Effects of a Brief Educational Intervention on Mental Health Literacy in Adolescents

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DEDICATION

This dissertation is dedicated to all the adolescents I have known, and those I have yet to meet, who have suffered in silence due to a mental health condition. Some have confided in me their great pain, and others have shut me out. Although some have already left this Earth while they were young, unable to endure their affliction, some have fought on and survived through the torment. It was not an easy path for them, and they bear the battle scars of drug and alcohol addiction, domestic abuse, self-harm, and suicide attempts. It is through their resilience and trust in me during their worst times that I found inspiration to use my intuition and academic prowess to bring stability and hope to all adolescents in the future.

ACKNOWLEDGEMENTS

I would like to thank my committee members Dr. Lora Beebe, Dr. Knar Sagherian, Dr. Mitsunori Misawa, and Dr. Qi Sun for your continuous patience and kindness while I piece together this dissertation, and for answering all my numerous questions with grace. Dr. Sagherian was instrumental in helping me think critically about methods and instruments, which was not an easy task. I would also like to thank Dr. Misawa, who helped me find the perfect theory for my dissertation. Your guidance on where to look was a great relief to me and I am so proud of how it all fits together so well. Dr. Sun, I thank you for all your feedback and help with the theory and your suggestions gave me the clarity I needed to move forward. It is professors like you who inspire PhD hopefuls to work hard and complete their dissertation, even when it seems tough or impossible.

I would like to acknowledge Dr. Lora Beebe for her enduring patience and encouragement to help me get to this defense. Since day one, Dr. Beebe has shown interest and certainty in my topic and my abilities to do research. Her years of experience in mental health and research gave me great confidence that I had someone on my side to help me do the best research possible, even as a student with very little experience. It has been such an honor to work with Dr. Beebe.

Although not on my committee, I would like to thank Ms. Cary Springer, statistician extraordinaire, and Dr. Sandra Thomas, Director of the PhD program at the College of Nursing. Ms. Springer was not only instrumental in helping me devise the proper statistical tests and to get *p*, but came to help at the drop of a hat. Dr. Thomas's kind but firm temperament kept me going and working through some of the most trying times. Her experience, experiences, and ability to communicate helped me believe that "I can do that too." Of course, the afternoon coffee helps as well.

Lastly, I would like to thank my husband Theodore, who (still) believes I can do anything.

ABSTRACT

Mental health conditions (MHCs) such as depression and anxiety are prevalent in adolescents, with over 20% diagnosed with at least one condition. Many adolescents also have untreated MHCs, where some research indicates that over 40% of adolescents categorized as having major depression did not receive treatment. Untreated MHCs can last for years, culminating in adulthood thus causing problems with employment, education, relationships, and overall productivity. Although there are school-based programs created for adolescents to educate them on MHCs, these programs are not widespread due to various factors such as time, cost, and teacher inexperience. What is needed is an approach that incorporates these factors into a prevention program targeting young adolescents.

The purpose of this study is to examine the effects of a one-hour mental health literacy education (MHLE) upon mental health literacy (MHL) scores in 68 adolescents attending school, grades 6 through 8. Desired outcomes are: 1) increased mental health literacy scores for students and 2) acceptability by teachers who gave the presentation.

A randomized controlled trial (RCT) design was used between two schools and 5 classes, totaling 68 students. Data was collected from the students using the Mental Health Literacy Questionnaire (MHLq) 1 week before (pre-test), immediately after (post-test), and one month after (follow-up) the educational intervention (MHLE). A repeated measures ANOVA was used to analyze differences between groups.

There was a significant interaction between groups over time (p= 0.012). The experimental group showed significant differences in MHL scores from pre-test to post-test (p= 0.004) and pre-test to follow-up (p= 0.002), with no difference from post-test to follow-up (p= 0.899). The control group did not show any differences in scores between tests. Teachers reported that the MHLE was appealing, suitable, and easy to use.

While a relatively small sample from two sites, this study indicates that adolescent mental health literacy can be improved with interventions that are time and resource efficient. This study also shows that these improvements can be accomplished by teachers who do not have an extensive background in mental health while still being easy to learn and implement.

PREFACE

"So are you just supposed to stop trying?" my disgruntled husband said as we were leaving the nursing building at my former community college. We were there to get a letter stating I left in good terms which I needed to apply to a new nursing program in another state. I was a student at that school about 10 years before, and I had sworn I would never go back to nursing after my experience there. But there I was, looking to get a letter so I could try again and maybe, this time, I would be the nurse I had thought I was meant to be. Even though I laughed at my husband's remark, secretly happy that he experienced firsthand their classic rude and pompous behavior, I was scared that I could be making the same mistake again. I did not want to have my pride hurt a second time.

My situation is not unique; many students have left school only to return and try again. Though the reasons for returning may be different, the feeling of fear and uncertainty would be a common theme in all these circumstances. What separates those who will from those who won't is a matter of understanding your fear and either putting it aside or using it to your advantage.

In order to progress in this research, I had to return and try again at various points. Sometimes it wasn't a big deal, and sometimes, it was close to the end. However, every time I made a mistake and a new "fear was unlocked," I had to find a creative way to get out of it or quit. When I felt close to giving up, I remembered what my husband said and I would laugh and then push myself to overcome my perceived inability.

I will be the first to tell you that research like this is not easy, and is wrought with potholes, craters, and landmines. My chosen population, the adolescents, is probably some of the most difficult human beings to work with, whether they mean it or not. However, as I learned, you have to grasp this ahead of time and come to the research table with every tool possible to keep you level-headed and looking forward.

I learned a lot about research working on this dissertation, but more importantly, I learned about the "background stuff" I need to endure and finish. First, be aware that you do not know what will happen and that there will be setbacks. Second, remember that your research is not only important to you, but important to your field, and you are contributing to knowledge. Third, try not to take rejection from your participants personally. And last, do not stop trying!

TABLE OF CONTENTS

CHAPTER I 1

Mental Health Literacy 2

Theoretical Framework 3

Social Cognitive Theory (SCT) 4

Pender's Health Promotion Model (HPM) 4

Experiential Learning Theory 6

Study Aim 9

Methodology 9

Implications 10

References 11

CHAPTER II The State of Nursing Science - Mental Health Literacy 15

Abstract 17

Introduction 17

Method 18

Results 19

Nursing Students 19

Working Nurses 24

Women and Mothers 26

Across the Lifespan 28

Discussion 29

Implications 33

References 35

Appendix 41

CHAPTER III Mental Health Literacy: Concept Analysis Using Rodgers' Evolutionary Method 50

Abstract 52

Introduction 52

Purpose 53

Background 53

Design 56

Preconceived Definition 56
Method 58
Search Methods 58
Findings 59
Definitions, Uses and Surrogate Terms 59
Antecedents 60
Attributes 61
Consequences 61
Exemplar of Mental Health Literacy 61
Discussion 62
Justification of Concept Analysis 62
Definition to Fit Nursing 63
Impact on Nursing 64
Conclusion 65
References 66
Appendix ..... **Error! Bookmark not defined.**3
CHAPTER IV A Randomized Controlled Trial for a Brief Educational Intervention to Improve Mental Health Literacy in Adolescents 75
Abstract 77
Introduction 77
Materials and Methods 78
Study design 78
Participants and Setting 78
Procedures 79
The Intervention – Mental Health Literacy Education (MHLE) 79
Power Analysis and Ethical Considerations 80
Measures 80
MHLq 80
AIM IAM FIM 80
Statistical Analysis 80
Results 81

Discussion 83
Limitations 84
Conclusion 84
References 85
CHAPTER V CONCLUSION 87
Summary 88
Theoretical Implications 90
Research Implications 90
Nursing Implications 93
Education Implications 93
Policy Implications 94
Conclusion 95
References 97
Appendix 100
VITA 152

LIST OF TABLES

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 42
Table 2. Group Demographics at Pre-Test 81
Table 3. Average MHL Scores at Three Time Points 82
Table 4. Group Characteristics at Pre-Test 82

LIST OF FIGURES

Figure 1. Kolb's learning cycle 7
Figure 2. Two learning dimensions with corresponding modes 8
Figure 3. Flow chart of literature search and selection 41
Figure 4. Antecedents, Attributes, and Consequences of Mental Health Literacy 73
Figure 5. Expanded Definition of Mental Health Literacy for Nurses 74

CHAPTER I

Introduction

In the United States, adolescent mental health is not improving. Mental health conditions (MHCs) are any psychological or behavioral condition defined by the DSM-5-TR, such as depression, anxiety, anorexia nervosa, narcolepsy, and autism spectrum disorder. For adolescents, common mental health conditions are depression and anxiety, with over 15% of adolescents diagnosed with depression (SAMHSA, 2025). These numbers however, do not include those who are undiagnosed but may have symptoms. For example, in 2023, over 20% of adolescents aged 12 to 17 were currently diagnosed with a mental health condition. Also in 2023, approximately 40% of high school students disclosed on the Youth Risk Behavior Survey that they felt sad and hopeless for at least two weeks in a row and that it impaired their daily life (CDC, 2024, p.56). Furthermore in 2023, approximately 40% of adolescents with depression symptoms disclosed that they did not receive mental health treatment, even though over 41% of these adolescents perceived the need for treatment (SAMHSA, 2024). These percentages were very similar for 2024 (SAMHSA, 2025), highlighting a significant gap in mental health care for adolescents in how they recognize, prevent, and manage a mental health condition.

Billions of dollars have been spent and allocated on adolescent mental health with much of the money funding the standard approach to mental health, where treatment occurs once symptoms begin or are noticed (Kingson, 2022; The White House, 2022). Even though much research has been dedicated to adolescent mental health prevention and its benefits (Bitsko et al., 2022), prevention-focused interventions are not widespread. Using schools to improve outreach, comprehensive mental health programs and initiatives for adolescents usually support hiring of psychologists or other mental health professionals or increasing access to mental health and family services (The White House, 2022). Those who are with the adolescents most of the time during school, such as teachers, are generally not included in these strategies. Although identified by the U.S. Surgeon General as frontline members of the mental health team, many teachers are not trained to provide mental health services or identify symptoms of a MHC (Hoover & Bostic, 2021). Previous research has shown that only 58.6% of all school districts provided funding for mental health and that 31.6% of all classes had a teacher that was trained to coordinate mental health care (Kann et al., 2007). Funding for training and support for teachers

has historically required school districts to petition for massive federal grants, or push for legislative action or collective bargaining (Flannery, 2022).

Funding limitations and the extra work to obtain funding for mental health initiatives in schools may be the main force behind many schools not including mental health in the health curriculum. Additional barriers include the additional time and expense of providing teacher training in the provision of mental health services, as well as teacher reluctance to engage students on the topic of mental health (Kann et al., 2007; O'Farrell et al., 2023). The National Health Education Standards recommend 80 hours of general health instruction per academic year for grades 3 to 12 (APHA, 2012), but only 78% of all middle schools and 83.5% of all high schools nationally require mental health education (Kann et al., 2007). Despite that research has shown that there is an opportunity to reduce the incidence of MHCs during early adolescence (NLM, 2009a) and that many of these MHCs respond to cognitive-behavioral-therapy (Bitsko et al., 2022), prevention programs in schools have not substantially increased. Considering that over 70% of adolescents with an MHC do not seek treatment because they are worried about what people would think of them or that over 51% don't know where to get treatment (SAMHSA, 2025), adolescent mental health, especially preventive measures, is an important part of public health.

Mental Health Literacy

Developed by Jorm et al. (1997), mental health literacy (MHL) describes the "knowledge and beliefs about mental disorders which aid their recognition, management or prevention." Generally, MHL encompasses four main areas: ability to recognize a mental illness, knowing how to find appropriate mental health information, knowledge of risk factors and causes, of self-treatments, and of professional help available, and awareness of attitudes that promote recognition and appropriate help-seeking (Jorm et al., 1997). These areas fit into the three main principles of mental health literacy: how someone can identify, prevent, and manage a mental health condition (MHC). This also includes reducing the stigma of MHCs, as well as increasing the desire to engage in positive mental health behaviors (Jorm, 2012).

These three principles are crucial to reducing the burden of MHCs because identifying a MHC greatly reduces the time to treatment (Jorm, 2012). Delayed treatment is likely due to lower MHL which contributes to increased stigma and barriers to treatment options, thereby reducing overall interaction with any mental health services (Tambling et al., 2021). Prevention

and management are also important in that greater awareness of what an adolescent can do to prevent or manage a MHC can help reduce the incidence of a subclinical (not meeting full diagnostic criteria) MHC in childhood leading to a disabling MHC in adulthood. Studies of children who meet only the full criteria of a MHC may underestimate the burden of adolescent MHCs (Costello et al., 2016), with recent studies demonstrating that a large percentage of those who do not meet full criteria actually have at least one subclinical symptom during their lifetime (Johnson et al., 2022). These symptoms can be debilitating and can increase the overall burden of MHCs on the population.

MHL has been studied and measured all over the world in various age groups and cultures. Originally measured using a vignette approach, many new scales and tools have emerged such as the mental health literacy scale (MHLS) (O'Connor & Casey, 2015) and QuALiSMental (Loureiro, 2015). MHL has been measured in adolescents and used to develop prevention programs (Hart et al., 2016). MHL has also been successfully used as a framework to create and deliver efficient and concise mental health programs for adolescents (Ojio et al., 2019; Yamaguchi et al., 2020).

Improving someone's MHL improves their ability to recognize a MHC. This increased recognition may decrease the time to treatment. Reducing the time to treatment is an important factor in reducing the overall burden of MHCs in adolescents. Recent data on adolescent mental health shows that over 90% of adolescents who qualify as having major depression did not receive treatment in 2024 because "they thought they should have been able to handle their mental health, emotions, or behavior on their own" (SAMHSA, 2025). Therefore, improving MHL may be a direct and cost-effective way of improving mental health.

This study uses mental health literacy to parse a mental health condition into its most important aspects, reducing the time needed to learn about the condition. These aspects can then be taught to adolescents using a robust education theory, allowing this information to reach students of various backgrounds and learning strengths.

Theoretical Framework

Bandura's Social Cognitive Theory (SCT) and Pender's Health Promotion Model (HPM) were compared with Experiential Learning Theory (ELT) to determine the appropriate theory to guide this study. Kolb's experiential learning theory (ELT) was chosen to guide this study and examine the effects of the intervention on MHL in adolescents.

Social Cognitive Theory (SCT)

Developed by Albert Bandura in 1986, Social Cognitive Theory (SCT) describes how human behaviors are the result of the interaction between personal, behavioral, and environmental influences (Garcia, 2016). This interaction is called reciprocal determinism, and it is based on perceived self-efficacy and outcome expectations (Montgomery, 2002). Self-efficacy the belief that one can successfully perform an action and outcome expectations is the belief that there will be a good outcome (Garcia, 2016; Montgomery, 2002).

In SCT learning occurs by observation, and experience is not necessary to formulate consequences (Films Media Group, 2003). In SCT, there are four aspects to observational learning. These are a) attention, b) retention, c) reproduction, and d) motivation.

A distinct advantage of SCT is that self-efficacy and environment influence decisions. With SCT, adolescents have the power to shape their environment and not simply be a product of it (Films Media Group, 2003). Because adolescents are interested in learning about mental health and can take the initiative to improve their health (Georgakakou-Koutsonikou & Williams, 2017), the framing and expectations of SCT supports preventative interventions for mental health.

However, one disadvantage is that some constructs of SCT do not match the principles of MHL such as moral disengagement (Garcia, 2016). Although one could argue that moral disengagement could be a part of management of a MHC, where the adolescent will avoid reasons to excuse their actions that make someone suffer, the focus of the MHL based intervention examined in this dissertation is prevention. Discussions of behaviors related to moral disengagement are more likely to reflect on what the adolescent has done, similar to a treatment, rather than what the adolescent can do, which is prevention. Another disadvantage is that self-efficacy would have to be measured in addition to the primary outcome of MHL because of self-efficacy's influence on behaviors. Although those measures may have their advantages, the MHL based intervention examined in this dissertation, and MHL in general, do not address self-efficacy.

Pender's Health Promotion Model (HPM)

The Health Promotion Model (HPM) was developed by Nola Pender and first published in 1982 and revised in 1996. The HPM describes the biopsychosocial processes that motivate people to engage in behaviors that enhance health (Pender et al., 2015). The HPM is directed

towards nurses to assess health behaviors and create health promoting interventions (Pender et al., 2015).

In the HPM, there are 11 major concepts encompassing three categories: a) Individual characteristics and experiences, b) Behavior-specific cognitions and affect, and c) Behavioral outcomes. Within the behavior-specific cognitions and affect and behavioral outcomes categories are eight beliefs that are assessed by the nurse to help change health behaviors.

There are a few distinct advantages of Pender's HPM. The first is addressing resources and the second is competing interests. The HPM considers the level of resources available to someone, which is important when working with adolescents because they usually do not have many resources (Montgomery, 2002). These resources can be money, transportation, or even a supportive parent, and must be addressed by the nurse. The second advantage is the "competing interests" factor. Since adolescents are usually in good health, their health decisions will likely be made against competing factors such as work or school (Montgomery, 2002). Most adolescents do not have enough life experience to be concerned with health issues and therefore will likely make different health decisions than an adult. However, if the adolescent has or is starting to have a MHC, the HPM empowers them to achieve their best health, regardless of any diagnoses. This would still support preventative measures, especially if the adolescent will now seek help or treatment for disturbing symptoms they may have previously brushed off.

In contrast, the HPM has two major disadvantages. First, the HPM requires that the eight beliefs must be assessed by the nurse. Although many aspects of MHL can fit within the eight beliefs, objective measures would be needed to see how these variables affect health behavior. As of now, there are very few, if any, validated surveys that measure health promoting behaviors for mental health in adolescents. Therefore, if the HPM were to be used, MHL would need to be operationalized by a behavior such as "looking online for theories about mental health" instead of measuring MHL or something similar. Second, the HPM does not guide nurses as to what interventions to use to promote health. In this dissertation, an educational intervention will be used. Using the HPM will not only require tests to determine the effectiveness of the intervention, but it would also require some kind of test or survey to see if the eight beliefs are addressed in the participant and the intervention. This may cause a shift in analysis to the components of the HPM instead of MHL, overtaking the main goals of the study. The excessive

tests that adolescents would have to take may cause survey fatigue and corrupt the data (Roberts et al., 2010).

Experiential Learning Theory

Experiential Learning Theory (ELT) was developed by David Kolb in 1984, in a culmination of his work on a learning cycle in 1974 and proposed the theory of learning in 1978. The theory was meant to be applied in school settings for individual learners (Sternberg & Zhang, 2011, p. 16) but has been used in various fields including nursing (Mainemelis et al., 2002). ELT defines learning as obtaining knowledge through experience in which the person grasps and transforms the experience. Grasping is how someone takes in information while transformation is how someone interprets and acts on that information (Kolb, 2015, p.51). Grasping and transforming are two dimensions in ELT, and each dimension has two modes, with four learning modes in all. These modes are concrete experience (CE) and abstract conceptualization (AC) for grasping experience, and reflective observation (RO) and active experimentation (AE) for transforming experience (Mainemelis et al., 2002). See figure 1.

Concrete experience and abstract conceptualization are opposites along the grasping or prehension dimension, where concrete experience refers to apprehension, or reliance on tangible qualities, while abstract conceptualization refers to comprehension, or symbolic representation of the experience (Kolb, 2015, p. 67). Reflective observation and active experimentation exist along the transformation dimension, where reflective observation pertains to internal thoughts and reflection of an experience, called intention, and active experimentation pertains to the external manipulation of the physical world, called extension (Kolb, 2015, p. 67). See figure 2.

