែលមានជំងឺផ្លូវចិត្តគួតែធ្វើការងារណាដែលមានការទទួលខុសត្រូវតិចតួចប៉ុណ្ណោះ	0	1	2	3	4	5
បុគ្គលដែលមានជំងឺផ្លូវចិត្ត ទំនងជាបង្កបទល្មើសច្រើន	0	1	2	3	4	5
ជំងឺផ្លូវចិត្តទំនងជានឹងកើតឡើងមកវិញម្តងទៀត	0	1	2	3	4	5

ខ្ញុំមានអារម្មណ៍ភ័យខ្លាច នូវអ្វីដែលប្រធានរបស់ខ្ញុំ មិត្តភក្តិខ្ញុំ ឬ អ្នកដទៃគិត ប្រសិនបើខ្ញុំត្រូវបានធ្វើរោគវិនិច្ឆ័យថាមានជំងឺផ្លូវចិត្ត	0	1	2	3	4	5
បុគ្គលដែលត្រូវបានធ្វើរោគវិនិច្ឆ័យថាមានជំងឺផ្លូវចិត្ត នឹងទទួលរងការលំបាកដោយសារអោគសញ្ញានៃជំងឺនោះពេញមួយជីវិតរបស់ពួកគេ	0	1	2	3	4	5
អ្នកដែលធ្លាប់ទទួលបានការព្យាបាលផ្លូវចិត្ត អាចនឹងត្រូវការការព្យាបាលបន្តទៀតនៅពេលអនាគត	0	1	2	3	4	5
វាអាចមានការលំបាកសម្រាប់អ្នកដែលមានជំងឺផ្លូវចិត្តក្នុងការគោរពច្បាប់សង្គម ដូចជា ការគោរពពេលវេលាឱ្យបានទៀតទាត់ ឬ ការរក្សានូវពាក្យសន្យា	0	1	2	3	4	5
ខ្ញុំនឹងមានភាពអាម៉ាស ប្រសិនបើមានមនុស្សដឹងថាខ្ញុំបានធ្វើការណាត់ជួបជាមួយអ្នកដែលធ្លាប់ទទួលការព្យាបាលផ្លូវចិត្ត	0	1	2	3	4	5
ខ្ញុំខ្លាចមនុស្សដែលមានជំងឺផ្លូវចិត្តពីព្រោះពួកគេអាចនឹងបង្ករគ្រោះថ្នាក់ដល់ខ្ញុំ	0	1	2	3	4	5
បុគ្គលដែលមានជំងឺផ្លូវចិត្តទំនងជា មិនអាចបំពេញតួនាទីជាឪពុកម្តាយល្អបានទេ	0	1	2	3	4	5
ខ្ញុំនឹងមានភាពអាម៉ាស់ ប្រសិនបើមាននរណាម្នាក់ក្នុងគ្រួសារខ្ញុំកើតជំងឺផ្លូវចិត្ត	0	1	2	3	4	5
ខ្ញុំជឿថា ជំងឺផ្លូវចិត្តនឹងមិនអាចព្យាបាលឲ្យជាសះស្បើយទាំងស្រុងនោះទេ	0	1	2	3	4	5
អ្នកដែលមានជំងឺផ្លូវចិត្តគឺមិនមានលទ្ធភាពរស់នៅដោយខ្លួនឯងបានទេ ដោយសារតែពួកគេមិនអាចទទួលខុសត្រូវបាន	0	1	2	3	4	5
មនុស្សភាគច្រើននឹងមិនអាចក្លាយជាមិត្តជិតស្និទ្ធជាមួយអ្នកដែលមានជំងឺផ្លូវចិត្តបានទេ	0	1	2	3	4	5
អាកប្បកិរិយារបស់អ្នកដែលមានជំងឺផ្លូវចិត្តមិនអាចប៉ាន់ស្មានទុកមុន បានទេ	0	1	2	3	4	5
ជំងឺផ្លូវចិត្តទំនងជាមិនអាចជាសះស្បើយទេ បើមិនមានការព្យាបាល	0	1	2	3	4	5
ខ្ញុំនឹងមិនអាចទុកចិត្តលើការងាររបស់អ្នកដែលមានជំងឺផ្លូវចិត្ត ដែលត្រូវបានចាត់ឲ្យមកធ្វើការជាមួយក្រុមការងារខ្ញុំទេ	0	1	2	3	4	5