These modes are the various resolutions of the two learning dimensions, and a resolution can include more than one mode (Kolb, 2015, p. 307). These four modes correspond to four abilities in the ELT, which is seen in the common diagrams of the ELT cycle. These are feeling and relationships (concrete experience), watching and gathering information (reflective observation), thinking and hypothesizing (abstract conceptualization), and doing and initiative (active experimentation) (Kolb, 2015, p. 307; Sternberg & Zhang, 2011, p. 33). These skills complete the model that describes the four modes of learning: experiencing, reflecting, thinking, and acting. In order to learn, the participant must utilize all modes, although some modes may dominate more than others. For higher-order learning, more complex integration of these modes

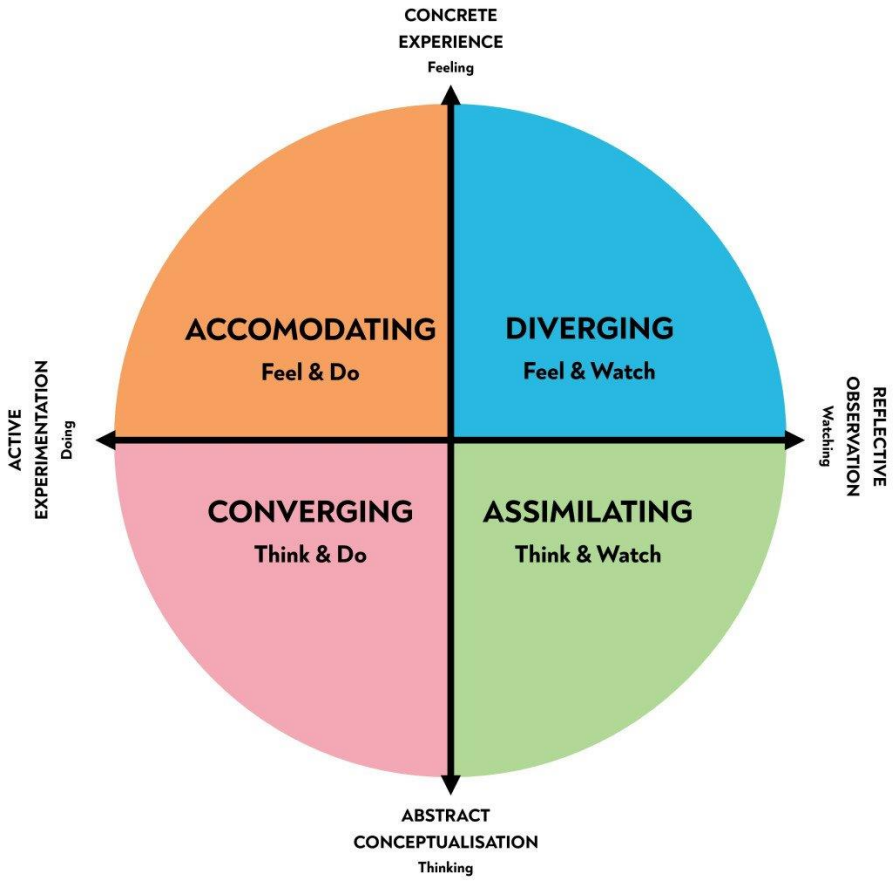


Figure 1. Kolb's learning cycle

Mcleod, S. (2024, February, 2). Kolb's Learning Styles and Experiential Learning Cycle. Simply Psychology. https://www.simplypsychology.org/learning-kolb.html

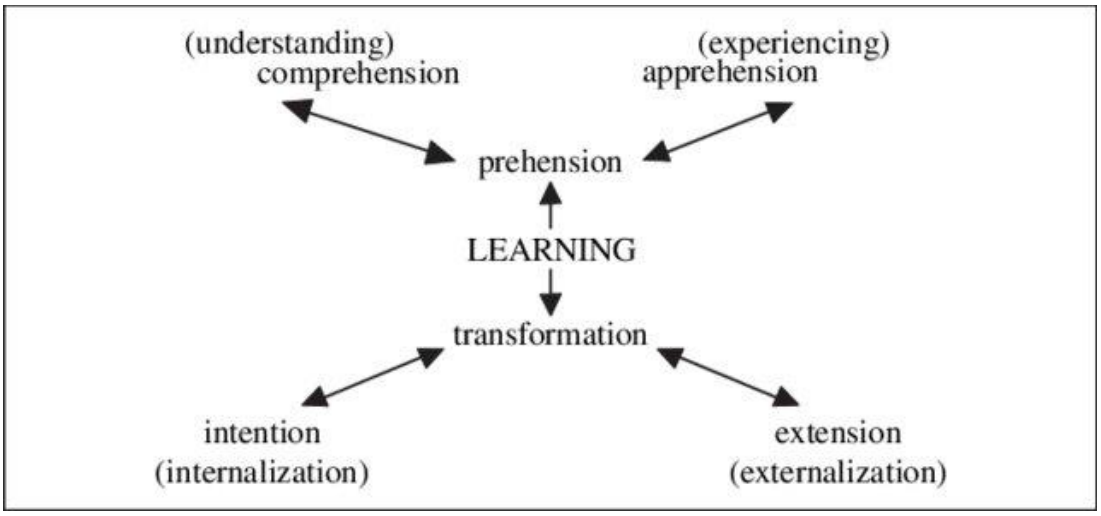


Figure 2. Two learning dimensions with corresponding modes

Dieleman, H. & Huisingh, D. (2006). Games by which to learn and teach about sustainable development: Exploring the relevance of games and experiential learning for sustainability. Adapted from Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Prentice-Hall.

must occur, where the modes are utilized more equally, indicating increased integrative complexity and growth (Kolb, 2015, p. 205).

A distinct advantage of ELT is that it is specific for learning and has a cyclical learning process. The learner can enter the process at any mode so that someone with higher MHL or exposure to MHCs can still benefit as there is no limit to reflecting, thinking, and acting (Kolb, 2015, p. 219). ELT also emphasizes learning by exposure to a concept in multiple ways. This is advantageous because the learner does not actually have to have direct, personal experience with a MHC to learn and apply knowledge. The educator would only have to show examples of the MHCs through various modes such as audio/visual aids, brochures, test questions, and live discussion. In other words, MHL can be improved through educational experiences alone. Although exposure to MHCs has been shown to reduce stigma and increase MHL (Kim et al., 2020), secondary exposure and trauma for educators and students is considered an occupational hazard and thus, discussion of personal experiences of MHCs should be avoided in classroom settings (Chrestman, 1995; NCTSN, 2011). Because of the multiple modes of learning and repetitive nature of the ELT, MHL can be increased without inducing secondary-traumatic stress. Another advantage to the ELT is that is has been used extensively in nursing research and

nursing education (Sternberg & Zhang, 2011), giving it credibility and stability for continued use in nursing research.

Study Aim

This study examined the effects of a one-hour mental health literacy education (MHLE), provided by the classroom teacher after training by the PI, upon mental health literacy (MHL) scores in 68 adolescents attending school, grades 6 through 8.

Three hypotheses were tested:

1) MHL scores will improve after the educational intervention compared to baseline;

2) MHL scores will remain elevated after follow-up compared to baseline; and

3) Teachers will find the educational intervention feasible.

Methodology

A randomized controlled trial of a mental health literacy education (MHLE) was conducted on young adolescents in middle school. Participants were students in grades 6 through 8, currently attending a school in person (n = 68). Two separate schools were included in the study. School A had one class of participants, and School B had four separate classes of participants. Research activities were conducted in a science class, which includes students from grades 6, 7, and 8. Randomization occurred at the classroom level: two classes from School A were randomized to the control (n = 29), and the remaining classes, two from School A and one from School B, were randomized to the experimental group (n = 39). The experimental group received the MHLE. Mental health literacy (MHL) was measured at three time points: T1 (pre-test): one week before the MHLE; T2 (post-test): immediately after the MHLE; T3 (follow-up): one month after the MHLE. Mental health literacy was measured using the Mental Health Literacy Questionnaire (MHLq). Feasibility by teachers was measured at T2 using the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM) assessments. The control group would receive the MHLE after data collection was complete.

A repeated measures ANOVA with a within-subjects factor of time and a between-subjects factor of group was conducted to determine differences in mean MHL scores between the two groups over time, using SPSS v31 with alpha level of significance of 0.05. Changes in mean MHL scores were significantly different for the two groups over time ($p = 0.012$). All

questions on the AIM, IAM, and FIM were “agree” and “completely agree,” implying that participating teachers found the intervention feasible. Further details about the methodology, including analysis and post-hoc comparisons, are found in Chapter IV, “A Randomized Controlled Trial for a Brief Educational Intervention to Improve Mental Health Literacy in Adolescents: Pre- and Post- Test Findings.”

Implications

The main implications for this study include improved mental health literacy in adolescents and easier access to this type of education for educators. Increasing mental health literacy is connected to reduced stigma around MHCs and greater intent to seek mental health professionals in young people (Kim et al, 2020). Development of a school-based educational program for young adolescents eases the burden to fund professional staff in schools that may already have budgets spread thin. Offering school-based mental health education that help identify and prevent a MHC has been shown to increase help-seeking and eventual use of professional services (Green et al., 2013). Further discussion of implications is in Chapter V Conclusion.

References

American Public Health Association (APHA). *Health literacy: Confronting a national public health problem.* APHA. Published November 9, 2010. https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/09/08/00/health-literacy-confronting-a-national-public-health-problem

Bitsko, R. H., Claussen, A. H., Lichstein, J., Black, L. I., Jones, S. E., Danielson, M. L., Hoenig, J. M., Davis Jack, S. P., Brody, D. J., Gyawali, S. Maenner, M. J., Warner, M., Holland, K. M., Perou, R., Crosby, A. E., Blumberg, S. J., Avenevoli, S. J., Kaminski, J. W., Ghandour, R. M. (2022, February 25). *Mental health surveillance among children — United States, 2013–2019*. Centers for Disease Control and Prevention. https://www.cdc.gov/mmwr/volumes/71/su/su7102a1.htm

Centers for Disease Control and Prevention (CDC) (2024). *Youth Risk Behavior Survey Data Summary & Trends Report: 2013–2023*. U. S. Department of Health and Human Services. https://www.cdc.gov/yrbs/dstr/index.html

Chrestman, K. R. (1995). Secondary exposure to trauma and self reported distress among therapists. In B. H. Stamm (Ed.), *Secondary traumatic stress: Self-care issues for clinicians, researchers, and educators* (pp. 29–36). https://www.ptsd.va.gov/professional/articles/article-pdf/id13404.pdf

Costello, E. J., Copeland, W., & Angold, A. (2016). The Great Smoky Mountains Study: Developmental epidemiology in the southeastern United States. *Social Psychiatry and Psychiatric Epidemiology*, *51*(5), 639–646. https://doi.org/10.1007/s00127-015-1168-1

Films Media Group. (2003). Bandura's social cognitive theory: An introduction [Film]. Davidson Films. https://www.davidsonfilms.com/products/bandura-s-social-cognitive-theory-an-introductionwith-albert-bandura-ph-d

Flannery, M. E. (2022, September 30). *How Delaware educators won mental health supports for students.* NEA.org. https://www.nea.org/advocating-for-change/new-from-nea/how-delaware-educators-won-mental-health-supports-students

Garcia, D. S. (2016). Evaluation of 3 behavioral theories for application in health promotion strategies for Hispanic women. *Advances in Nursing Science, 39*(2), 165–180. https://doi.org/10.1097/ANS.0000000000000116

Georgakakou-Koutsonikou, N., & Williams, J. M. (2017). Children and young people's conceptualizations of depression: a systematic review and narrative meta-synthesis. *Child : Care, Health & Development*, *43*(2), 161–181. https://doi.org/10.1111/cch.12439

Green, J. G., McLaughlin, K. A., Alegría, M., Costello, E. J., Gruber, M. J., Hoagwood, K., Leaf, P. J., Olin, S., Sampson, N. A., & Kessler, R. C. (2013). School mental health resources and adolescent mental health service use. Journal of the American Academy of Child and Adolescent Psychiatry, 52(5), 501–510. https://doi.org/10.1016/j.jaac.2013.03.002

Hart, L. M., Mason, R. J., Kelly, C. M., Cvetkovski, S., & Jorm, A. F. (2016). "teen Mental Health First Aid": A description of the program and an initial evaluation. *International Journal of Mental Health Systems*, *10*(1). https://doi.org/10.1186/s13033-016-0034-1

Hoover, S., & Bostic, J. (2021). Schools as a vital component of the child and adolescent mental health system. *Psychiatric Services*, 72(1), 37-48. https://doi.org/10.1176/appi.ps.201900575

Johnson, J. C. S., Byrne, G. J., & Pelecanos, A. M. (2022). The prevalence of subthreshold psychiatric symptoms and associations with alcohol and substance use disorders: From a nationally representative survey of 36,309 adults. *BMC Psychiatry*, *22*(1), 270–270. https://doi.org/10.1186/s12888-022-03834-1

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia*, *166*(4), 182–186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *The American Psychologist*, *67*(3), 231–243. https://doi.org/10.1037/a0025957

Kann, L., Telljohann, S. K., & Wooley, S. F. (2007). Health education: Results from the school health policies and programs study 2006. *The Journal of School Health*, *77*(8), 408–434. https://doi.org/10.1111/j.1746-1561.2007.00228.x

Kim, E. J., Yu, J. H., & Kim, E. Y. (2020). Pathways linking mental health literacy to professional help-seeking intentions in Korean college students. *Journal of Psychiatric and Mental Health Nursing*, *27*(4), 393–405. https://doi.org/10.1111/jpm.12593

Kingson, J. A. (2022, September 20). *Young people are driving a rise in mental health spending*. Axios. Published September 20, 2022. https://www.axios.com/2022/09/20/millennials-gen-z-mental-health-spending

Kolb, D. A. (2015). *Experiential learning: Experience as the source of learning and development* (2nd ed.). Pearson Education Ltd.

Loureiro, L. (2015). Questionnaire for assessment of mental health literacy – QuALiSMental: Study of psychometric properties. *Referência (Coimbra), IV Série* (Nº 4), 79–88. https://doi.org/10.12707/RIV14031

Mainemelis, C., Boyatzis, R. E., & Kolb, D. A. (2002). Learning styles and adaptive flexibility: Testing Experiential Learning Theory. *Management Learning*, *33*(1), 5–33. https://doi.org/10.1177/1350507602331001

Montgomery, K. (2002). Health promotion with adolescents: Examining theoretical perspectives to guide research. *Research and Theory for Nursing Practice, 16*(2), 119–134. https://doi.org/10.1891/rtnp.16.2.119.53001

National Library of Medicine (NLM). (2009). Defining the Scope of Prevention. In Mary Ellen O'Connell, Thomas Boat, and Kenneth E Warner. (Eds), *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. National Institute of Health. https://www.ncbi.nlm.nih.gov/books/NBK32789/#ch3.s1

O'Connor, M., & Casey, L. (2015). The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. *Psychiatry Research*, *229*(1), 511–516. https://doi.org/10.1016/j.psychres.2015.05.064

O'Farrell, P., Wilson, C., & Shiel, G. (2023). Teachers' perceptions of the barriers to assessment of mental health in schools with implications for educational policy: A systematic review. *The British Journal of educational psychology*, *93*(1), 262–282. https://doi.org/10.1111/bjep.12553

Ojio, Y., Foo, J. C., Usami, S., Fuyama, T., Ashikawa, M., Ohnuma, K., Oshima, N., Ando, S., Togo, F., & Sasaki, T. (2019). Effects of a school teacher-led 45-minute educational program for mental health literacy in pre-teens. *Early Intervention in Psychiatry*, *13*(4), 984–988. https://doi.org/10.1111/eip.12746

Pender, N., Murdaugh, C., & Parsons, M. A. (2015). *Health promotion in nursing practice*. Pearson.

Roberts, C., Eva, G., Allum, N., & Lynn, P. (2010). Data quality in telephone surveys and the effect of questionnaire length: A cross-national experiment. Institute for Social and Economic Research. https://www.econstor.eu/bitstream/10419/65960/1/640266584.pdf

Sternberg, R. J., & Zhang, L. (2011). *Perspectives on thinking, learning, and cognitive styles*. Routledge.

Substance Abuse and Mental Health Services Administration (SAMHSA). (2024, July). *Key substance use and mental health indicators in the United States: Results from the 2023 National Survey on Drug Use and Health* (HHS Publication No. PEP24-07-021, NSDUH Series H-59). Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. https://library.samhsa.gov/product/2023-nsduh-report/pep24-07-021

Substance Abuse and Mental Health Services Administration (SAMHSA). (2025, July). *Key substance use and mental health indicators in the United States: Results from the 2024 national survey on drug use and health* (HHS Publication No. PEP25-07-007, NSDUH Series H-60). Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. https://library.samhsa.gov/product/2024-nsduh-report/pep25-07-007

Tambling, R. R., D'Aniello, C., & Russell, B. S. (2021). Mental health literacy: A critical target for narrowing racial disparities in behavioral health. *International Journal of Mental Health and Addiction, 21*(3), 1867–1881. https://doi.org/10.1007/s11469-021-00694-w

The White House. (July 29, 2022). Fact sheet: Biden-Harris administration announces two new actions to address youth mental health crisis. https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/07/29/fact-sheet-biden-harris-administration-announces-two-new-actions-to-address-youth-mental-health-crisis/

Yamaguchi, S., Ojio, Y., Foo, J. C., Michigami, E., Usami, S., Fuyama, T., Onuma, K., Oshima, N., Ando, S., Togo, F., & Sasaki, T. (2020). A quasi-cluster randomized controlled trial of a classroom-based mental health literacy educational intervention to promote knowledge and help-seeking/helping behavior in adolescents. *Journal of Adolescence (London, England.), 82*(1), 58–66. https://doi.org/10.1016/j.adolescence.2020.05.002

CHAPTER II

THE STATE OF NURSING SCIENCE - MENTAL HEALTH LITERACY

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Abstract

Background. Although Mental Health Literacy (MHL) has been researched for over 20 years, nursing research in this area is sparse.

Aim. In this review, the authors synthesize nursing literature focused on MHL from 1997-2023.

Method. Literature searches in CINAHL Complete and PsychInfo resulted in the inclusion of 23 published studies in this review.

Results. Nursing research on MHL is mostly descriptive in nature. Ability to draw conclusions is limited by the use of differing measurement tools across studies. Most studies report results for only one or two of the four identified MHL foci.

Conclusions. Psychiatric mental health nurse researchers are well positioned to validate and extend the body of evidence addressing mental health literacy in a variety of population groups, with the ultimate goal of developing and testing interventions to improve MHL.

Introduction

In recent years, mental health has become an increasingly important topic in various academic and practice areas such as psychology, public health, and nursing. In this review, mental health conditions (MHCs) are defined as any psychological or behavioral condition that is defined by the DSM V TR. The number of people with a MHC has been steadily increasing year after year in the US, as evidenced by 22.8% of adults with any mental health condition in 2021 (up from 21% in 2020), and 52.8% of those with any mental health condition not receiving care in 2021 (SAMHSA, 2022; NIMH, 2023). Untreated MHCs contributed to the over four million emergency room visits for adults in 2018 (Cairns et al., 2018). The Centers for Disease Control estimates that 5.8 million adolescents were diagnosed with anxiety and 2.7 million were diagnosed with depression from 2016 to 2019 (CDC, 2023). These statistics demonstrate the necessity to implement a proactive approach to improving mental health outcomes. Psychiatric nursing researchers can improve mental health outcomes by identifying prevention strategies, providing timely treatment, and mitigating the negative consequences of chronic mental health conditions. Because of their unique role in health care and proximity to patients, psychiatric nurses have an advantageous position to research a variety of strategies to improve mental health outcomes.

Increasing Mental Health Literacy (MHL) is one promising strategy to improve mental health outcomes across population groups. MHL is defined as “knowledge and beliefs about

mental disorders which aid their recognition, management or prevention" (Jorm et al., 1997, p. 182). MHL includes four main foci: (1) ability to recognize a mental health disorder (2) knowing how to find appropriate mental health information; (3) knowledge of risk factors and treatments; and (4) attitudes that promote recognition and help-seeking for mental health needs in oneself and others (Jorm et al., 1997, Jorm, 2012). Higher levels of MHL have been associated with a greater likelihood of implementing mental health promotion activities and of seeking treatment (Kim et al., 2020). While research on MHL encompasses many disciplines, few nursing scholars have examined the topic.

The purpose of this scoping review is to describe the nursing research on MHL during the past 25 years. Common topics are grouped into the following sections: (1) undergraduate nursing students, (2) working nurses, (3) women and mothers, and (4) across the lifespan.

Method

We searched CINAHL Complete and PsychInfo databases to identify nursing research starting from the year of origin of the concept of MHL. Using the terms "mental health literacy" and "nursing" to search all text, written in English, and ranging from years 1997 to 2023, a total of 313 articles were identified. Using these parameters, this search returned 124 articles from CINAHL Complete and 189 articles from PsychInfo. See Appendix for Figure 3.

Because this was a broad search using all the text, many articles identified were not related to the desired search parameters. The title of each article was read, and initial exclusion criteria were applied. Articles that were not related to nursing, mental health, or MHL were eliminated, as well as all systematic reviews, narrative reviews, scoping reviews, and meta-analyses. Some examples were titles not in English, a convention agenda, asthma care, and telehealth. Other reasons included senior citizen drug monitoring programs, social work issues, and the roles of school nurses. After duplicates were eliminated, 234 articles remained. Abstracts were read and the following criteria applied- Inclusions: teaching, learning, measuring MHL or adapting or using MHL or MHL based tools; and research must be done by, for, or with nurses. Exclusions: articles not in English, addressing only one foci of MHL, mentioning MHL without defining, describing or measuring the concept, manuscripts listed as a proposals, commentaries, or corrections, or any systematic review, narrative reviews, scoping reviews, or meta-analyses. After applying the inclusion and exclusion criteria and removing duplicates, 23 articles remained and are included in this review.

Results

The studies reviewed were completed in eleven different countries including the United States (3 studies), United Arab Emirates (2 studies), Korea (2 studies) and others. Most studies were descriptive in nature. Twenty studies assessed MHL directly with a quantitative measure. Several studies measured MHL using Jorm's (1997) vignettes, in which participants answer questions assessing aspects of MHL after reviewing a mental health vignette (Al-Yateem et al., 2017; Liu et al., 2011; Loureiro et al., 2013; Yeo et al., 2003). One qualitative study described the experiences of participants in a MHL based class (Hung et al., 2019). See Appendix for Table 1. Four major areas of MHL research were identified: (1) undergraduate nursing students-ten studies, (2) working nurses-five studies, (3) women and/or mothers-four studies and (4) across the lifespan - four studies.

Nursing Students

The ten studies reviewed addressing MHL in undergraduate nursing students consisted of three descriptive, two quasi experimental, two randomized control trials, one prospective cohort, one longitudinal, and one qualitative design. Three descriptive studies examined MHL of undergraduate students. Saito & Creedy (2021) administered the Mental Health Literacy Scale (MHLS-O'Connor & Casey, 2015) concurrently to three groups of Australian undergraduate nursing students (year 1 students, year 2 students, and year 3 students). The MHLS is a 35-item Likert-type scale that measures the following aspects of MHL: recognition of disorders, knowledge of where to seek information on mental health, knowledge of risk factors and treatments (professional and self-help), and attitudes about help seeking. Items are summed and a mean score calculated, with higher scores indicating higher MHL. The authors reported significantly higher mental health literacy in second ($p < 0.008$) and third year ($p < 0.002$) undergraduate nursing students as compared to first year students. Liu and colleagues (2018) used Jorm's vignettes (1997) in a cross-cultural design to compare attitudes toward mental health help seeking between senior undergraduate nursing students from the United States and China. Jorm's vignettes describe two cases: depressive symptoms and schizophrenic symptoms. In the Liu study, participants were randomly presented with one of the two vignettes and then responded to two open ended questions concerning 1- what, if any mental health needs they identified, and 2- what, in their opinion, would be the best way to help. While the responses of both groups demonstrated favorable attitudes toward medication, Chinese students were more

likely to suggest seeking mental health assistance from laypersons, while US students were more likely to suggest seeking mental health assistance from professionals. Unfortunately, no information about the percentage of students correctly *identifying* mental health needs was included in the published report. The final descriptive cross-sectional study was conducted by Kelly and Birks (2017) with 66 undergraduate nursing and midwifery students who had attended a Mental Health First Aid (MHFA) course at a regional university in Queensland, Australia. Using an online survey specifically designed for this study, participants were asked demographic questions, along with five Likert-type questions and six open-response questions about the MHFA course and how it applied to them and their nursing studies. The survey was evaluated for face and content validity but no psychometric properties were provided. In this study, the MHFA course was 13 hours long and was tailored to nursing and midwifery students, giving an overview of the most common MHCs in Australia, namely depression, anxiety, psychotic disorders, and substance use disorders and included instruction on crisis intervention as well as interventions for suicidality, panic attacks, overdoses and other emergencies. There was no information about how the sample was recruited. Most participants strongly agreed that the course content was personally relevant (65.63%), appropriate for nursing or midwifery students (85.94%), and would recommend the course to other students (89.06%). In the free-text question about the strengths of the MHFA course, there were favorable responses such as "very informative," "creating awareness," and "gives insight into mental illness."

Two quasi experimental designs were conducted with undergraduate nursing students, both in Portugal. The first (de Jesus Loureiro, & Brandão Valente da Costa, 2019) used the Questionnaire for Assessment of Mental Health Literacy (QuALiSMental, Loureiro et al., 2012) to evaluate the effectiveness of the MHFA (MHFA-Kitchener & Jorm, 2002) course in a convenience sample of 46 undergraduate nursing students. MHFA consisted of a total of 14 hours of instruction incorporating the following components of MHL: recognition of disorders, knowledge of where to seek information on mental health, knowledge of prevention, risk factors and treatments (professional and self-help), and attitudes about help seeking, The authors reported that MHFA was conducted (faculty not specified) over two consecutive 7-hour days; however content, activities and time spent on each aspect of MHL were absent. Students completed the QuALiSMental (Loureiro, 2015) before and immediately after attending the MHFA program. The QuALiSMental includes questions addressing each of the components of

MHL, however the numbers of questions per component and the response types were unspecified in this report. The authors reported results of McNemar's test were statistically significant for all four components of MHL. There were statistically significant increases in percentages of students correctly recognizing the disorder ($p < 0.05$), identifying appropriate prevention strategies ($p < 0.001$), and identifying appropriate professionals from whom to seek help ($p < 0.001$). de Jesus Loureiro and Figueiredo Pinto de Freitas (2020) replicated this design with a larger sample of 219 undergraduate nursing students who completed the QuALiSMental (Loureiro, 2015) before and after attending the mental health first aid (MHFA) course. Results were similar in that statistically significant improvements were reported for all four aspects of MHL. Regrettably, details of the MHFA course and of the QuALiSMental measurement tool were once again absent.

Two randomized controlled trials were conducted with nursing students. Burns et al. (2017) used a randomized controlled design (RCT) with 181 first year nursing students in Australia. Participants were randomized to a MHFA course or a wait list control group. The MHFA course consisted of two consecutive 6.5-hour days (conducted by MHFA professionals) of content on signs, symptoms and risk factors for common mental health problems like depression, anxiety, and substance use disorders using standardized MHFA materials (Kitchener & Jorm, 2004; Kitchener & Jorm, 2006). Jorm's depression vignette (1997) was administered to both groups one week prior to the MHFA course, immediately after the class, and again two months later. The authors reported results for two foci of mental health literacy: identification of mental health needs and attitudes that promote recognition and help seeking. In response to the question "what, if anything, is wrong with the person described in the vignette?", responses of depression, affective disorder and mood disorder were defined as correct identification of a mental health need. Mental health knowledge and confidence assisting with mental health needs was measured with 20 true or false statements which were "previously validated MHFA knowledge statements" (Burns et al., 2017, p. 4) The intervention group was more likely to positively identify John's condition as depression compared to the control group at all three measurement points, however this difference was not statistically significant ($F = 0.102$, $p = 0.750$). For the outcomes described as "confidence in helping", the authors reported that the intervention group had significantly higher confidence scores as compared to controls at all measurement points ($p < 0.001$). Hung et al. (2021) also conducted an RCT with

358 undergraduate nursing students in Hong Kong. Participants were randomized to a MHFA course or waitlist control group. The MHFA course was delivered over one month in four, three-hour sessions by a certified MHFA instructor. Instruction included signs and symptoms, risk factors, and crises associated with a MHC as well as tactics to help those suffering from a MHC. MHL was measured using Jorm's vignettes (1997) previously adapted for Chinese language and culture (Wong et al., 2010). The Chinese Health Questionnaire (CHQ – Cheng et al., 1990), a 12-item, Likert-type questionnaire used to screen for minor MHCs, defined as general psychological distress or minor psychiatric disorders in this study, was also used. Two other psychometrically tested surveys were used, one to measure the willingness of someone to have a relationship with a person with a MHC (defined as "social distance" in this study) and the other to measure the student's mental health first-aid intentions. These four surveys were administered immediately after randomization (pre-test), after MHFA course completion (post-test), and six months after completing the MHFA course (follow-up). The authors do not specify the exact timing of the post-test. Results showed that the MHFA course significantly improved the recognition of depression ($p < 0.01$) and schizophrenia ($p < 0.01$) and the confidence to provide help ($p < 0.01$) from pre-test to follow-up in the experimental group. Social distance and CHQ scores were also significantly improved from pre-test to follow-up ($p < 0.01$) in the experimental group, but the improvement of CHQ scores was not maintained at follow-up in the same group.

A single prospective cohort design was reviewed. Liu (2021) used Jorm's vignettes (1997) to assess the MHL of 149 senior year nursing students who completed a mental health simulation course in their nursing curriculum. This course, called vSim for Nursing Mental Health, was developed to encourage active learning in mental health nursing by assigning one scenario every week for five MHCs (severe anxiety, alcohol withdrawal, bipolar disorder, major depression and schizophrenia). Each scenario was to be completed before the topic was covered in class, and included a pre-test, the simulation, and a post-test. Details of didactic content /activities were not described. MHL scores of students completing the simulation course were compared to those of a previous cohort who did not complete the simulation course. Participants were presented Jorm's depressive and schizophrenia vignettes and then responded to a series of questions rating the perceived helpfulness of various persons (health professionals, lay people) and interventions (pharmacological, and non-pharmacological) for the person described in the vignette. No statistically significant differences were observed in identification of appropriate

professionals to assist, in ratings of the perceived helpfulness of the professionals identified, nor in perceived helpfulness of pharmacological interventions for either vignette. However, statistically significant differences were observed in the likelihood of endorsing various non-pharmacological interventions for the schizophrenia vignette only. Non simulation students more likely to endorse acupuncture ($p < 0.006$) and simulation students were more likely to endorse physical activity ($p < 0.022$) as helpful for this disorder.

McCann et al. (2009) conducted the only longitudinal examination of MHL located by this review. McCann et al. (2009) examined MHL in undergraduate nursing students in Australia using Jorm's vignettes (1997). The Jorm vignette on schizophrenia was administered to undergraduate nursing students once each year for 3 years. Students rated the perceived helpfulness of 13 professional and lay interventions (e.g. family doctor, psychiatrist, clergy and herbalists among others); the usefulness of 7 different medication interventions (e.g. antipsychotics, anti-anxiety agents); and the usefulness of 13 different non-pharmacologic interventions (e.g. relaxation, hypnosis) using an unspecified rating scale. The authors noted few differences from first to second year, but third year students were significantly more likely to rate mental health services (mental health nurses and telephone counseling, $p < 0.01$), mental health medications (sedatives and antipsychotics, $p < 0.001$) and specialized therapies (cognitive–behavioral therapy, psychodynamic therapy, $p < 0.001$) as useful compared to first- and second-year students.

A qualitative descriptive design was used by Hung et al. (2019) to capture the experiences of 25 undergraduate nursing students who participated in a 12-hour MHFA course as part of another study six months prior (Hung et al., 2021). Using purposive sampling, participants were selected to participate in a semi-structured, face-to-face interview with the authors. Participants were asked open-ended questions according to the prepared interview guide on how the MHFA course influenced their views of mental health care. Interviews were audio-recorded with consent and Braun and Clark's thematic analysis (2006) were conducted. Five themes were identified: 1) reinforced knowledge and understanding, 2) enhanced techniques and skills, 3) rectified beliefs and values, 4) improved self-awareness of personal mental health status, and 5) a heightened sense of achievement and satisfaction. The authors cautioned that the MHFA course should not be used to replace the mental health component of nursing education.

Working Nurses

Five international studies surveyed the MHL of working nurses in four countries. Three were cross-sectional and two were descriptive comparative. All the studies used a modified version of Jorm's vignettes (1997), tailored to fit the language and culture. Three cross-sectional studies measured the MHL of nurses in various positions such as school nurses, pediatric nurses, and emergency nurses. Al-Yateem et al. (2017) assessed the MHL of 290 pediatric nurses and 27 physicians at various hospitals across six emirates in the United Arab Emirates (UAE). MHL was measured with Jorm's vignettes (1997) describing post-traumatic stress disorder, depression with suicidal thoughts, and schizophrenia, labeled as "psychosis" by the authors. Psychological distress of the participants was measured using the Kessler Psychological Distress Scale (K10 – Kessler et al., 2002), a validated tool to assess psychological distress. The demographic data and the K10 scores were used to determine any factors that may affect recognition of a MHC. Results showed that less than 55% of the participants correctly identified the MHC in any vignette (53.7% for depression; 47% for PTSD; 54.3% for psychosis). Factors that were significant to choosing the correct diagnosis were work area for PTSD ($p = 0.033$), a high or low score on the K10 scale for depression ($p = 0.03$ and $p = 0.017$, respectively), and sex for psychosis ($p < 0.001$). Most unfortunately, the authors provide no details about differences based upon work area or gender, and no percentages are listed for the differing categorical variables reported. A second study by Al-Yateem et al. (2018) assessed the MHL of 328 school nurses across three emirates in the UAE using a cross-sectional design. MHL was measured using Jorm's (1997) vignettes adapted for Arabic language and culture. The three vignettes featured post-traumatic stress disorder, depression with suicidal thoughts, and psychosis. Psychological distress was again assessed using the K10 scale (Kessler et al., 2002). Results showed that less than 50% of the responses correctly identified the MHC in any vignette. More than half of the respondents selected appropriate medications for depression and psychosis, but over 39% incorrectly believed that benzodiazepines are appropriate for PTSD. Interestingly, over 85% of respondents selected "reading the Koran or Bible" as among the most helpful treatments for depression. A lower K10 score was associated with correctly identifying a PTSD diagnosis ($p = 0.018$), while a higher K10 score was associated with choosing "vitamins and minerals" as helpful treatments for depression ($p = 0.011$). K10 score was not associated with correctly identifying psychosis in the vignette describing such.

The final third cross-sectional study was a pilot study by Muga et al (2019) assessing the MHL of 37 nurses at a private hospital in Kenya. Data was collected with Jorm's depression vignette (1997). Only three participants correctly identified the MHC as depression, even though 36 of the 37 participants reported experience working with MHCs. The majority of participants felt a psychiatrist (56.8%) or counselor (32.4%) would be best for treatment, and most agreed that antidepressants were helpful medications in the scenario presented (83.8%). The results indicated extremely low MHL in Kenyan nurses in this setting – it is likely that adjustments in nursing education and training are needed to address this deficiency.

Two descriptive comparative studies were located for working nurses. Liu et al. (2011) measured and compared the MHL of nurses versus psychiatrists in a psychiatric department of a major teaching hospital in China. A culturally modified version of Jorm's (1997) depression and schizophrenia vignettes was used to assess 39 psychiatrists and 31 registered nurses (RNs). There were no significant differences between the RNs and the psychiatrists in correctly identifying a MHC. 100% of the psychiatrists and 87.1% of the RNs correctly identified depression, and 92.3% of psychiatrists and 90.3% of RNs correctly identified schizophrenia. RNs viewed antipsychotics (64.5% vs 33.3%, $p = 0.009$) and acupuncture (54.8% vs 33.3%, $p = 0.0323$) as more helpful for depression than did psychiatrists. For schizophrenia, more RNs than psychiatrists agreed that traditional healers were helpful (41.9% vs 15.14%, $p = 0.027$); whereas more psychiatrists than RNs agreed that social workers were helpful (61.5% vs 32.3%, $p = 0.021$). Both groups viewed antipsychotic medication as helpful to someone with schizophrenia, with no significant difference in percentage agreeing between the two groups.

The second descriptive comparative study was conducted by Yeo et al. (2003) in a 3,000-bed hospital in Singapore, comparing the MHL of 128 psychiatric RNs and 117 "enrolled nurses" (similar to inpatient nurses in the US and employed on any unit). MHL was measured using a modified version of the Jorm's (1997) vignettes, adding a vignette for mania and expanding treatment options. The nurses were randomly assigned one vignette and the accompanying survey. The nurses attended a 1-day and a 3-day orientation which included lectures and training on the care of psychiatric patients, but the authors did not specify if MHL was assessed before or after this training. The results showed few statistically significant differences between the responses of the psychiatric nurses and the enrolled nurses for depression and mania vignettes. Significant differences were found in the schizophrenia vignette,

where, in contrast to psychiatric RNs, enrolled nurses thought traditional healers ($p < 0.05$) and being kept at home ($p < 0.01$) were more harmful than helpful for those with schizophrenia. More psychiatric nurses than enrolled nurses agreed that it was helpful to keep those with schizophrenia at home, but the difference was not significant.

Women and Mothers

Two descriptive cross-sectional (Poreddi et al., 2021; Recto and Champion, 2017), one non-equivalent control group design (Choi, 2017), and one framework analysis (Recto & Champion, 2017) comprise the studies examining MHL in women and mothers. Poreddi et al. (2021) used a validated survey called the postpartum depression literacy scale (PoDLiS-Mirsalimi et al., 2020), to measure MHL in 279 postpartum mothers in India. Focused on postpartum depression (PPD), the PoDLiS covers seven domains of MHL including recognition of PPD, knowledge of the signs and symptoms of PPD, and attitudes towards help-seeking (Mirsalimi et al., 2020). Participants were post-partum mothers who could speak and read English, recruited from an outpatient pediatric department of a tertiary care hospital, and the PoDLiS was not translated to any of the numerous Indian regional dialects for this study. Results showed that 64.2% of the mothers were unaware of PPD but 46.2% would seek treatment for PPD symptoms. Over 60% of participants were not worried about what friends or family thought about seeking help for PPD but only 15.4% knew where to find information about PPD and only 21.8% felt able to discern the accuracy of information about PPD on the internet. Higher scores were significantly associated with older age ($p = 0.01$), higher income ($p = 0.006$), and being employed (type of employment not specified), ($p = 0.013$). Recto and Champion (2017) assessed the MHL of perinatal depression in adolescent Hispanic perinatal mothers using a modified Mental Health Literacy Scale (MHLS-O'Connor & Casey, 2015) specific to this group (Cronbach's alpha = .80) with a score range of 33 - 154 (higher scores = higher MHL). The modified MHLS was administered to 30 adolescents, (ages 14 to 20 years), recruited from a parenting program at Texas high schools. All participants were first time mothers with an average age of 17.57 years. Data was compared between adolescents who reported PPD and those who did not. Those who had identified having PPD had significantly higher MHL scores ($p = 0.03$) and were able to identify a MHC ($p = 0.03$) at higher rates than those who did not. Overall, the participants had moderate MHL scores, with a mean of 74.45 for those who reported

feeling depressed during the perinatal period and a mean score of 67.35 for those who reported not feeling depressed.