ការវាតយតម្លៃពីភាពស្មោះត្រង់ក្នុងការបង្រៀន

ឈ្មោះគ្រូបង្រៀន:_____ _____សាលា_____ ថ្នាក់ទី_____

មេរៀន: _____

រយៈពេលបង្រៀន: _____ម៉ោងចាប់ផ្តើម:___ _____ម៉ោងបញ្ចប់_____

កាលបរិច្ឆេទនៃការវាយតម្លៃ: _____

ឈ្មោះអ្នកវាយតម្លៃ: _____

N	តារាងបញ្ជី ១ = មិនសម្រេច ២ = សម្រេចខ្លះ ៣ = សម្រេច			
១. មាតិកា				
1.1	អនុវត្តន៍តាមគោលបំណងមេរៀនដែលបានរៀបរាប់ក្នុងមគ្គុទេសក៍	១	២	៣
1.2	លើកយកគោលគំនិតសំខាន់ៗដែលបានរៀបរាប់ក្នុងមគ្គុទេសក៍	១	២	៣
1.3	រៀបចំសកម្មភាពដូចដែលបានណែនាំ	១	២	៣
២. ដំណើរការបង្រៀន				
2.1	អនុវត្តន៍តាមជំហាននៃមេរៀន	១	២	៣
2.2	ប្រើវិធីសាស្ត្រត្រឹមត្រូវ (វិធីសាស្ត្រដែលបានរៀបរាប់)	១	២	៣
2.3	មានពេលគ្រប់គ្រាន់និងសមរម្យសម្រាប់សកម្មភាព ▪ ពេលសម្រាប់ណែនាំ/បង្រៀន ▪ ពេលសម្រាប់ពិភាក្សា ពេលសម្រាប់ធ្វើបទបង្ហាញ ▪ ពេលសម្រាប់អនុវត្តន៍ ▪ ផ្សេងៗ:	១	២	៣
៣. សម្ភារ				
3.1	ប្រើសម្ភារបង្រៀនត្រឹមត្រូវ (ឧ. ក្រដាសសន្លឹកកិច្ចការ រូបភាពជាដើម)	១	២	៣

3.2	ផ្តល់ឧទាហរណ៍ដែលពាក់ព័ន្ធ	១	២	៣
៤. ការទទួលស្គាល់ពីសិស្ស				
4.1	សិស្សចូលរួមក្នុងការពិភាក្សា	១	២	៣
4.2	សិស្សឆ្លើយតបចំពោះមេរៀន	១	២	៣
4.3	សិស្សបង្ហាញចំណាប់អារម្មណ៍ក្នុងមេរៀន	១	២	៣
៥. គុណភាពនៃការបង្រៀន				
5.1	គ្រូយល់ពីខ្លឹមសារមេរៀន	១	២	៣
5.2	គ្រូរៀបចំមេរៀនសម្រាប់បង្រៀន	១	២	៣
5.3	គ្រូបង្ហាញពីភាពសប្បាយរីករាយ	១	២	៣
5.4	គ្រូបង្ហាញថាមានទំនុកចិត្ត	១	២	៣

ការវាស់ស្ទង់មតិសម្រាប់គ្រូបង្រៀន

N	ប្រយោគ 1 = **មិនយល់ស្របសោះ 2 = យល់ស្របខ្លះអត់ខ្លះ 3 = យល់ស្រ**			
ជំនឿ				
1	កម្មវិធីនេះអាចប្រើបានក្នុងថ្នាក់រៀនរបស់ខ្ញុំ	1	2	3
2	កម្មវិធីនេះប្រហែលជាត្រូវការពេលវេលាច្រើនលើផ្នែករបស់ខ្ញុំ ជាងតម្លៃរបស់វា	1	2	3
3	ខ្ញុំមានការព្រួយបារម្ភតិចតួចដែរ ថាកម្មវិធីនេះអាច មានផលប៉ះពាល់អវិជ្ជមានខ្លះដល់សិស្សរបស់ខ្ញុំមួយចំនួន	1	2	3
4	ខ្ញុំចូលចិត្តពីយុទ្ធសាស្ត្រនិងវិធីសាស្ត្រដែលបានប្រើក្នុងកម្មវិធីនេះ	1	2	3
5	សរុបមក ខ្ញុំជឿជាក់ថាកម្មវិធីនេះនឹងផ្តល់អត្ថប្រយោជន៍ដល់សិស្សរបស់ខ្ញុំ	1	2	3
6	កម្មវិធីនេះមានប្រយោជន៍សម្រាប់ខ្ញុំ និង សិស្សរបស់ខ្ញុំ	1	2	3
7	កម្មវិធីនេះហាក់ដូចជាមានភាពស្មុគស្មាញក្នុងការប្រើប្រាស់នៅក្នុងថ្នាក់រៀនរបស់ខ្ញុំ	1	2	3
ការជឿជាក់លើសមត្ថភាពខ្លួនឯង				
8	ខ្ញុំបានប្រើពេលវេលាដែលបានត្រៀមទុកសម្រាប់ សកម្មភាពបង្កើនដល់ការសិក្សារៀនសូត្រ	1	2	3
9	ខ្ញុំប្រាប់សិស្សពីលទ្ធផលនៃការសិក្សាជាក់លាក់នៃមេរៀន	1	2	3
10	ខ្ញុំចែករំលែកដល់សិស្សពាល់ចំណេះដឹងដែលមានលក្ខណៈត្រឹមត្រូវនិងពិតប្រាកដ	1	2	3
11	ខ្ញុំត្រួតពិនិត្យការចូលរួមរបស់សិស្សក្នុងអំឡុងពេលរៀន	1	2	3
12	ខ្ញុំទទួលបានជោគជ័យក្នុងការរក្សាបរិយាកាសថ្នាក់រៀនជាវិជ្ជមាន	1	2	3
13	ខ្ញុំកែសម្រួលសកម្មភាពសិក្សារនិងការបង្រៀនទៅតាមតម្រូវការ	1	2	3
14	ខ្ញុំផ្តល់ការពន្យល់ឬឧទាហរណ៍បន្ថែម នៅពេលដែលសិស្សយល់ច្រឡំ	1	2	3
ភាពសប្បាយរីករាយ				
15	ខ្ញុំមានបំណងខិតខំប្រឹងប្រែងដើម្បីអនុវត្តន៍កម្មវិធីឱ្យបានល្អ	1	2	3
16	ខ្ញុំអានសៀវភៅមគ្គុទេសគ៍ដោយយកចិត្តទុកដាក់	1	2	3
17	ខ្ញុំចំណាយដើម្បីពេលរៀបចំមុនពេលបង្រៀនមេរៀន ស្តីពីសុខភាពផ្លូវចិត្ត	1	2	3
18	ខ្ញុំមានឆន្ទៈក្នុងការសាកល្បងកម្មវិធីនេះនៅក្នុងថ្នាក់រៀនរបស់ខ្ញុំ	1	2	3
19	ខ្ញុំព្យាយាមអស់ពីសមត្ថភាពដើម្បីធ្វើឱ្យមេរៀនស្តីពីសុខភាពផ្លូវចិត្តមានការចាប់ អារម្មណ៍	1	2	3
20	ខ្ញុំរីករាយក្នុងការបង្រៀនមេរៀនស្តីពីសុខភាពផ្លូវចិត្ត	1	2	3

កាលវិភាគសម្រាប់ការបណ្តុះបណ្តាលថ្ងៃទី៣
ការណែនាំលម្អិតពីការប្រើសៀវភៅមគ្គុទេស៍ផ្នែកសុខភាពផ្លូវចិត្តនៅសាលារៀន