Choi (2017) conducted a non-equivalent control group pre-post test study assessing the MHL of 63 women newly immigrated to Korea after marriage who completed a mental health improvement course specially designed for immigrant women. Thirty-one women were selected for the experimental group using convenience and snowball sampling from personal contacts and multicultural centers in Seoul, Korea. The control group consisted of 32 women recruited from a non-governmental organization for immigrant women. The experimental group was placed in an 8-week training program to help them adapt to life in Korea with their husbands and children. The training program consisted of a guidebook with eight topics including "mental health problems," "monitoring mental health problems" and "utilizing community mental health services" (Choi, 2017). Each week, participants would meet individually (for an unspecified time) with a trained facilitator (from their country of origin and speaking their native language), to review one topic of the guidebook. The facilitator received 20 hours of training on the guidebook topics and in the provision of mental health resources if necessary. The authors did not specify what portion of the program addressed MHL, nor which of the 4 MHL foci were addressed, if any. Finally, the article does not specify the activities of the control group. Both groups had their MHL assessed before and after the program with the Mental Health Literacy Inventory (MHL - Hong et al., 2008, as cited in Choi, 2017), which was developed to test the MHL of Korean adults. The results showed that the experimental group significantly improved their MHL score ($p < 0.001$) from pre- to post-test while the control group significantly decreased their MHL scores over the same time period ($p < 0.001$). The author concluded that increasing MHL had positive effects on coping with acculturative stress associated with immigration and may reduce the prevalence of MHCs in this population.

A framework analysis by Recto et al. (2017) described and compared the MHL framework by Jorm (2012) and the Health Literacy Model by Paasche-Orlow and Wolf (2007) for application to pregnant adolescents. An overview of each model was presented along with a systematic analysis of each model using Walker and Avant's (2011) criteria. Predictor and mediating variables were compared between each framework and the applicability of each framework to pregnant adolescents was assessed. The authors offered a modified health literacy model incorporating aspects of both frameworks, regrouping concepts, and expanding

relationships. These modifications expand the existing frameworks and provide a foundation for creating instruments to assess the mental health needs of perinatal adolescents.

Across the Lifespan

Four studies focused on measuring the MHL of people across the lifespan, broadly defined in this review as people age 14 and older. Three were cross-sectional designs with one (Kim et al., 2020) using structural equation modeling (SEM) to analyze the data. The final investigation was a comparative descriptive design. Loureiro et al. (2013) assessed the MHL of 4,938 young people, ages 14 to 24 using the Portuguese youth MHL survey "QuALiSMental" (Questionnaire for Assessment of Mental Health Literacy- Loureiro et al., 2012). Validated for this age group, the QuALiSMental uses a depression vignette to assess MHL. The QuALiSMental was administered to students in multiple school districts using multi-stage clustered-stratified sampling. Only 27.2% of respondents agreed that the character had a problem and correctly identified depression. 89% of participants felt that psychologists were the best persons to help, followed by a close friend (80.9%) and nurses (49.1%). While the recognition rate of MHCs was very low (27.2%), the high percentage of students endorsing positive perceptions of medical help (nurses-49.1%) could be used to develop educational programs. Kim et al. (2020) surveyed 200 Korean university students who were at least 19 years old. Kim et al. (2020) used data from multiple scales that measured the variables of interest, including MHL (MHLS- O'Connor and Casey, 2015), Attitudes Towards Seeking Professional Psychological Help (ATSPPH- Fischer & Farina, 1995), and Self-Stigma of Seeking Help (SSOSH- Vogel et al., 2006). Structural-equation modeling (SEM) was used to test the hypothesized paths linking MHL to help-seeking intentions, stigma, and perceived barriers to care. The final model showed that MHL had a significant and direct effect on stigma (β = -0.49, p = 0.001) and attitudes toward help-seeking (β = 0.23, p = 0.019). MHL also had a significant indirect effect on attitudes toward help-seeking behaviors (β = 0.35, p = 0.008). Stigma was a mediator between MHL and help-seeking, in that the negative relationship between MHL and stigma enhanced the positive relationship between MHL and attitudes towards help-seeking.

Akgün et al. (2022) measured the MHL of 351 Turkish citizens using the MHLS (O'Connor and Casey, 2015) adapted to the Turkish language, along with health literacy (HL) (using the Turkish Health Literacy Scale – Okyay et al., 2015) to examine the correlation between HL and MHL. Using snowball sampling, participants were recruited with an online

questionnaire and were of various ages, but rather than an age range, the authors report categorical data: ≤ 30 years and > 30 years old. The sample was overwhelmingly female and under age 30 (72.6%), with at least a bachelor's degree (82.1%) and unemployed (49.3%). Results showed that the mean MHLS was 110.99, where 53.8% of this sample scored above the cut-off score between "low MHL" and "high MHL," calculated to be 109.5 using ROC curve analysis. Overall MHL scores were significantly higher in those who were older than 30 ($p < 0.01$), those who worked in health care ($p < 0.001$), used tobacco or drank alcohol ($p < 0.001$), or had a "good" income ("good" not defined by the authors, $p < 0.001$). There was a significant, weak, positive correlation between MHL and HL (Spearman's $p = 0.249$, $p < 0.01$). For this sample, having a high HL score, being female, having a chronic disease, and occupation explained 40% of the variance in MHLS scores ($R^2 = 0.40$, $\beta = 104.136$, $p < 0.01$). The authors concluded that MHL is a novel dimension of HL and that the two are correlated.

A comparative cross-sectional design was used by Al Omari et al. (2020) to indirectly assess the MHL of young people in Jordan ages 15 to 24 using an Arabic translation of the "knowledge and attitudes toward mental illness survey." (Wahl et al., 2012, p. 649), which measured two components of MHL (knowledge and attitudes towards those with a MHC). A convenience sample of 858 students from multiple schools and universities completed the survey once. Results were compared by age: "19 and younger" and "Over 19." As a whole, most participants believed that those with a MHC are worthy of respect (75.5%) and using words like "psycho" and "maniac" are hurtful (77.6%). 41% of respondents would be willing to be friends with someone with a MHC, but only 35.2% would be willing to invite someone with a MHC into their home. There were statistically significant differences between university students and younger students in the beliefs about a MHC, such as MHCs have a biological origin (39.3% university vs. 30% non-university, $p = 0.004$) and that parents are to blame for a child's MHC (57.3% university vs. 42.9% non- university, $p < 0.000$). The authors concluded that young Jordanians are socially cautious around those with a MHC and called for more positive exposure to MHCs in schools.

Discussion

The studies reviewed cover 4 topical areas: nursing students, working nurses, women and mothers, and across the lifespan. Most studies were international, with only three studies from the U.S. The topic with the largest body of work examined MHL among nursing students.

Overall, research to date has focused on measuring or describing improvements in MHL scores, with only 6 published studies examining MHL based interventions (Burns et al., 2017; Choi, 2017; de Jesus Loureiro, 2019; de Jesus Loureiro, 2020; Hung et al., 2019; Kelly & Burks, 2017). Most of the studies examining MHL interventions were focused on the MHFA course; only one used MHL to develop a population-specific intervention (Choi, 2017). The remaining 16 studies (excluding the framework analysis -Recto et al., 2017), assessed MHL, mostly with Jorm's original (1997) or adapted vignettes. Other MHL surveys included the QuALiSMental (de Jesus Loureiro, 2019; de Jesus Loureiro, 2020), the Mental Health Literacy Inventory (Choi, 2017), PoDLiS (Poreddi et al., 2021), and the knowledge and attitudes toward mental illness survey (Al Omari et al., 2020). Four studies used the MHLS (Akgün et al., 2022; Kim et al., 2020; Recto and Champion, 2017; Saito & Creedy, 2021), and three did not measure MHL at all (Hung et al. 2019; Kelly & Birks; 2017; Recto et al., 2017).

Five of the nine studies examining nursing student outcomes demonstrated that MHL can be improved with education (Burns et al., 2017; de Jesus Loureiro and Brandão Valente da Costa, 2019; de Jesus Loureiro and Figueiredo Pinto de Freitas, 2020; Saito and Creedy, 2021). Two of these nine reported that nursing students perceived MHL education as useful (Hung et al., 2019; Kelly and Birks, 2017), with some authors praising the ability of these courses to supplement nursing education (Hung et al., 2019; Hung et al., 2021). These authors also cautioned that MHL courses should not replace standard psychiatric nursing training in nursing education, even if nursing education is deficient in mental health (Hung et al., 2019). Four of the nine studies stated the authors measured MHL but reported no scores for this outcome (Hung et al., 2019; Liu et al., 2018; Liu, 2021; McCann et al., 2009). This is a serious limitation that limits our ability to draw conclusions about the state of nursing student MHL, and the effect, if any, of interventions to enhance MHL in this group.

For working nurses, there are mixed results. It seems that the MHL of working nurses may depend on the nature of nursing education or quality of job training. A slight majority of studies reported that the ability of nurses to recognize a MHC is under 50% (Al-Yateem et al., 2017; Al-Yateem et al., 2018; Muga et al., 2019), while the remainder reported that recognition is at least 80% (Liu et al., 2011; Yeo et al., 2003). There were some similarities within this group of studies: the majority examined samples of nurses with approximately two years of nursing education, most samples included nurses with an average of five years of experience, and all the

studies used Jorm's vignettes. Some of the main differences relate to the international nature of the samples, (different countries have various nursing standards) (Al-Yateem et al., 2017; Al-Yateem et al., 2018), samples that included nurses with high psychological distress (Yateem et al., 2018), and at least two studies reporting that nurses believed MHCs are caused by evil spirits (Kenya) or other culturally-specific beliefs (UAE), with over 10% of Kenyan nurses endorsing the cause of a MHC as being "bewitched" (Muga et al., 2019, Al-Yateem et al., 2017). An important factor that may explain some of these differences is that all the nurses in both the Liu et al. (2011) and Yeo et al. (2003) samples tested nurses who received hospital based, on-the-job psychiatric nurse training. Liu et al. (2011) explained that nurses in China do not have a school requirement for psychiatric nursing and psychiatric training occurs in the hospital. Yeo et al. (2003) described how both the enrolled nurses (ENs) and the psychiatric trained registered nurses (PTNs) received a 1- and 3-day orientation to the psychiatric unit and management of psychiatric patients. The PTNs in this sample have three years of generalized nursing experience plus either a basic 9- to 18-month training course or a one-year certificate course of specialized psychiatric training, while the ENs had the basic two-year training received by all RNs in China (no psychiatric nursing content). The studies in Singapore and China were conducted at very large hospitals with dedicated psychiatric wards. Yeo et al. (2003) conducted the study at a 3,000-bed hospital, while the hospital in Liu et al. (2011) serviced a population of 63 million at the time of the study. Although Muga et al. (2019) reported that 60% of the respondents had previously managed a patient with a MHC, it is likely not as much exposure as the nurses in Singapore and China. Therefore, lower MHL may be attributed to gaps in education and less exposure to those with a MHC. Nevertheless, the lack of consensus in the literature calls for additional research on MHL in working nurses.

Similar to nurses, MHL was low to moderate in women and mothers (Choi, 2017; Poreddi et al., 2021; Recto and Champion, 2017) and improved after MHL education (Choi, 2017). Within studies examining women and mothers, MHL was affected by various circumstances; higher MHL scores were noted with those who had experienced a MHC (Recto and Champion, 2017), were educated, or employed (Poreddi et al., 2021). Recto et al. (2017) successfully integrated MHL into a concept model designed for nurses' use in the care of pregnant adolescents. The model described the factors that predict health literacy, which then impacts patient-provider interactions, access and use of health care, and self-care or self-help

strategies. These three constructs are related to each other and affect health outcomes, which is part of a feedback loop, connecting health outcomes to health literacy. The predictor variables included cognitive abilities and socioeconomic factors, and have been expanded to include culture. The mediating variables are grouped into three constructs and include provider communication skills and patient motivation. Recto et al. (2017) proposed that their model provides a foundation for the development of instruments that could assess the mental health of adolescents and also provides guidance for nurses who work with pregnant adolescents. We found no published work using the proposed conceptual model, so information about its utility and effectiveness is lacking.

In addition to nurses and women/mothers, MHL was demonstrated to be low in the general public across the lifespan (Akgün et al., 2022; Al Omari et al 2020; Kim et al., 2020; Loureiro et al, 2013). In particular, many young people cannot recognize the symptoms of depression (Loureiro et al, 2013), nor can many young mothers (Poreddi et al., 2021). Similar to nursing students who perceived MHL education positively, young people demonstrated a willingness to learn about MHCs (Al Omari et al., 2020). Importantly, higher MHL scores were associated with more help seeking behavior and reduced stigma in young persons (Kim et al, 2020). Higher MHL scores were also associated with older age and higher income, as well as using tobacco or drinking alcohol (Akgün et al., 2022).

This small body of literature has several limitations, including a significant number of studies not reporting MHL measures and the use of a variety of instruments to measure the construct. In addition, the MHFA course has not been consistently conducted, with timeframes, faculty, and follow up times that vary among the investigations. Nevertheless, these studies show that MHL is lower than desired in many countries, cultures, professions, and age groups. These studies also demonstrate nurses' use of MHL and its four foci to assess the MHL of various populations and attempt to improve it. Nurses have utilized MHL to examine connections between help-seeking behaviors and stigma, test programs that improve the mental health of women, develop evidence-based frameworks to assess adolescents, document important correlations that can be used to improve public health, and make suggestions for improving nursing education and research.

Implications

Over the past two decades, research on MHL has described how well someone can identify, manage, prevent, and/or respond to a mental health need in hypothetical situations and in everyday life (Jorm et al., 1997; Jorm, 2012). Because it is proposed that higher MHL translates to a reduced burden of MHCs (Jorm, 2012), researchers have examined strategies to increase MHL as a way to indirectly improve outcomes.

Nursing research on MHL is mostly confined to descriptive studies of certain population groups, with a small number of studies examining the effectiveness of education on MHL. Because nurses are in a unique position to raise awareness, educate patients, and conduct research, they can initiate refinements by conducting initial correlational studies to examine the nature and direction of relationships between MHL and MHCs. Following this, the next logical step is longitudinal studies with those who have received MHL training or education. In the interim, nurses can conduct well designed and adequately powered experimental designs to confirm whether a variety of interventions are effective in increasing MHL in various groups.

Within the four topical areas identified in this review, future directions could consider continuing and expanding work with structural equation modeling (SEM) to better understand the factors that help and hinder behaviors to help-seeking and the effects of stigma, as seen in Kim et al. (2020), and conduct studies to examine the longitudinal impact of nursing education on MHL in nursing students and practicing nurses. Additional areas for further work include research to evaluate the effectiveness of specific training in MHL (e.g. the MHFA course) in improving MHL for nurses, for health professionals, or specific population groups like adolescents. Nursing is also uniquely positioned to address the lack of MHL interventions for adolescents. Because half of all lifetime MHCs begin in adolescence around age 14, and more than 75% of lifetime MHCs begin by age 24 (Solomon-Maynard, 2020), it is imperative to create interventions that target the reduction of MHCs in this age group. The World Health Organization (WHO) supports prevention strategies like MHL education targeted for young people, which would decrease the incidence of MHCs and reduce the overall burden of MHCs (WHO, 2004, p. 48). Nurses are in a strong position to address low MHL of youth in practice settings that include schools and colleges. Further research in this area could examine perceptions of nurse-led MHL programs and the results of implementing nurse-led MHL programs in schools.

For nurses, it is time to extend the research on MHL beyond descriptive studies. It is time to use these results to advance nursing research by creating and empirically evaluating initiatives and programs to enhance MHL. Combining MHL research with nursing's holistic approach can help integrate MHL into nursing practice. More importantly, this plan of action could improve the quality of care given by nurses, as well as reduce the burden of MHCs for those in need. This review provides a starting point for nurse researchers to identify and test effective interventions to promote MHL in a variety of populations.

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Disclosure of Interest

The authors report there are no competing interests to declare.

References

Agency for Healthcare Research and Quality (AHRQ). (2022). Child and adolescent mental health. National Healthcare Quality and Disparities Report. https://www.ncbi.nlm.nih.gov/books/NBK587174/

Akgün, Ş., Tokur Kesgin, M., & Hançer Tok, H. (2022). The correlation between health literacy and mental health literacy in Turkish Society. *Perspectives in Psychiatric Care*, *58*(4), 2950–2961. https://doi.org/10.1111/ppc.13146

Al Omari, O., Wynaden, D., Alkhawaldeh, A., Al-Delaimy, W., Heslop, K., Al Dameery, K., & Bani Salameh, A. (2020). Knowledge and attitudes of young people toward mental illness: A cross sectional study. *Comprehensive Child and Adolescent Nursing, 43*(4), 301–313. https://doi.org/10.1080/24694193.2019.1670752

Al-Yateem, N., Rossiter, R., Robb, W., Ahmad, A., Elhalik, M. S., Albloshi, S., & Slewa-Younan, S. (2017). Mental health literacy among pediatric hospital staff in the United Arab Emirates. *BMC Psychiatry, 17*(1), 390–390. https://doi.org/10.1186/s12888-017-1556-z

Al-Yateem, N., Rossiter, R. C., Robb, W. F., & Slewa-Younan, S. (2018). Mental health literacy of school nurses in the United Arab Emirates. *International Journal of Mental Health Systems, 12*(1), 6–6. https://doi.org/10.1186/s13033-018-0184-4

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Burns, S., Crawford, G., Hallett, J., Hunt, K., Chih, H. J., & Tilley, P. J. M. (2017). What's wrong with John? A randomised controlled trial of Mental Health First Aid (MHFA) training with nursing students. *BMC Psychiatry, 17*(1), 111–111. https://doi.org/10.1186/s12888-017-1278-2

Cairns, C., Kang, K., & Santo L. (2018). *National hospital ambulatory medical care survey: 2018 emergency department summary tables*. National Center for Health Statistics. https://www.cdc.gov/nchs/data/nhamcs/web_tables/2018_ed_web_tables-508.pdf.