ម៉ោង	ប្រធានបទ	ការពិពណ៌នា និង សកម្មភាព	អ្នកសម្របសម្រួល
07:30 – 8:00	ការចុះឈ្មោះ	• ការមកដល់នៃអ្នកចូលរួម	កញ្ញ ប៊ុណ្ណារី និង កញ្ញ ចាន់ថន
08:00-09:00	ការណែនាំពីម៉ូឌុល	• ការបង្ហាញពីការប្រើម៉ូឌុល និង បទបង្ហាញសង្ខេបពីម៉ូឌុលទាំងប្រាំមួយ	លោក ប៊ុណ្ណា
09:00-10:00	ការណែនាំពីម៉ូឌុល និង ប្រភពឯកសារលើអ៊ីនធឺណេត (អនឡាញ)	• តំណភ្ជាប់ និង លេខកូដចូលទៅម៉ូឌុល • ការសាកល្បងចូលរកឯកសារ និង រក្សាទុកឯកសារ •	លោក ប៊ុណ្ណា
10:00-10:30	***សម្រាកអាហារសម្រន់***		
10:30-12:00	ធ្វើការលើម៉ូឌុលដោយលំអិតនិងកំណត់ផែនការការងារជាសេចក្តីព្រាង	• ការពិភាក្សាជាក្រុម • តើសកម្មភាពនិងសារសំខាន់ៗសម្រាប់ម៉ូឌុលនីមួយៗគឺជាអ្វី? • ការគ្រប់គ្រងពេលវេលាក្នុងការអនុវត្តសកម្មភាពនិងសារសំខាន់ៗ។	លោក ប៊ុណ្ណា
12:00-13:30	***សម្រាកអាហារថ្ងៃត្រង់***		
13:30-14:30	ធ្វើធ្វើការលើម៉ូឌុលដោយលំអិតនិងកំណត់ផែនការការងារជាសេចក្តីព្រាង	• ការពិភាក្សាជាក្រុម • តើសកម្មភាពនិងសារសំខាន់ៗសម្រាប់ម៉ូឌុលនីមួយៗគឺជាអ្វី? • ការគ្រប់គ្រងពេលវេលាក្នុងការអនុវត្តសកម្មភាពនិងសារសំខាន់ៗ។	លោក ប៊ុណ្ណា
14:30-15:30	***សម្រាកអាហារសម្រន់***		
15:30 - 16:30	ធ្វើធ្វើការលើម៉ូឌុលដោយលំអិត	• បទបង្ហាញពីសកម្មភាព និង សារសំខាន់ៗក្នុងម៉ូឌុលពេលបង្រៀន	លោក ប៊ុណ្ណា
16:30 – 17:00	ឆ្លុះបញ្ចាំងកក្រុម	• សំណួរ និង ចម្លើយ	លោក ប៊ុណ្ណា

លិខិតជូនដំណឹងស្តីពីការព្រមព្រៀងចូលរួមក្នុងការសិក្សាស្រាវជ្រាវ

កាលបរិច្ឆេទ.....

ជូនចំពោះគ្រូបង្រៀន
ខ្ញុំឈ្មោះ កឿន ប៊ុណ្ណា ជាគ្រូបង្រៀននៅវិទ្យាស្ថានជាត់អប់រំកាយ និង កីឡា
និងជានិស្សិតថ្នាក់បណ្ឌិតនៅសាកលវិទ្យាល័យជាតិវៀតណាម។ កំពុងធ្វើការសិក្សាស្រាវជ្រាវស្តីពី
“**ការវាយតម្លៃពីប្រសិទ្ធិភាពនៃវគ្គបណ្តុះបណ្តាលស្តីពីចំណេះដឹងសុខភាពផ្លូវចិត្តសម្រាប់គ្រូបង្រៀននៅកម្ពុជា**” ។

ខ្ញុំមានបំណងអញ្ជើញអ្នកចូលរួមក្នុងការសិក្សាមួយនេះ ហើយប្រសិនបើអ្នកយល់ព្រម
អ្នកនឹងត្រូវបានជ្រើសរើសឱ្យស្ថិតនៅក្នុងក្រុមមួយរវាងក្រុមមិនទទួលបានការអន្តរាគមន៍
និងក្រុមទទួលបានការអន្តរាគមន៍។ ក្រុមទាំងពីរ តម្រូវឱ្យបំពេញកម្រងសំណួរអំពី:
ពត៌មានផ្ទាល់ខ្លួននិងស្ថានភាពជីវភាពគ្រួសារ ជំនឿនិងការយល់ឃើញទាក់ទងនឹងជំងឺផ្លូវចិត្ត
ចំណេះដឹងស្តីពីសុខភាពផ្លូវចិត្ត និង សំណួរសាកល្បងដែលមាននៅក្នុងកិច្ចតែងការបង្រៀន
មុននិងក្រោយការសិក្សា។ ដោយឡែក ក្រុមទទួលបានការអន្តរាគមន៍
តម្រូវឱ្យចូលរួមវគ្គបណ្តុះបណ្តាលចំនួនពីរថ្ងៃ
និងបន្តបង្រៀនចំណេះដឹងស្តីពីសុខភាពផ្លូវចិត្តផ្អែកតាមកិច្ចតែងការបង្រៀន
ដល់កូនសិស្សរបស់ពួកគេ ១ ម៉ោង ក្នុងមួយសប្តាហ៍ សម្រាប់រយៈពេល ៦សប្តាហ៍។

ការឆ្លើយសំណួរ គឺជាការស្ម័គ្រចិត្ត ហើយលោកអ្នកមានសិទ្ធិក្នុងការបញ្ចប់ការឆ្លើយសំណួរទាំងនេះ
នៅពេលណាក៍បាន ដោយហេតុផលអ្វីក៍បាន។ ចម្លើយរបស់អ្នក នឹងត្រូវរក្សាជាការសម្ងាត់
និងមិនត្រូវបានបង្ហាញដល់គ្រូដទៃ ឬនាយកសាលាឡើយ។ របាយការណ៍ស្រាវជ្រាវ
នឹងមិនបង្ហាញអត្តសញ្ញាណរបស់អ្នកឆ្លើយសំណួរ ឬបង្ហាញចំឡើយជាលក្ខណៈបុគ្គលទេ។

ប្រសិនបើលោកអ្នក មានសំណួរឬការព្រួយបារម្ភណាមួយ សូមទាក់ទងមកខ្ញុំ តាមរយៈទូរស័ព្ទ
(៨៥៥) ១២ ៩៤២ ៩៦៤ ឬ អ៊ីម៉ែល: bunnapsyeng@gmail.com
ខ្ញុំទន្ទឹងរង់ចាំការចូលរួមរបស់លោកអ្នក។

សូមអរគុណច្រើន!
កឿន ប៊ុណ្ណា

ការព្រមព្រៀងរបស់គ្រូបង្រៀនក្នុងការចូលរួមការសិក្សាស្រាវជ្រាវ

តាមរយៈការចុះហត្ថលេខាខាងក្រោម មានន័យថា ខ្ញុំយល់ព្រមចូលរួមក្នុងការសិក្សា
"ការវាយតម្លៃប្រសិទ្ធិភាពនៃវគ្គបណ្តុះបណ្តាលស្តីពីសុខភាពផ្លូវចិត្តសម្រាប់គ្រូបង្រៀននៅកម្ពុជា"
ដែលត្រូវបានធ្វើការសិក្សាស្រាវជ្រាវដោយ លោក កឿន ប៊ុណ្ណា
សាស្ត្រាចារ្យនៅវិទ្យាស្ថានជាតិអប់រំកាយនិងកីឡា
និងជានិស្សិតថ្នាក់បណ្ឌិតនៃសាកលវិទ្យាល័យជាតិវៀតណាម។