Cheng, T. A., Wu, J. T., Chong, M. Y., & Williams, P. (1990). Internal consistency and factor structure of the Chinese Health Questionnaire. *Acta Psychiatrica Scandinavica*, *82*(4), 304–308. https://doi.org/10.1111/j.1600-0447.1990.tb01389.x

Choi, Y. -J. (2017). Effects of a program to improve mental health literacy for married immigrant women in Korea. *Archives of Psychiatric Nursing, 31*(4), 394–398. https://doi.org/10.1016/j.apnu.2017.04.012

de Jesus Loureiro, L. M., & Brandão Valente da Costa, L. M. (2019). Evaluation of the Mental Health First Aid program in undergraduate nursing students. *Revista de Enfermagem Referência, 4*(20), 9–18. https://doi-org.utk.idm.oclc.org/10.12707/RIV18087

de Jesus Loureiro, L. M., & Figueiredo Pinto de Freitas, P. M. (2020). Effectiveness of the mental health first aid program in undergraduate nursing students. *Revista de Enfermagem Referência, 1*, 1–9. https://doi-org.utk.idm.oclc.org/10.12707/RIV19078

Fischer, E. H., & Farina, A. (1995). Attitudes toward seeking professional psychological help: A shortened form and considerations for research. Journal of College Student Development, 36(4), 368–373. https://doi.org/10.3389/fpsyg.2016.00547

Hung, M. S. Y., Chow, M. C. M., Chien, W. T., & Wong, P. Y. K. (2021). Effectiveness of the Mental Health First Aid programme for general nursing students in Hong Kong: A randomised controlled trial. *Collegian (Royal College of Nursing, Australia), 28*(1), 106–113. https://doi.org/10.1016/j.colegn.2020.04.006

Hung, M. S. Y., Lam, S. K. K., & Chow, M. C. M. (2019). Nursing students' experiences of Mental Health First Aid training: A qualitative descriptive study. *Collegian, 26*(5), 534–540. https://doiorg.utk.idm.oclc.org/10.1016/j.colegn.2019.02.006

Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist., 67*(3), 231–243. https://doi.org/10.1037/a0025957

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia, 166*(4), 182–186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

Kelly, J., & Birks, M. (2017). 'It's the simple things you do first that start the process of help': Undergraduate nursing and midwifery students' experiences of the Mental Health First Aid course. *Collegian (Royal College of Nursing, Australia), 24*(3), 275–280. https://doi.org/10.1016/j.colegn.2016.04.004

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zaslavsky, A. M. (2002). Short screening scales to monitor population

prevalences and trends in non-specific psychological distress. *Psychological Medicine*, *32*(6), 959–976. https://doi.org/10.1017/S0033291702006074

Kim, E. J., Yu, J. H., & Kim, E. Y. (2020). Pathways linking mental health literacy to professional help-seeking intentions in Korean college students. *Journal of Psychiatric and Mental Health Nursing*, *27*(4), 393–405. https://doi.org/10.1111/jpm.12593

Kitchener, B. A., & Jorm, A. F. (2002). Mental health first aid training for the public: evaluation of effects on knowledge, attitudes and helping behavior. *BMC psychiatry*, *2*, 10. https://doi.org/10.1186/1471-244x-2-10

Kitchener, B. A., & Jorm, A. F. (2004). Mental health first aid training in a workplace setting: A randomized controlled trial [ISRCTN13249129]. *BMC Psychiatry*, *4*(1), 23–23. https://doi.org/10.1186/1471-244X-4-23

Kitchener, B. A., & Jorm, A. F. (2006). Mental health first aid training: Review of evaluation studies. *Australian and New Zealand Journal of Psychiatry*, *40*(1), 6–8. https://doi.org/10.1080/j.1440-1614.2006.01735.x

Liu, W. (2021). The effects of virtual simulation on undergraduate nursing students' mental health literacy: A prospective cohort study. *Issues in Mental Health Nursing*, *42*(3), 239–248. https://doi-org.utk.idm.oclc.org/10.1080/01612840.2020.1793248

Liu, W., Gerdtz, M. F., & Liu, T. Q. (2011). A survey of psychiatrists' and registered nurses' levels of mental health literacy in a Chinese general hospital. *International Nursing Review*, *58*(3), 361– 369. https://doi-org.utk.idm.oclc.org/10.1111/j.1466-7657.2011.00883.x

Liu, W., Li, Y. -M., & Peng, Y. (2018). Mental health literacy: A cross-cultural study of American and Chinese bachelor of nursing students. *Journal of Psychiatric & Mental Health Nursing*, *25*(2), 96–107. https://doi-org.utk.idm.oclc.org/10.1111/jpm.12442

Loureiro, L. (2015). Questionnaire for assessment of Mental Health Literacy – QuALiSMental: Study of psychometric properties. *Referência (Coimbra), IV Série* (Nº 4), 79–88. https://doi.org/10.12707/RIV14031

Loureiro, L. M.., Jorm, A. F., Mendes, A. C., Santos, J. C., Ferreira, R. O., & Pedreiro, A. T. (2013). Mental health literacy about depression: A survey of Portuguese youth. *BMC Psychiatry*, *13*(1), 129–129. https://doi.org/10.1186/1471-244X-13-129

Loureiro, L, Pedreiro, A, Correia, S. (2012). Tradução, adaptação e validação de um questionário de avaliação da literacia em saúde mental (QuALiSMental) para adolescentes e jovens portugueses a partir de um focus group. Revista de Investigação em Enfermagem, 25, 42 – 48. https://www.sinaisvitais.pt/index.php/revista-sinais-vitais/revista-investigacao-enfermagem/49-2012-2015/562-revista-investigacao-enfermagem-n-25?showall=1

McCann, T. V., Lu, S., & Berryman, C. (2009). Mental health literacy of Australian Bachelor of Nursing students: A longitudinal study. *Journal of Psychiatric & Mental Health Nursing, 16*(1), 61–67. https://doi-org.utk.idm.oclc.org/10.1111/j.1365-2850.2008.01330.x

Mirsalimi, F., Ghofranipour, F., Noroozi, A., & Montazeri, A. (2020). The postpartum depression literacy scale (PoDLiS): Development and psychometric properties. *BMC Pregnancy and Childbirth*, *20*(1), 13–13. https://doi.org/10.1186/s12884-019-2705-9

Muga, T., Mbuthia, G., Gatimu, S. M., & Rossiter, R. (2019). A pilot study exploring nursing knowledge of depression and suicidal ideation in Kenya. *Issues in Mental Health Nursing, 40*(1), 15–20. https://doi-org.utk.idm.oclc.org/10.1080/01612840.2018.1489922

National Institute of Mental Health (NIMH). (2023, March). *Mental illness.* https://www.nimh.nih.gov/health/statistics/mental-illness

O'Connor, M. & Casey, L. (2015). The Mental Health Literacy Scale (MHLS): A new scale based measure of mental health literacy. Psychiatry Research, 229, 511–516. https://doi-org.utk.idm.oclc.org/10.1016/j.psychres.2015.05.064

Okyay, P., Abacigil, F., Harlak, H., Evci Kiraz, E., Karakaya, K., Tuzun, H., Baran Deniz, E., Saruhan, G., Gursoy Turan, S., Ömer Tontuş, H., & Beser, E. (2015). A new Health Literacy Scale: Turkish Health Literacy Scale and its psychometric properties. *European Journal of Public Health*, *25*(suppl_3). https://doi.org/10.1093/eurpub/ckv175.220

Paasche-Orlow, M. K., & Wolf, M. S. (2007). The causal pathways linking health literacy to health outcomes. *American Journal of Health Behavior*, *31*(1), S19–S26. https://doi.org/10.5993/ajhb.31.s1.4

Poreddi, V., Sundaram, V., Reddy, S. N., Bidadi, K., & Thimmaiah, R. (2021). Postpartum depression: Mental health literacy of Indian mothers. *Archives of Psychiatric Nursing, 35*(6), 631–637. https://doi.org/10.1016/j.apnu.2021.09.003

Recto, P., & Champion, J. D. (2017). Assessment of mental health literacy among perinatal Hispanic adolescents. *Issues in Mental Health Nursing*, *38*(12), 1030–1038. https://doi.org/10.1080/01612840.2017.1349224

Recto, P., & Champion, J. D., & Mackert, M. (2017). Assessing the mental health needs of pregnant adolescents: Health literacy frameworks to guide research and practice. *Research and Theory for Nursing Practice*, *31*(2), 137–155. https://doi.org/10.1891/1541-6577.31.2.137

Saito, A. S., & Creedy, D. K. (2021). Determining mental health literacy of undergraduate nursing students to inform learning and teaching strategies. *International Journal of Mental Health Nursing*, *30*(5), 1117–1126. https://doi-org.utk.idm.oclc.org/10.1111/inm.12862

Solomon-Maynard, M. (2020, November 5). *10 Surprising mental health statistics from 2020*. National Council for Mental Wellbeing. https://www.mentalhealthfirstaid.org/external/2020/11/10-surprising-mental-health-statistics-from-2020/

Substance Abuse and Mental Health Services Administration (SAMHSA). (2022). *Key substance use and mental health indicators in the United States: Results from the 2021 National Survey on Drug Use and Health, HHS Publication No. PEP22-07-01-005, NSDUH Series H-57*. https://www.samhsa.gov/data/report/2021-nsduh-annual-national-report

Wahl, O., Susin, J., Lax, A., Kaplan, L., & Zatina, D. (2012). Knowledge and attitudes about mental illness: A survey of middle school students. *Psychiatric Services (Washington, D.C.)*, *63*(7), 649–654. https://doi.org/10.1176/appi.ps.201100358

Walker, L. O., & Avant, K. C. (2011). *Strategies for theory construction in nursing* (5th ed.). Prentice Hall.

Wong, F. K. D., Lam, Y. K. A., & Poon, A. (2010). Depression literacy among Australians of Chinese-speaking background in Melbourne, Australia. *BMC Psychiatry*, *10*(1), 7–7. https://doi.org/10.1186/1471-244X-10-7

World Health Organization (WHO). (2004). *Prevention of Mental Disorders: Effective interventions and policy options (summary report).* https://apps.who.int/iris/handle/10665/43027

Yeo, S., Parker, G., Yap, H., & Mahendran, R. (2003). Mental health literacy beliefs: A comparison of psychiatric trained nurses and enrolled nurses in Singapore. *Journal of Psychosocial Nursing & Mental Health Services*, *41*(3), 34–43. https://doi.org/10.3928/0279-3695-20030301-12

Appendix

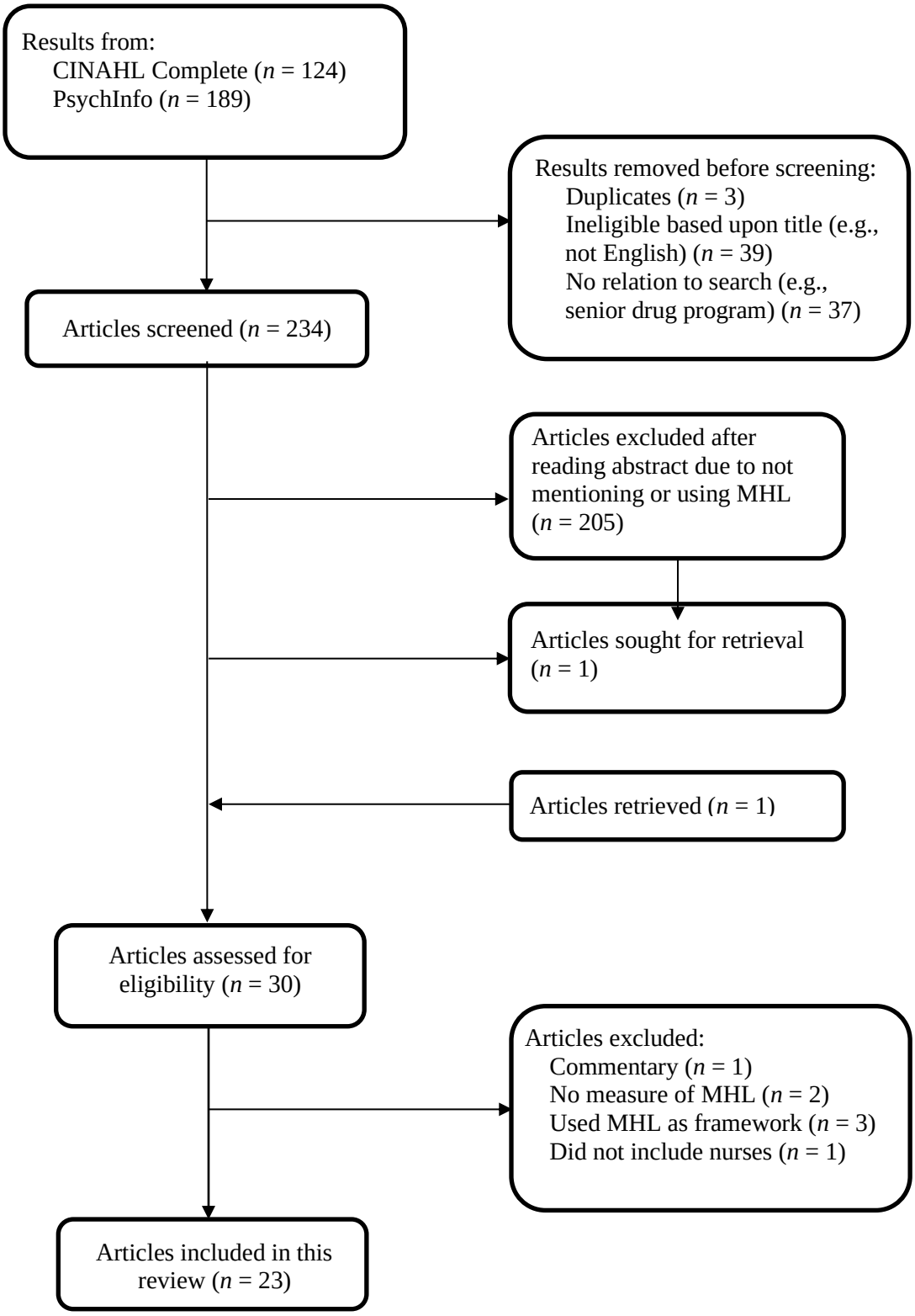


Figure 3. Flow chart of literature search and selection

Table 1. Nursing Literature on Mental Health Literacy 1997-2023

Authors year & country	Title	Purpose	Participants	Method	MHL measure used	Results
Saito & Creedy, 2021, Australia	Determining mental health literacy of undergraduate nursing students to inform learning and teaching strategies	Assess mental health literacy in undergraduate nursing students in 3 different program years	114	Descriptive, cross sectional	Mental health literacy scale (O' Connor & Casey, 2015)	MHL scores were higher in 2nd ($p < 0.008$) and 3rd ($p < 0.002$) year students than in 1st year students.
Liu et al., 2018, China and the US	Mental health literacy: A cross-cultural study of American and Chinese bachelor of nursing students.	Compare mental health literacy in senior American and Chinese undergraduate nursing students	310	Descriptive, cross cultural	Jorm's vignettes (Jorm et al., 1997)	Chinese students selected found family and friends helpful ($p = 0.000$), US students selected doctors and social workers helpful for depression ($p = 0.000$). MHL scores not reported.
de Jesus Loureiro & Brandão Valente da Costa, 2019, Portugal	Evaluation of the Mental Health First Aid (MHFA) program in undergraduate nursing students.	Evaluate the impact of MHFA on undergraduate nursing students	46	Pre-test/post-test	Questionnaire for assessment of mental health literacy (QuALiSMental-Loureiro, 2015)	Statistically significant improvement in all four aspects of MHL.
de Jesus Loureiro & Figueiredo Pinto de Freitas, 2020, Portugal	Effectiveness of the mental health first aid program in undergraduate nursing students	Evaluate the effectiveness of MHFA in undergraduate nursing students	219	Pre-test/post-test	Questionnaire for assessment of mental health literacy (QuALiSMental-Loureiro, 2015)	Statistically significant improvement in all four aspects of MHL.

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 continued

Authors year & country	Title	Purpose	Participants	Method	MHL measure used	Results
Liu, 2021, China	The effects of virtual simulation on undergraduate nursing students' mental health literacy: A prospective cohort study	Evaluate long term effects of simulation on nursing student MHL	149	Prospective cohort	Jorm's vignettes (Jorm et al., 1997)	Students receiving mental health simulation had statistically greater knowledge of nonpharmacologic interventions. MHL scores not reported.
McCann et al., 2009, Australia	Mental health literacy of Australian Bachelor of Nursing students: A longitudinal study.	Assess changes in MHL over 3 years in undergraduate nursing students	90	longitudinal	Jorm's vignettes (Jorm et al., 1997)	Third years significantly more likely to rate mental health services, medications and specialized care as helpful compared to first and second years.
Burns et al., 2017, Australia	What's wrong with John? A randomised controlled trial of Mental Health First Aid (MHFA) training with nursing students.	Measure the impact of MHFA training in undergraduate nursing students	181	RCT	Jorm's vignettes (Jorm et al., 1997)	No statistically significant differences in intervention vs. control group recognition of mental health problems; intervention group had statistically significantly greater confidence to assist persons with mental health needs at all measurement points.
Hung et al., 2019, Hong Kong	Nursing students' experiences of Mental Health First Aid training: A qualitative descriptive study	Describe experiences of a MHFA class	25	Qualitative descriptive	Semi structured interviews	Themes included reinforced knowledge and enhanced skills.

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 continued

Authors year & country	Title	Purpose	Participants	Method	MHL measure used	Results
Kelly & Birks, 2017, Australia	*'It's the simple things you do first that start the process of help'*: Undergraduate nursing and midwifery students' experiences of the Mental Health First Aid course	Describe experiences of a MHFA course designed for nursing and midwifery students in a regional university	66	Descriptive, cross-sectional	Specially designed questionnaire with both Likert-type and open-response questions	Over 85% of respondents thought the MHFA class was appropriate for nursing and midwifery students. 91% responded to the strengths questions with positive comments about the helpfulness of the course.
Hung et al., 2021, Hong Kong	Effectiveness of the Mental Health First Aid programme for general nursing students in Hong Kong: A randomized controlled trial	Evaluate effectiveness of the MHFA course to improve MHL, confidence in helping others, and personal mental wellbeing of nursing students	358	RCT	Jorm's vignettes adapted for Chinese language and culture	MHFA significantly improved MHL post-intervention ($p < 0.01$) and at follow-up ($p < 0.01$) in the intervention group.
Al-Yateem et al., 2017, UAE	Mental health literacy among pediatric hospital staff in the United Arab Emirates	Assess MHL of nurses and other hospital staff in hospitals across the UAE. K10 scale score to identify factors affecting recognition of MHC	379	Descriptive, cross-sectional	Jorm's vignette for depression with suicidal ideation	Less than 55% of participants correctly identified the MHC in any of the vignettes. A higher K10 score ($p = 0.03$), as well as a low one ($p =0.017$), was associated with correct identification of depression.

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 continued

Authors year country	Title	Purpose	Participants	Method	MHL measure used	Results
Al-Yateem et al., 2018, UAE	Mental health literacy among school nurses in the United Arab Emirates	Assess MHL of school nurses and 4 medical officers in various hospitals across the UAE. Also use K10 scale score to identify factors affecting recognition of MHC	328	Descriptive, cross-sectional	Jorm's vignettes modified for Arabic language and culture	Less than 50% of participants correctly identified the MHC in any of the vignettes. A lower K10 score was associated with correctly identifying PTSD (p = 0.036), while a higher K10 score was associated with selecting "vitamins and minerals" as helpful treatments for depression (p = 0.011).
Muga et al., 2019, Kenya	A pilot study exploring nursing knowledge of depression and suicidal ideation in Kenya	Assess the MHL of nurses in the ED and medical wards in a single urban hospital	37	Descriptive, cross-sectional	Jorm's vignette for depression and suicidal ideation	8% correctly identified the MHC while 64% picked the correct MHC along with another MHC as the cause
Liu et al., 2011, China	A survey of psychiatrists' and registered nurses' levels of mental health literacy in a Chinese general hospital	Compared the MHL of nurses versus psychiatrists in a psychiatric department of a major teaching hospital in China.	70	Comparative descriptive, cross-sectional	Jorm's (1997) vignettes modified for Chinese language and culture	There were no significant differences in identifying a MHC between psychiatrists and RNs. RNs viewed antipsychotics (p = 0.009) and acupuncture (p = 0.0323) more helpful for depression than did psychiatrists.

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 continued

Authors year country	Title	Purpose	Participants	Method	MHL measure used	Results
Yeo. Parker, Yap & Mahendran, 2003, Singapore	Mental health literacy beliefs: A comparison of psychiatric trained nurses and enrolled nurses in Singapore	Compare mental health literacy between psychiatric nurses and non-psychiatric nurses in the same hospital	245	comparative descriptive, cross-sectional	Jorm's vignettes (Jorm, 1997)	Over 83% of the psychiatric nurses and over 73% of enrolled nurses correctly identified the MHCs. However, Psychiatric nurses were significantly more likely to view traditional healers as harmful than non-psychiatric nurses ($p < 0.05$).
Choi, Y. -J., 2017, Korea	Effects of a program to improve mental health literacy for married immigrant women in Korea	To develop a program for immigrant women married to Korean men that improves MHL and stress management.	63	non-equivalent control group pre-post test	Mental Health Literacy Inventory	MHL was significantly improved pre- to post-test in the experimental group, while the MHL of the control group significantly decreased over the same time period.
Poreddi et al., 2021, India	Postpartum depression: Mental health literacy of Indian mothers	Assess the MHL of postpartum mothers on the topic of postpartum depression	279	Descriptive, cross-sectional	PoDLiS	About half of the participants correctly identified signs and symptoms of PPD. Higher scores were significantly associated with older age ($p = 0.01$), higher income ($p = 0.006$), and type of occupation ($p = 0.013$).