ខ្ញុំយល់ស្រប:
ខ្ញុំនឹងចូលរួមក្នុងក្រុមណាមួយរវាងក្រុមមិនទទួលបានការអន្តរាគមន៍ឬក្រុមទទួលបានការអន្តរាគមន៍តាមរយៈកាចាប់ឆ្នោតព្រាវ
ខ្ញុំនឹងឆ្លើយសំណួរអំពី ជីវៈប្រវត្តិនិងស្ថានភាបសេដ្ឋកិច្ចសង្គម ជំនឿអំពីជំងឺផ្លូវចិត្ត
ចំណេះដឹងស្តីពីសុខភាពផ្លូវចិត្ត និង សំណួរស្តីពីចំណេះដឹងសាល្បង។
កម្រងសំណួរនេះនឹងចំណាយពេលប្រហែល 30 នាទីដើម្បីឆ្លើយ
ខ្ញុំមានសិទ្ធិបឈ្បប់ការឆ្លើយសំណួរគ្រប់ពេលវេលាដោយមិនចាំបាច់មានហេតុផល
ការឆ្លើយតបរបស់ខ្ញុំនឹងមិនត្រូវបានលាតត្រដាងដល់គ្រូបដទៃទៀតឬនាយកសាលាទេ
របាយការណ៍ស្រាវជ្រាវនឹងមិនបង្ហាញឈ្មោះរបស់ខ្ញុំឬការឆ្លើយតបផ្ទាល់របស់ខ្ញុំទេ

_____ _____
ហត្ថលេខារបស់គ្រូ ឈ្មោះរបស់គ្រូ

_____
កាលបរិច្ឆេទ...../...../.....

លិខិតជូនដំណឹងមាតាបិតានៃការសិក្សាស្រាវជ្រាវ

សូមគោរពជូន
មាតាបិតា ឬ អាណាព្យាបាល

ខ្ញុំបាទឈ្មោះ កឿន ប៊ុណ្ណា ជានិស្សិតថ្នាក់បណ្ឌិតនៃសាកលវិទ្យាល័យជាតិវៀតណាម។
ខ្ញុំបាទកំពុងធ្វើការសិក្សាមួយស្តីពី
“**ការវាយតម្លៃប្រសិទ្ធិភាពវគ្គបណ្តុះបណ្តាលសុខភាពផ្លូវចិត្តសម្រាប់គ្រូបង្រៀននៅកម្ពុជា**” ហើយការសិក្សានេះ នឹងធ្វើឡើងនៅក្នុងសាលាដុនបូស្កូ-ទឹកថ្លា ដែលទទួលបានការអនុញ្ញាតពី **បងស្រី តេរេសា ទូរអេឡ** នាយិកានៃវិទ្យាល័យដុនបូស្កូ-ទឹកថ្លា។
ផ្នែកមួយនៃការសិក្សានេះ នឹងតម្រូវឱ្យមានការចូលរួមពីសិស្សានុសិស្សថ្នាក់ទី៧ ទី៨ ទី១០ និង ទី១១ ។ ពួកគេនឹងចូលរួមឆ្លើយសំណួរមួយចំនួនទាក់ទងនិងសុខភាពផ្លូវចិត្តប្រហែលជា ១៥នាទី **និងចូលរួមរៀនពីសុខភាពផ្លូវចិត្ត១មួយរាល់សប្តាហ៍រយៈពេលប្រាំមួយប្តាហ៍** ។

រាល់ចម្លើយរបស់ពួកគេ នឹងត្រូវរក្សាជាការសម្ងាត់
ហើយរបាយការណ៍ស្រាវជ្រាវនឹងមិនបង្ហាញអត្តសញ្ញាណរបស់អ្នកឆ្លើយសំណួរ ឬបង្ហាញចម្លើយជាលក្ខណៈបុគ្គលឡើយ។ ចំពោះការចូលរួមនេះ ពួកគេនឹងទទួលបានប៊ិចមួយ និងហ្វឺតហៃឡាយមួយ ។

អាស្រ័យដូចបានជម្រាបជូនខាងលើ ខ្ញុំបាទសុំការអនុញ្ញាតដើម្បីអោយសិស្សានុសិស្សបានចូលរួមក្នុងការសិក្សាមួយនេះ ដោយក្តីអនុគ្រោះ។
ប្រសិនបើ អស់លោកអ្នកមានសំណួរឬការព្រួយបារម្ភណាមួយ
សូមទាក់ទងមកខ្ញុំបាទតាមរយៈលេខទូរស័ព្ទ០១២ ៩៤២៩៦៤ ឬ អ៊ីម៉ែល:
bunnapsyeng@gmail.com

ធ្វើនៅភ្នំពេញ ថ្ងៃទី២៦ ខែមីនា ឆ្នាំ២០១៨

កឿន ប៊ុណ្ណា