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 continued

Authors year country	Title	Purpose	Participants	Method	MHL measure used	Results
Recto and Champion, 2017, USA	Assessment of mental health literacy among perinatal Hispanic adolescents.	Assess the MHL of perinatal Hispanic adolescents using a modified MHL scale	30	Descriptive, cross-sectional	Mental Health Literacy Scale (O' Connor & Casey, 2015) modified for pregnant adolescents	Perinatal adolescents had moderate overall MHL scores. Those who felt depressed during the perinatal period had significantly higher MHL scores.
Recto et al., 2017, USA	Assessing the mental health needs of pregnant adolescents: Health literacy frameworks to guide research and practice.	Define, analyze, and apply Jorm's MHL framework and the Paasche-Orlow and Wolf's Health Literacy Model to pregnant adolescents	NA	Framework analysis	NA	Jorm's MHL Framework is easy to use but did not account for healthcare access or personal factors that can affect MHL. Paasche-Orlow and Wolf's model does not account for gender and does not provide feedback loops to health predictors. A combination of these two frameworks is offered.
Loureiro et al., 2013, Portugal	Mental health literacy about depression: A survey of Portuguese youth	Assess the MHL of youth ages 14 to 24	4,938	Descriptive, cross-sectional	QuALiSMental (Loureiro et al., 2012)	MHL scores very low for this group, with 27.2% identifying depression. Majority believed that psychologists and close friends were appropriate to ask for help.

Table 1. Nursing Literature on Mental Health Literacy 1997-2023 continued

Authors year country	Title	Purpose	Participants	Method	MHL measure used	Results
Al Omari et al., 2020, Jordan	Knowledge and attitudes of young people toward mental illness: A cross sectional study	Assess the knowledge and attitudes of young people ages 15 – 24 towards those with a MHC and compared scores of those under 19 to those over 19	858	Comparative descriptive, cross-sectional	Knowledge and attitudes toward mental illness survey (Wahl et al., 2012)	Most students believed that those with a MHC are worthy of respect (75.5%). Statistically significant differences observed between those under 19 and those over 19 on a variety of knowledge and beliefs about MHCs.
Kim et al., 2020, Korea	Pathways linking mental health literacy to professional help-seeking intentions in Korean college students	Examine relationships and pathways between variables measured by various scales, such as MHL and self-stigma of seeking help	200	Descriptive, cross-sectional	Mental health literacy scale (O' Connor & Casey, 2015) adapted for Korean language	MHL had a significant and direct effect on stigma and attitudes toward help-seeking, and a significant indirect effect on attitudes toward help-seeking behaviors.
Akgün et al., 2022, Turkey	The correlation between health literacy and mental health literacy in Turkish society	Determine the correlation between health literacy and mental health literacy in Turkish society	351	Descriptive, cross-sectional	Mental health literacy scale (O' Connor & Casey, 2015) adapted for Turkish language	MHL scores were significantly higher in those over age 30 ($p < 0.01$), employed in health care ($p < 0.001$), categorized as high income ($p < 0.001$), females ($p < 0.01$), and users of alcohol/tobacco ($p < 0.001$).

Notes: MHC = Mental Health Condition

MHL = mental health literacy

MHFA = Mental Health First Aid

K10 = Kessler Psychological Distress Scale

PPD = Postpartum Depression

CHAPTER III

MENTAL HEALTH LITERACY: CONCEPT ANALYSIS USING RODGERS' EVOLUTIONARY METHOD

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Abstract

Mental health literacy is a concept developed in response to the creation of health literacy to highlight the importance of mental health. Since inception, mental health literacy has been used in fields from psychology to public health to nursing. Mental health literacy was originally described as the knowledge and beliefs that allow someone to recognize, manage and prevent mental illness. The definition of this concept includes the knowledge to recognize the disorder, knowledge to prevent it, knowledge of risk factors, and the ability to find the right help. Although this concept has been used in nursing, it was not developed for nursing. This concept analysis uses Rodgers' evolutionary method to clearly define the concept and determine the antecedents, attributes, and consequences. This analysis included 65 articles that define mental health literacy. The results show that most researchers define the concept using the original definition but use the concept for different tasks. Also, this concept is relevant to nursing and can be used for research, education, and other applications. However, there were influential factors found in many studies that are not included in the definition such as ethnicity and religious beliefs. An expanded definition of the concept was created to include *contextual factors.* Including this in the definition will make it relevant to nursing and allow nurses to take into account those variables that can influence the effectiveness of mental health literacy initiatives.

Keywords: mental health literacy, concept analysis, nursing, Rodgers, public health, psychology

Introduction

Mental health literacy is a relatively new concept created to focus on mental health specifically and separately from other health concepts. Developed by Jorm et al. in 1997, mental health literacy refers to the "knowledge and beliefs about mental disorders which aid their recognition, management or prevention." As an expansion of the also recently developed "health literacy," mental health literacy was originally defined as the ability to recognize mental health disorders and how to find mental health information, the knowledge of causes, risk factors, appropriate treatments or help, and understanding the behaviors and thoughts that enhance these abilities (Jorm et al., 1997).

Health literacy as a concept was developed in the 1990s to describe how people comprehend a complex health system. Using the term "heath literacy" from a health and education policy from paper by Simonds (1974), Selden et al. (2000) initially defined health

literacy as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” in a report for the National Library of Medicine. This definition was subsequently used in various government reports and monographs, including Healthy People 2010 (Santana et al., 2021). Since its introduction, health literacy has been revised and updated numerous times (Parker & Ratzan, 2010) and now includes the “use” of health information and services, making “well-informed” decisions and has expanded to include “organizational health literacy” as noted in the Healthy People 2030 initiative (Santana et al., 2021).

Mental health literacy was conceptualized to be distinct from health literacy in order to emphasize its importance (Jorm, 2012). With about 40% of adults in the United States suffering from a mental health disorder or substance abuse, it is critical to define terms that may expand knowledge and comprehension about public health issues (Solomon-Maynard, 2020). Mental health disorders add to the economic burden of society, costing $225 billion in healthcare spending in 2019 (Leonhardt, 2021). Children are also affected by mental health disorders, where nearly half of all mental health disorders will begin by age 14, and about 75% of all mental health disorders will begin by age 24 (Solomon-Maynard, 2020). Having a mental health disorder increases a person’s likelihood of developing comorbidities such as heart disease and diabetes (CDC, 2019). With these sobering statistics, it is clear that separating mental health literacy from health literacy is essential.

Purpose

A concept analysis of mental health literacy in the context of nursing is beneficial to nursing practice because it emphasizes and adds to the prevention strategies for mental health. Clearly defining this concept will enable nurses to use mental health literacy as a framework for delivering information and educating patients about mental health disorders in a structured and consistent way. Analyzing this concept will also allow nurses to further investigate aspects of mental health literacy as a way to develop nursing knowledge in mental health and allow for the operationalization of mental health phenomena in a clinically meaningful way.

Background

Although health literacy may be recognized by some nurses because of initiatives by the federal government such as the Healthy People Initiative (OASH, 2021), mental health literacy is not a well-known nursing concept. A search for “mental health literacy” and “nursing” in

CINAHL complete reveals less than 40 applicable studies, most of which are studies done on nurses' own mental health literacy levels, with a handful of studies applying mental health literacy concepts to a population. One example includes a study by Kim et al. (2020) that assessed the mental health literacy of college students using the mental health literacy scale. Another study assessed the mental health literacy of perinatal Hispanic adolescents using a modified scale of mental health literacy (Recto & Champion, 2017). These search results also revealed that most of the studies are printed in nursing journals with the remainder encompassing psychology, public health, social work, family practice, care management, and mental health education. Because mental health literacy was developed by psychologists, there seems to be minimal cross-over of the use of mental health literacy in nursing other than using the related scales as a way to measure knowledge and recognition of mental health disorders.

Mental health literacy was originally defined as the ability to recognize mental health disorders, understand the risk factors and causes, know a few treatments including self-help, and understand the behaviors that support or hinder someone's ability to seek help (Jorm et al., 1997). The definition was later organized into six parts:

> (a) the ability to recognise specific disorders or different types of psychological distress; (b) knowledge and beliefs about risk factors and causes; (c) knowledge and beliefs about self-help interventions; (d) knowledge and beliefs about professional help available; (e) attitudes which facilitate recognition and appropriate help-seeking; and (f) knowledge of how to seek mental health information (Jorm, 2000).

The concept was updated by Kutcher et al. (2016) to include the effects of stigma on mental health and knowledge of self-help measures. Mental health literacy was also refined by Wei et al. (2015) to include four domains: 1) understanding how to obtain and maintain good mental health; 2) understanding mental disorders and their treatments; 3) decreasing stigma against mental illness; and 4) enhancing help-seeking efficacy.

These four domains have also been grouped into three outcomes: knowledge, attitudes, and help-seeking efficacy (Wei et al., 2015), with some researchers having used outcomes such as recognition, knowledge, and attitudes (The College for Behavioral Health Leadership, n.d.). A systematic review done by Mansfield at al. (2020), found that mental health literacy was used for various purposes such as predicting help-seeking attitudes, predicting stigma, and assessing

knowledge. In addition, Jorm (2020) has recently concluded that an outcome of mental health literacy should include "action that individuals or groups take to benefit their own mental health or that of others." This conclusion was formed in response to research in mental health literacy overwhelmingly focusing on improving knowledge over improving mental health (Jorm, 2020).

Other ways that mental health literacy has been used was the development of intervention programs that teach the participant not only how to recognize various mental health disorders, but also how to interact with someone who may be having a mental health crisis. Developed by some of the originators of mental health literacy, Mental Health First Aid (MHFA) is a day-long training course that can offer those who are interested the skills needed to "identify and respond to early signs of mental health issues" in children and adults (Glasper, 2017). Jorm (2012) has since included MHFA in his definition of mental health literacy which is now: (a) knowledge of how to prevent mental disorders, (b) recognition of when a disorder is developing, (c) knowledge of help-seeking options and treatments available, (d) knowledge of effective self-help strategies for milder problems, and (e) first aid skills to support others who are developing a mental disorder or are in a mental health crisis.

Researchers have also developed tools for measuring various aspects of mental health literacy. Originally, Jorm et al. (1997) had measured mental health literacy using vignettes describing depression and schizophrenia and scoring how well the respondents were able to identify the disorder, what interventions could be helpful or harmful, what are likely risk factors, and what beliefs are associated with stigma. Over time, there have been numerous measuring tools developed and used in specific studies of mental health literacy. Rabin et al. (2021) discussed how there is a proliferation of tools to measure mental health literacy without any "gold standard" to allow for standardization across studies. For their study however, Rabin et al. (2021) went on to create yet another tool to measure mental health literacy for their specific focus of college students.

Because of these variations of uses and interpretations of what the definition of mental health literacy is, it would be difficult to begin using mental health literacy as a framework in nursing practice. Using Rodgers' evolutionary method, an appropriate concept analysis could be performed where all these variations can be considered and described in the context of nursing. A concept analysis could define mental health literacy for nursing practice, creating the basis for future research and inquiry on this concept within nursing science which can lead to an

expansion of available tools that nurses use to provide holistic care to patients and the community.

Design

To bring this concept over to nursing, a concept analysis for mental health literacy must be completed. A concept analysis is a method used by nursing scholars to define concepts that are used in nursing or not yet used in nursing. Once a concept is developed, it becomes easier to use and accepted into nursing practice. For this analysis, Rodgers' evolutionary method will be used to define mental health literacy as it applies to nursing practice.

Rodgers' evolutionary method is appropriate for this analysis due to the recent development of the concept in another discipline. The evolutionary method allows for development of the concept over time and allows for changes of the definition when applied to novel contexts (Tofthagen & Fagerstrøm, 2010). In this case, the novel context is nursing as opposed to psychology, sociology, or psychiatry. The evolutionary method also covers the application, significance, and use of the concept when applied to new situations, such as public health nursing or psychiatric nursing (Rodgers, 2000). This aspect may become evident if a nurse uses mental health literacy as a framework to guide patient education or as a guide to structure research.

Additionally, Rodgers' evolutionary method allows for future study and the development of theories pertaining to the concept because it does not conclude with a finite definition of the concept (Rodgers, 2000; Tofthagen & Fagerstrøm, 2010). This is already evidenced in the evolution of the definition of mental health literacy. Although the definition started as recognition and management, it now seems important to understand what to do if faced with a mental health crisis (Jorm, 2012).

Preconceived Definition

Jorm (2012) and colleagues had found in the research that it could take over 8 years for someone to get treatment for anxiety or a mood disorder and that it took almost seven years to recognize there was a problem. However, once someone had recognized they had a disorder, it took less than a year and a half to seek help (Jorm, 2012). Therefore, if there was a way to get to the point where someone could recognize they had a mental health problem, time to treatment would theoretically decrease. At the time, there was no preferred algorithm or treatment standard to improve recognition of a mental health disorder for the general public (Jorm, 2012). This gap

in recognition became part of the nucleus of the concept of mental health literacy, as well as the impetus for ensuring the concept was useful to the public (Jorm et al., 1997).

The most common definition focused on the recognition, management, and factors that can affect how someone seeks help. These would be considered the important first steps which subsequently decreased the time to treatment. Being "literate" meant that someone is able to recognize the disorder, know what the symptoms are, know how to get appropriate help, and have an idea of how to prevent it. Jorm and colleagues had focused their research on finding how much of these aspects of mental disorders the general public knew. Most of the studies that collected this data had used vignettes that described a fictional person who has depression or schizophrenia as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM) at that time (Jorm et al., 1997). The participant would read the vignette and then answer questions about the person in the story that pertains to mental health. The questions would cover recognition and what things the person could do to improve their mental health. There have been ample studies done using this vignette format over twenty years and most conclude that the general public does not have adequate mental health literacy (Jorm, 2012).

Although the basic premise of recognition and management has remained, there have been changes in the other parts of the definition. Some researchers describe some parts as "helping attitudes" (Patalay et al., 2017) or "help seeking behaviors" (Na et al., 2016) and other parts as "health behaviors" (Nagel et al., 2009) or "attitudes to mental illness" (O'Keeffe et al., 2016). No matter which descriptor is used, most research is focused on determining if the sample group has adequate mental health literacy or if one group is more literate than another.

It would seem then that there would be a shift in the direction of mental health literacy from discovery to action as Jorm (2020) himself had prescribed later in his research. However, that has not been the case. Prominent changes in mental health literacy are mostly related to defining the concept. Although Jorm had developed a program to train someone to be able to recognize and start a conversation about mental illness, the program, called Mental Health First Aid, is not widely tested or referenced in the literature.

The other active area of research in mental health literacy is clustered around creating measuring tools for mental health literacy. In the search for studies done with this topic, many researchers are eager to measure mental health literacy and have their tool used. Although there is a scientific necessity to measure a concept, there should also be an equal desire to put the

measurement to use. Questions to ask then are a) What do these measurements mean? b) Can these measurements be used in a randomized controlled trial? c) Can these measurements be applied to the general public? or d) Can these measurements actually improve mental health literacy? The most important question, at least the question that can have the most effect on the population, is how the measurements can actually improve mental health.

The evolution of mental health literacy seems to take two paths. One is continuing on the road of using vignettes to see if the target population is literate. The other is using current research to take action on some aspect of mental health literacy. Given all the repetitive research done in the area of measuring mental health literacy, it is time to use the data to create change in mental health. As it stands, the basic definition of mental health literacy is being able to identify the problem, know the basics when it comes to causes, risk factors, and treatments, and to know how to find quality sources of help. However, as more research is done on this topic, it is apparent that there are other factors that can contribute greatly to this older definition. This concept analysis should bring to light some of these factors and help clarify the definition to what it means today and what it could mean to nursing.

Method

The concept analysis follows Rodgers' evolutionary method (Rodgers, 2000). This method requires identification of the name of the concept and any surrogate terms, a review of the literature to help find the references, antecedents, and consequences of the concept, find any related concepts, and describe a model case of the concept if possible (Foley & Davis, 2017).

Search Methods

An electronic database search of CINAHL Complete was performed in October 2021. Originally the search terms were "mental health" AND "literacy", but the results gave over 1,000 results with many articles having just "mental" or "health" in the title. An alternative term, "mental health literacy," was used and returned 669 articles. The list was hand sorted and organized to include only those that had the complete term "mental health literacy" in that order in the title. This resulted in 141 articles. Abstracts were read for each article and were included if it contained the term "mental health literacy" and a description of the definition of mental health literacy or a use of the definition of mental health literacy. Articles were excluded if there was no abstract given, contained only an abstract, there was no full text available, it was not written in English, access to the article was denied, or was a duplicate. These criteria left 90 articles. The

remaining 90 articles were read entirely and were excluded if it did not define mental health literacy or did not use any aspect of the definition of mental health literacy. The results included 65 articles. Since there were a variety of articles from various disciplines such as social work, psychology, public health, psychiatry, nursing, geriatrics, pharmacy, and sociology, further searching on a different database was not conducted.

The phrase "behavioral health literacy" was found during the preliminary search of articles on OneSearch of the University of Tennessee library. A search of this phrase yielded two articles from OneSearch. A search on CINHAL Complete yielded one article which duplicated the one found on OneSearch. These articles were not included in the final group of articles since they did not meet the inclusion criteria.

Findings

Definitions, Uses and Surrogate Terms

The original definition of mental health literacy, "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm et al., 1997) is present in many studies found for this concept analysis. Generally, this concise definition is used in the introduction to brief the reader on what is mental health literacy, such as in Lee, C. Y. et al. (2017). However, in that same paragraph written by Jorm et al. (1997), mental health literacy also includes the "ability to recognise specific disorders; knowledge of causes, risk factors, self-help treatments and available professional help; as well as attitudes that promote recognition and appropriate help seeking" (Jorm et al., 1997 as cited in Reavley, McCann et al., 2014). The original definition is present in an overwhelming number of studies, such as in Li et al. (2013) and Yeo et al. (2003), as well as truncated versions of the original definition (Furnham et al., 2015; Wu et al., 2014). The continual use of the short and expanded versions indicates that many researchers appreciate the utility of the original definition.

Some authors modified the original definition to include stigma (Bjørnsen et al., 2017; Kutcher, Wei, Costa et al., 2016; O'Keeffe et al., 2016), which is included in many research studies and has become a focal point of mental health literacy. Others have used the modern definition which includes mental health first aid (Jorm, 2012; Na et al., 2016). Some do not define it correctly but still use the basic definition to guide the study (Choi, 2017).

The majority of the studies use mental health literacy to find out if the target population can identify a mental health disorder presented in the form of a vignette. The participants then

answer various questions about the vignette which will determine if the person has low or high mental health literacy. Some of these studies use the vignette approach to compare the literacy of two groups such as physicians versus nurses, or nurses with different levels of experience (Fisher & Goldney, 2003; Liu et al., 2011; Marie et al., 2004; May et al., 2014; Yeo et al., 2003).

Other uses of mental health literacy include qualitative studies that use the definition to guide or group the data (Gorczynski et al., 2017; Guy et al., 2017; Jang et al., 2017; Na et al., 2016; Nagel et al., 2009; Stansbury & Schumacher, 2008). Other studies use mental health literacy as a framework to guide the study (Jang et al., 2017; Lee et al., 2010; Na et al., 2016; Stansbury et al., 2013). None of the studies included use other terms for mental health literacy or define it in a vastly different way. The only surrogate term that was found was "behavioral health literacy" from two articles not included in this concept analysis because they did not define and use mental health literacy.

Antecedents

Antecedents are events associated with the concept that occur in the past and can precede the initiation of the concept (Tofthagen & Fagerstrøm, 2010). One could argue that mental health literacy is an antecedent to good mental health. However, how does someone associate themselves with mental health literacy? In the readings, it became apparent that one needs to display *help-seeking attitudes* and *treatment-seeking behaviors* in order to realize that they have a problem or to bring it up to their physician (Chamberlain et al., 2012; Reavley, Morgan, & Jorm, 2014; Wu et al., 2014). In the original description set forth by Jorm et al. (1997), *knowledge and beliefs about mental disorders* is what supports the treatment or prevention of mental disorders. If, for example, someone thinks psychiatric medications are bad, they will be less likely to seek help. The most studied antecedent was *stigma*, which is comprised of the socioeconomic and cultural forces that define mental disorders to an individual or group (Holman, 2015). Stigma may be one of the most influential antecedents to increasing mental health literacy since the way someone views a mental disorder could determine whether they seek help or recognize they are having a problem. Kim et al. (2020) demonstrated that stigma mediates the relationship between mental health literacy and the attitudes towards help-seeking. This provides some quantitative evidence of the overall influence of stigma as an antecedent as well as its influence on consequences.

Attributes

The attributes of a concept are what distinguish it from other concepts (Tofthagen & Fagerstrøm, 2010). For the case of mental health literacy, it seems that the most basic components must include what the original description set forth: *recognition, management, and prevention* (Jorm et al., 1997). All the included articles described some aspect of this basic description, mostly recognition. Expanding these three aspects yields the four most common groups of mental health literacy: a) *ability to recognize the problem* (recognition), b) *knowledge of causes and risk factors* (prevention), c) *knowledge about treatments, including self-help* (management), and d) *ability to obtain proper help resources* (management) (Jang et al., 2017). Other definitions can include promoting positive mental health (Gorczynski et al., 2017), stigma specifically (Bjørnsen et al., 2017; Holman, 2015), although that could be grouped within prevention, or ability to administer "mental health first aid skills" which could also be grouped within prevention (Na et al., 2016). However, all the definitions found have the three components expanded into at least the four main groups.

Consequences

The consequences of a concept are what results after a concept is applied (Tofthagen & Fagerstrøm, 2010). The consequences of mental health literacy, or having adequate mental health literacy, is an increase in recognition skills and help-seeking behaviors which will reduce the time to seek professional help once the problem is recognized (Jorm, 2012). In addition, mental health literacy results in a more positive perception of mental health professionals, and a more favorable view of modern psychiatric medicines and treatments (Goldney & Fisher, 2008). These are the consequences that would satisfy the original definition of knowledge and beliefs that aid in recognition, management or prevention of a mental disorder (Jorm, 1997).

Exemplar of Mental Health Literacy

Although there was not an exemplar of someone who had experienced a change or described outcomes from applying the mental health literacy concept within the readings, one can be constructed from the data collected on this topic:

> *Mary is a 25-year-old female who is very active in her church. She has been working many hours at her job and has been feeling very stressed. She has lost her appetite and finds she does not look forward to volunteering. While volunteering at her church, she mentions her*

symptoms to the pastor and he tells her he thinks it is more than "just stress" and advises her to see Sue, a social worker in their church. She talks to Sue who tells Mary that she seems to be displaying signs of depression and gives her some information about it. Mary reads the information and goes online to look up some of the websites Sue suggested. After reading about signs and symptoms of various mental issues, Mary thinks that the pastor was right and that she may have more than just stress. She begins looking up treatments for depression and learns that there are more than just medications to treating depression and becomes interested in seeking help. The next time Mary sees Sue, she asks Sue if she knows anyone who can help her. Sue gives her a list of recommended mental health professionals and Mary calls one closest to her home to set up an appointment.

This is an example that illustrates how someone who could not recognize the symptoms of depression, increases their mental health literacy. Because she had positive help-seeking behaviors, she was able to seek out appropriate information from trusted sources, reducing her time to treatment. However, because this is not an actual case, some caution should be used in the interpretation. It is important to note that this example does not illustrate a model case, but rather a working example of one of the many possibilities of how someone can increase their mental health literacy (Rodgers, 2000). Mental health literacy is a process and has multiple components. Therefore, a model case may not be possible to locate as one person does not have to go through all of the antecedents, attributes, and consequences to improve mental health literacy. To clarify how someone would move through mental health literacy, Figure 4 in the Appendix illustrates the antecedents, attributes, and consequences of mental health literacy.

Discussion

Justification of Concept Analysis

The goals of this concept analysis were to clarify the meaning of the term "mental health literacy" and apply the concept to nursing. To this point, the concept has been clarified, and the antecedents, attributes, and consequences have been identified. With all the data collected and analyzed, it can now be transferred to nursing.

The antecedents of this concept focus on beliefs, behaviors, and attitudes that a person may have which can promote or hinder their ability to carry out the attributes of mental health literacy. A nurse who is in the position to educate patients or a population, such as a public health nurse, can begin to survey their patient population or assigned territory and see if problems with stigma exist or if there is a lack of knowledge about treatments. This can be a research area or a practice area where nurses interested in this cause can take action to reduce stigma or increase knowledge about treatments.

Knowing that the antecedents have a direct effect on the attributes of the concept, a nurse can piece together why, for instance, a certain ethnic group avoids mental health treatments or describes certain mental illnesses differently (NAMI, 2024). This can also be a focus of nursing research and practice. A nurse who is interested in this area can, for example, craft educational materials that explain the antecedents of mental health literacy to a target demographic group who may have specific help-seeking attitudes.

The consequences of this concept are vastly positive. There are very few contraindications or side effects to increasing mental health literacy. However, barriers do exist. Although nurses are the largest group of healthcare workers in the United States (Smiley, 2023), many nurses are not autonomous (Vaughn, 2023) and may not be able to implement strategies to improve mental health on their own. Nurses who are interested in this topic may have to find funding or secure buy-in from the public or place of work. There may also be cultural and ethnic nuances that will make research and dissemination of this topic difficult. However, in its simplest form, a nurse has the power to talk to their patients who they believe need input about stigma or clarification on what constitutes a certain mental health problem.

Definition to Fit Nursing

This concept analysis has yielded sufficient data to analyze and determine if mental health literacy is appropriate for nursing. Although the Rodgers' evolutionary method has outlined the antecedents, attributes, and consequences, it does not fully capture the concept for application to nursing. Therefore, an updated definition is offered which captures all the necessary components of mental health literacy with enough room for expansion of the concept in nursing.

Data from the literature search revealed that various socioeconomic factors have an impact on the efficacy of mental health literacy. Holman (2015) writes that mental health literacy

"seems to take mental illness as having a given, objective reality, without acknowledging that it is subject to social forces that influence how it is characterised and defined." This is in reference to the data that shows people have unfavorable views of mental illness, psychiatrists or psychologists (Jorm, 2012), and have varying degrees of stigma (Holman, 2015). Because of this, many people are more likely to talk to a friend, family member, or religious leader for mental health concerns (Mendenhall et al., 2014; Na et al., 2016; Picco et al., 2016). Therefore, it seems imperative to include an additional attribute to mental health literacy that allows for flexibility in this influential aspect: *context*. Since the context of a concept is considered during analysis (Tofthagen & Fagerstrøm, 2010), context must also be considered during concept utilization. As Jorm (2012) illustrated, a person cannot proceed with mental health literacy if they believe that the psychologist is not helpful.

To expand this definition, "contextual factors" as described in Jang et al. (2017) is added to the attributes, creating a fifth attribute that captures the variations in cultures, setting, age, and any other socioeconomic variables that may influence mental health literacy and its delivery or uptake. In Jang at al. (2017) important contextual factors were cultural familiarity and spiritual knowledge, as well as the effectiveness of prayer on mental health disorders. Conversely, cultural influence on mental health may be assumed or exploited, and resources may be allocated towards these contextual factors when none actually exist (Marie et al., 2004). In these situations, research becomes an important junction between determining relevant and appropriate context (attributes) and expected outcomes (consequences).

The expanded definition of mental health literacy gives nurses greater flexibility in using this concept for research or clinical application. The expanded definition for nurses for mental health literacy would then be: a) ability to recognize the problem, b) knowledge of causes and risk factors, c) knowledge of treatments and self-help, d) ability to obtain proper help resources, and e) application of contextual factors. Figure 5 in the Appendix illustrates the expanded definition for nurses.

Impact on Nursing

Mental health literacy has potential to be useful in the realm of nursing. However, it is not a nursing concept. This concept analysis has resolved two issues. The first is that the concept of mental health literacy has been clarified and updated to apply to nursing by including contextual factors that can have enormous effects on the outcomes of mental health literacy. The

second is that this expanded definition helps bring this concept to nursing in a way that can be applied in research applications and practical applications. This expanded definition is congruent with what was found in the literature review where mental health literacy has been used as a framework to compare groups, determine the impact of stigma, and find deficiencies, as well as in its original form to measure mental health literacy using any one of the various tools available

Conclusion

Mental health literacy has been in use for over 25 years and has been utilized in various fields such as psychology, sociology, and nursing. Although most of the work and advancements completed in this area has been done by psychologists, nurses have been using mental health literacy to ascertain the levels of comprehension in target populations. As a psychology concept, there was no clarification of the concept specifically for nurses. Nurses who used this concept had to decide on their own how they would proceed as there are a vast number of measuring tools, some of which are not rigorously tested, as well as the traditional vignette-based survey to measure mental health literacy.

To help clarify and expand this concept to nursing, a concept analysis using Rodgers' evolutionary method was performed. The data showed that the majority of researchers use the standard, original definition and consistently define mental health literacy in their work. However, the data also shows that mental health literacy has evolved from the original definition and can include stigma and first aid skills. The literature also shows that many studies have varying results to the various mental health literacy surveys and the data do not necessarily support each other. Some researchers speculate that these variations occur because of the differences in cultures or other specific socioeconomic factors. In order to include these variations in the concept of mental health literacy, an expanded definition has been introduced and its application to nursing. The updated definition includes the attribute of contextual factors. These factors can be any of the concrete variables such as ethnicity, race, and gender, and any abstract factors such as religious beliefs and stigma. The addition of contextual factors is within the spirit of the evolutionary method to allow for growth of the concept. This addition will help nurses understand the effect these variables have on mental health literacy and to be aware of these factors when conducting research.

References

Bjørnsen, H. N., Eilertsen, M.-E. B., Ringdal, R., Espnes, G. A., & Moksnes, U. K. (2017). Positive mental health literacy: Development and validation of a measure among Norwegian adolescents. *BMC Public Health, 17*, 1–10. https://doi.org/10.1186/s12889-017-4733-6

Centers for Disease Control and Prevention (CDC). (2019, April 10). *Mental health in the workplace*. U.S. Department of Health and Human Services. https://www.cdc.gov/workplacehealthpromotion/tools-resources/workplace-health/mental-health/index.html

Chamberlain, P. N., Goldney, R. D., Taylor, A. W., & Eckert, K. A. (2012). Have mental health education programs influenced the mental health literacy of those with major depression and suicidal ideation? A Comparison between 1998 and 2008 in South Australia. *Suicide & Life-Threatening Behavior*, *42*(5), 525–540. https://doi.org/10.1111/j.1943-278x.2012.00109.x

Choi, Y.-J. (2017). Effects of a program to improve mental health literacy for married immigrant women in Korea. *Archives of Psychiatric Nursing*, *31*(4), 394–398. https://doi.org/10.1016/j.apnu.2017.04.012

Fisher, L. J., & Goldney, R. D. (2003). Differences in community mental health literacy in older and younger Australians. *International Journal of Geriatric Psychiatry*, *18*(1), 33–40. https://doi.org/10.1002/gps.769

Foley, A. S. & Davis, A. H. (2017). A Guide to concept analysis. *Clinical Nurse Specialist*, *31*(2), 70–73. https://doi.org/10.1097/NUR.0000000000000277

Furnham, A., Lee, V., & Kolzeev, V. (2015). Mental health literacy and borderline personality disorder (BPD): What do the public "make" of those with BPD? *Social Psychiatry & Psychiatric Epidemiology*, *50*(2), 317–324. https://doi.org/10.1007/s00127-014-0936-7

Glasper, A. (2017). Promoting mental health first aid literacy in secondary schools. *British Journal of Nursing*, *26*(16), 944–945. https://doi.org/10.12968/bjon.2017.26.16.944

Goldney, R. D., & Fisher, L. J. (2008). Have broad-based community and professional education programs influenced mental health literacy and treatment seeking of those with major

depression and suicidal ideation? *Suicide & Life-Threatening Behavior*, *38*(2), 129–142. https://doi.org/10.1521/suli.2008.38.2.129

Gorczynski, P., Sims-Schouten, W., Hill, D., & Wilson, J. C. (2017). Examining mental health literacy, help seeking behaviours, and mental health outcomes in UK university students. *Journal of Mental Health Training, Education & Practice*, *12*(2), 111–120. https://doi.org/10.1108/JMHTEP-05-2016-0027

Guy, S., Sterling, B. S., Walker, L. O., & Harrison, T. C. (2017). Mental health literacy and postpartum depression: A qualitative description of views of lower income women. *Archives of Psychiatric Nursing*, *28*(4), 256–262. https://doi.org/10.1016/j.apnu.2014.04.001

Holman, D. (2015). Exploring the relationship between social class, mental illness stigma and mental health literacy using British national survey data. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness & Medicine*, *19*(4), 413–429. https://doi.org/10.1177/1363459314554316

Jang, Y., Park, N. S., Yoon, H., Ko, J. E., Jung, H., & Chiriboga, D. A. (2017). Mental health literacy in religious leaders: A qualitative study of Korean American Clergy. *Health & Social Care in the Community*, *25*(2), 385–393. https://doi.org/10.1111/hsc.12316

Jorm, A. (2020). We need to move from 'mental health literacy' to 'mental health action.' *Mental Health & Prevention*, *18*, 200179-. https://doi.org/10.1016/j.mhp.2020.200179

Jorm, A. F. (2000). Mental health literacy: Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry*, *177*(5), 396–401. https://doi.org/10.1192/bjp.177.5.396

Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist.*, *67*(3), 231–243. https://doi.org/10.1037/a0025957

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia*, *166*(4), 182–186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

Kim, E. J., Yu, J. H., & Kim, E. Y. (2020). Pathways linking mental health literacy to professional help-seeking intentions in Korean college students. *Journal of Psychiatric and Mental Health Nursing*, *27*(4), 393–405. https://doi.org/10.1111/jpm.12593

Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental Health Literacy: Past, present, and future. *Canadian Journal of Psychiatry, 61*(3), 154–158. https://doi.org/10.1177/0706743715616609

Kutcher, S., Wei, Y., Costa, S., Gusmão, R., Skokauskas, N., & Sourander, A. (2016). Enhancing mental health literacy in young people. *European Child & Adolescent Psychiatry*, *25*(6), 567–569. https://doi.org/10.1007/s00787-016-0867-9

Lee, C. Y., Furnham, A., & Merritt, C. (2017). Effect of directness of exposure and trauma type on mental health literacy of PTSD. *Journal of Mental Health, 26*(3), 257–263. https://doi.org/10.1080/09638237.2016.1276531

Lee, H. Y., Lytle, K., Yang, P. N., & Lum, T. (2010). Mental health literacy in Hmong and Cambodian elderly refugees: a barrier to understanding, recognizing, and responding to depression. *International Journal of Aging & Human Development*, *71*(4), 323–344. https://doi.org/10.2190/AG.71.4.d

Leonhardt, M. (2021, May 10). *What you need to know about the cost and accessibility of mental health care in America*. CNBC.com. https://www.cnbc.com/2021/05/10/cost-and-accessibility-of-mental-health-care-in-america.html

Li, T. M., Chau, M., Wong, P. W., Lai, E. S., Yip, P. S., Li, T. M. H., Wong, P. W. C., Lai, E. S. Y., & Yip, P. S. F. (2013). Evaluation of a web-based social network electronic game in enhancing mental health literacy for young people. *Journal of Medical Internet Research*, *15*(5), e80. https://doi.org/10.2196/jmir.2316

Liu, W., Gerdtz, M. F., & Liu, T. Q. (2011). A survey of psychiatrists' and registered nurses' levels of mental health literacy in a Chinese general hospital. *International Nursing Review*, *58*(3), 361–369. https://doi.org/10.1111/j.1466-7657.2011.00883.x

Mansfield, R., Patalay, P., & Humphrey, N. (2020). A systematic literature review of existing conceptualisation and measurement of mental health literacy in adolescent research: current challenges and inconsistencies. *BMC Public Health*, *20*(1), 607–607. https://doi.org/10.1186/s12889-020-08734-1

Marie, D., Forsyth, D. K., & Miles, L. K. (2004). Categorical ethnicity and mental health literacy in New Zealand. *Ethnicity & Health*, *9*(3), 225–252. https://doi.org/10.1080/1355785042000250085

May, S., Rapee, R. M., Coello, M., Momartin, S., & Aroche, J. (2014). Mental health literacy among refugee communities: Differences between the Australian lay public and the Iraqi and Sudanese refugee communities. *Social Psychiatry & Psychiatric Epidemiology*, *49*(5), 757–769. https://doi.org/10.1007/s00127-013-0793-9

Mendenhall, A., Frauenholtz, S., & Conrad-Hiebner, A. (2014). Provider perceptions of mental health literacy among youth. *Child & Adolescent Social Work Journal*, *31*(3), 281–293. https://doi.org/10.1007/s10560-013-0321-5

Na, S., Ryder, A. G., & Kirmayer, L. J. (2016). Toward a culturally responsive model of mental health literacy: Facilitating help-seeking among east Asian immigrants to North America. *American Journal of Community Psychology*, *58*(1/2), 211–225. https://doi.org/10.1002/ajcp.12085

Nagel, T. M., Thompson, C., Robinson, G., Condon, J., & Trauer, T. (2009). Two-way approaches to Indigenous mental health literacy. *Australian Journal of Primary Health*, *15*(1), 50–55. https://doi.org/10.1071/PY08052

National Alliance on Mental Illness (NAMI). (2024). Strength over silence: Stories of courage, culture and community. https://www.nami.org/Get-Involved/Awareness-Events/Bebe-Moore-Campbell-National-Minority-Mental-Health-Awareness-Month/Strength-Over-Silence

O'Keeffe, D., Turner, N., Foley, S., Lawlor, E., Kinsella, A., O'Callaghan, E., & Clarke, M. (2016). The relationship between mental health literacy regarding schizophrenia and psychiatric stigma in the Republic of Ireland. *Journal of Mental Health*, *25*(2), 100–108. https://doi.org/10.3109/09638237.2015.1057327

Office of Disease Prevention and Health Promotion (OASH). (2021, August 24). About healthy people. https://health.gov/our-work/national-health-initiatives/healthy-people/about-healthy-people

Parker, R., & Ratzan, S. C. (2010). Health Literacy: A second decade of distinction for Americans. *Journal of Health Communication*, *15*(sup2), 20–33. https://doi.org/10.1080/10810730.2010.501094

Patalay, P., Annis, J., Sharpe, H., Newman, R., Main, D., Ragunathan, T., Parkes, M., & Clarke, K. (2017). A Pre-post evaluation of OpenMinds: A sustainable, peer-led mental health literacy program in universities and secondary schools. *Prevention Science*, *18*(8), 995–1005. https://doi.org/10.1007/s11121-017-0840-y

Picco, L., Abdin, E., Chong, S. A., Shirlene Pang, Vaingankar, J. A., Sagayadevan, V., Kian Woon Kwok, Subramaniam, M., Pang, S., & Kwok, K. W. (2016). Beliefs about help seeking for mental disorders: Findings from a mental health literacy study in Singapore. *Psychiatric Services*, *67*(11), 1246–1253. https://doi.org/10.1176/appi.ps.201500442

Rabin, L. A., Miles, R. T., Kamata, A., Krishnan, A., Elbulok-Charcape, M., Stewart, G., & Compton, M. T. (2021). Development, item analysis, and initial reliability and validity of three forms of a multiple-choice mental health literacy assessment for college students (MHLA-c). *Psychiatry Research*, *300*, 113897–113897. https://doi.org/10.1016/j.psychres.2021.113897

Reavley, N. J., McCann, T. V., Cvetkovski, S., & Jorm, A. F. (2014). A multifaceted intervention to improve mental health literacy in employees of a multi-campus university: A cluster randomised trial. *Journal of Public Mental Health*, *13*(1), 25–39. https://doi.org/10.1108/JPMH-03-2013-0010

Reavley, N. J., Morgan, A. J., & Jorm, A. F. (2014). Development of scales to assess mental health literacy relating to recognition of and interventions for depression, anxiety disorders and schizophrenia/psychosis. *Australian & New Zealand Journal of Psychiatry*, *48*(1), 61–69. https://doi.org/10.1177/0004867413491157

Recto, P., & Champion, J. D. (2017). Assessment of Mental Health Literacy among Perinatal Hispanic Adolescents. *Issues in Mental Health Nursing*, *38*(12), 1030–1038. https://doi.org/10.1080/01612840.2017.1349224

Rodgers, B. L. (2000). Concept analysis: An evolutionary view. In B. L. Rodgers & K. A. Knafl (Eds.), *Concept development in nursing: Foundations, techniques, and applications* (pp. 77 – 102). Saunders.

Santana, S., Brach, C., Harris, L., Ochiai, E., Blakey, C., Bevington, F., Kleinman, D., & Pronk, N. (2021). Updating health literacy for healthy people 2030: Defining its importance for a new decade in public health. *Journal of Public Health Management and*

Practice, Publish Ahead of Print, S258–S264. https://doi.org/10.1097/PHH.0000000000001324

Selden, C. R., Zorn, M., Ratzan, S., Parker, R. M. (2000). Health literacy January 1990 through October 1999 : 479 citations. National Library of Medicine. https://webharvest.gov/peth04/20041119050151/http://www.nlm.nih.gov/pubs/cbm/hliteracy.pdf

Simonds, S. K. (1974). Health education as social policy. *Health Education & Behavior*, *2*(1_suppl), 1–10. https://doi.org/10.1177/10901981740020S102

Smiley, R. A., Allgeyer, R. L., Shobo, Y., Lyons, K. C., Letourneau, R., Zhong, E., Kaminski-Ozturk, N., & Alexander, M. (2023). The 2022 national nursing workforce survey. *Journal of Nursing Regulation*, *14*(1), S1–S90. https://doi.org/10.1016/S2155-8256(23)00047-9

Solomon-Maynard, M. (2020, November 5). *10 Surprising mental health statistics from 2020*. National Council for Mental Wellbeing. https://www.mentalhealthfirstaid.org/external/2020/11/10-surprising-mental-health-statistics-from-2020/

Stansbury, K. L., Peterson, T. L., & Beecher, B. (2013). An exploration of mental health literacy among older African Americans. *Aging & Mental Health*, *17*(2), 226–232. https://doi.org/10.1080/13607863.2012.724652

Stansbury K, & Schumacher M. (2008). An exploration of mental health literacy among African American clergy. *Journal of Gerontological Social Work*, *51*(1/2), 126–142. https://doi.org/10.1080/01634370801967596

The College for Behavioral Health Leadership. (n.d.). *Behavioral health literacy frameworks Canadian Allaince* [sic] *on Mental Illness and Mental Health.* Change4health.org. https://www.change4health.org/it-begins-with-you/ibwu-health-literacy/behavioral-health-literacy-frameworks/

Tofthagen, R., & Fagerstrøm, L. M. (2010). Rodgers' evolutionary concept analysis--a valid method for developing knowledge in nursing science. *Scandinavian Journal of Caring Sciences*, *24*, 21–31. https://doi.org/10.1111/j.1471-6712.2010.00845.x

Vaughn, V. (2023, February 14). The call for greater autonomy in nursing. Nurse.com. https://www.nurse.com/blog/autonomy-in-nursing/

Wei, Y., McGrath, P. J., Hayden, J., & Kutcher, S. (2015). Mental health literacy measures evaluating knowledge, attitudes and help-seeking: A scoping review. *BMC Psychiatry*, *15*(291), 291–291. https://doi.org/10.1186/s12888-015-0681-9

Wu, C.-Y., Liu, S.-I., Chang, S.-S., & Sun, F.-J. (2014). Surveys of medical seeking preference, mental health literacy, and attitudes toward mental illness in Taiwan, 1990-2000. *Journal of the Formosan Medical Association*, *113*(1), 33–41. https://doi.org/10.1016/j.jfma.2013.03.004

Yeo, S., Parker, G., Yap, H., & Mahendran, R. (2003). Mental health literacy beliefs: a comparison of psychiatric trained nurses and enrolled nurses in Singapore. *Journal of Psychosocial Nursing & Mental Health Services*, *41*(3), 34–43. https://doi.org/10.3928/0279-3695-20030301-12

Appendix

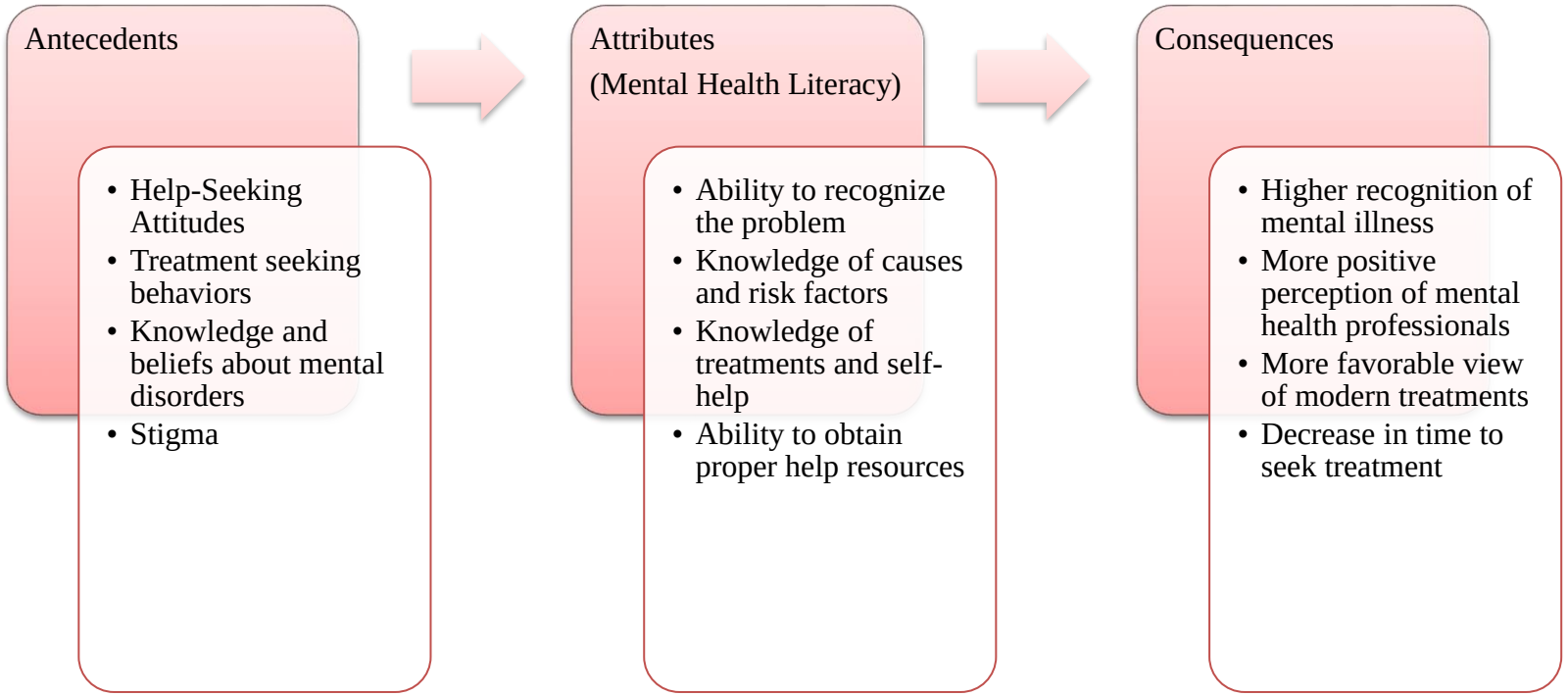


Figure 4. Antecedents, Attributes, and Consequences of Mental Health Literacy

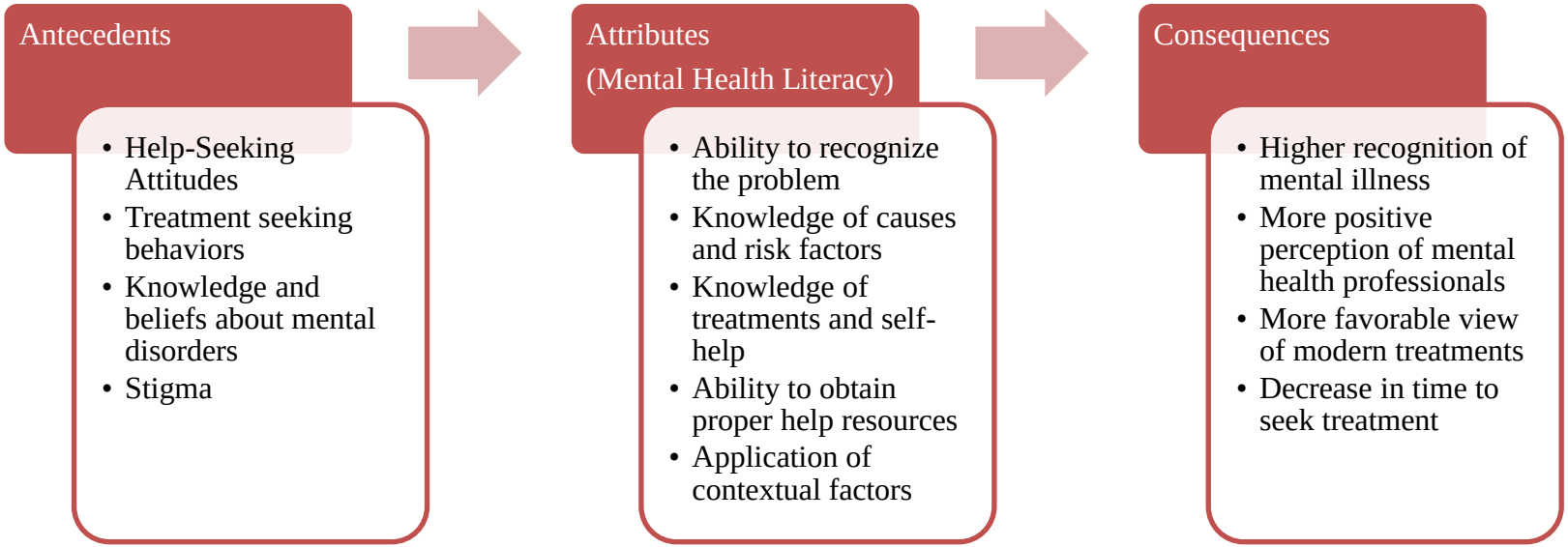


Figure 5. Expanded Definition of Mental Health Literacy for Nurses

CHAPTER IV

A RANDOMIZED CONTROLLED TRIAL FOR A BRIEF EDUCATIONAL INTERVENTION TO IMPROVE MENTAL HEALTH LITERACY IN ADOLESCENTS

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Abstract

In the United States, the number of adolescents diagnosed with a mental health condition has increased over the past decade. Novel approaches to prevention are warranted to reduce these numbers. School-based prevention programs exist but may cost too much or require a large time commitment. A concise, economical, school-based program is needed to fill this gap. This article presents the results of a randomized controlled trial (RCT) for a brief educational intervention to improve mental health literacy in adolescents. Participants (n = 68) were children in grades 6, 7 or 8, and their respective teachers at two different schools. Two teachers and their five classes participated. Students were randomized to the control or experimental group, where the experimental group participated in a one-hour mental health literacy education (MHLE) taught by their own teacher and the control group was assigned to a wait list. Both the control and experimental group completed the Mental Health Literacy Questionnaire (MHLq) three times: once before the MHLE, immediately after the MHLE, and one month after the MHLE. In the experimental group, there was a significant change in MHL scores of the MHLq ($p < 0.012$) with post-hoc comparisons showing a statistically significant difference in scores from pre-test to post-test ($p = 0.004$) and pre-test to follow up ($p = 0.002$). This study suggests that a brief and economical educational intervention can improve mental health literacy scores. Further investigation is necessary to determine if the MHLE has positive long-term effects on mental health literacy scores.

Key words: mental health literacy, Experiential Learning Theory, Mental Health Literacy Questionnaire (MHLq), adolescent mental health, nursing

Introduction

This article presents the findings of a randomized controlled trial for a brief educational intervention to improve mental health literacy in adolescents. The intervention, the mental health literacy education (MHLE), was developed to increase mental health literacy in adolescents.

This intervention is a response to the increase in mental health conditions (MHCs) in adolescence over the past decade (Leeb et al., 2024). Although some studies show that adolescents fail to seek help due to misattribution of symptom etiology (Loureiro et al., 2013), being unable to correctly recognize a mental health condition is not the only factor that contributes to an adolescent avoiding help. For example, in the United States, adolescents may

have symptoms of a mood disorder and perceive that they need help with their symptoms, but will go untreated (SAMHSA, 2025). These untreated adolescents describe barriers to seeking help such as feeling they should be able to handle it on their own, breach of trust, and not knowing where to go (SAMHSA, 2025).

The mental health literacy education (MHLE) examined in this study presented mental health information to adolescents with the intent to improve their ability to recognize a mental health condition, increase their understanding of protective factors, and increase their knowledge of helpful resources, practitioners, and behaviors that support mental health related decision making.

To accomplish this, the MHLE utilized the principles of mental health literacy (MHL) to condense the information into its most pertinent and effective parts, while using experiential learning theory (ELT) to teach these principles quickly and efficiently. Mental health literacy (MHL) is defined as how one identifies, prevents, and manages a mental health condition (Jorm, 2000). Experiential learning theory (ELT) proposes learning through experience, where different modes of learning must be utilized (Kolb, 2015, p. 205). These modes, as defined by the theory, were incorporated into the MHLE, allowing for rapid comprehension by many types of learners in a short amount of time.

While there are many effective programs for adolescents, they can be costly or time-consuming (Milin et al., 2016; MHFA, 2025). The MHLE is different in that it is one hour long, does not require extensive training, and can be repeated as necessary.

Materials and Methods

Study design

A randomized controlled trial design was used to examine the effects of the mental health literacy education (MHLE) on mental health literacy scores. The control group was placed on a wait list to receive the MHLE after data collection.

Participants and Setting

Participants included students and their corresponding classroom teacher in grades 6, 7, and 8. Inclusion criteria for students were in-person attendance and ability to read, write, and comprehend basic English. Inclusion criteria for Teachers were teaching of a class in grade 6, 7, or 8 in English. Both teacher and students must have been in the class for at least one month. Non-mainstream classes, such as special education, were excluded. Participants were recruited

from charter schools in a metropolitan area in the southwestern United States. Schools were selected as the study setting owing to the familiarity of ELT by educators and to allow the most widespread distribution of the intervention.

Procedures

Following the granting of IRB approval, potential schools were identified using the state's list of operating charter schools. Principals were contacted about the study via email. Interested principals helped identify teachers and classes that could participate. The potential teachers were contacted via email and those who were interested met with the investigator (PI) to provide consent, review inclusion criteria for their students, sign their consent forms, and receive training to present the MHLE. Teacher training included a prepared packet for the teachers to read, a ten-question knowledge assessment, and review of the MHLE.

The PI met with potential students in their classroom in person during normal school hours. The PI gave each student a packet with an assent form, study summary, and opt-out form for the parents or guardians. Interested students signed their own assent forms and returned them to the PI. The students brought home the packet for their parents or guardians to look over. Parents or guardians who did not agree signed and returned the opt-out form to the teacher. Copies of signed assent and opt-out forms were returned to the participants.

Participating teachers scheduled the day and time for survey completion and MHLE presentation. Randomization occurred at the classroom level in an alternating fashion with a random start: the first class to complete measures was assigned the experimental condition. A pre-test was given to consenting students to measure baseline mental health literacy. At least a week later, the MHLE was presented to the experimental group, and the post-test was completed immediately afterward. Classes assigned as control groups completed the same measures on the same schedule. Teachers completed a feasibility survey immediately after presenting the MHLE.

The Intervention – Mental Health Literacy Education (MHLE)

The Mental Health Literacy Education (MHLE) was presented to the experimental group. The MHLE was constructed using MHL to break up the information into its most important parts (identification, management, and prevention) and using Experiential Learning Theory (ELT) to teach these parts effectively. The MHLE is on presentation software and begins with explaining what MHL is and how it can help. After that, the topic is presented (depression) using statistics and a “thought question” is asked. The presentation continues on to explain each part of MHL

using video, pictures, thought questions, and activities provided on a separate handout. In the notes section of each slide, the parts of MHL and ELT used are identified. For example, the note may say "MHL: Identify – biology; ELT: Concrete: introduce new experience, listen, feeling watching..." The notes will also give cues for when to ask thought questions, when to repeat important information, when to look at worksheets, and when to use active experimentation. See Appendix for the MHLE in print form.

Power Analysis and Ethical Considerations

Power analysis was conducted for sample size estimation, based on pre and post intervention scores from Campos et al. (2018). Using PASS 2023 software and an effect size of 0.60 and an alpha of 0.05, a minimum sample size of N = 15 students per group, with a total of 30 students, yields 0.83 power to detect differences in the interaction between time and group. This study was approved by the Human Research Protection Program of the University of Tennessee Knoxville (UTKIRB-24-08438-XP).

Measures

MHLq. Data for the pre-test, post-test, and follow-up were collected using the Mental Health Literacy Questionnaire (MHLq) by Campos et al. (2016). The MHLq was developed specifically for adolescents aged 11 to 17. It assesses mental health literacy globally, as well as subscales for help-seeking, knowledge, and self-help (Campos et al., 2016). It uses a 5-point Likert-type scale for 33 questions.

AIM IAM FIM. Feasibility of the MHLE was measured with the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM). The AIM, IAM, and FIM each consist of five-items on an ordinal scale that assess how much the user agrees with the given description of the construct as it applies to the MHLE. A free text field was included for comments and suggestions.

Statistical Analysis

Repeated measures ANOVA was used to examine the interactions between group and time for the pre-test and post-test. Descriptive statistics were used to examine group demographics and score distribution, appropriate to the level of measurement of the variables. Chronbach's alpha was 0.73 for the pre-test, 0.88 for the post-test, and 0.85 for the follow-up. SPSS v31 was used to calculate all statistics.

Results

At follow-up, 68 students and two teachers in two schools completed study activities. The average age was 12.45 years old for the experimental group and 12.39 years old for the control group. Most participants identified as a girl (44.7%) and white or Caucasian (40.2%). See Table 2 for more demographic data. Base MHL scores were 128.8 for the entire group. See Table 3 for MHL score data. There were no statistically significant differences between groups at baseline on any variables examined (age, ethnicity, and base score).

Most students were in 8th grade (47.1%), had at least one working parent or guardian (85.1%) and knew someone with a MHC (71.3%), usually depression (18.4%). The person with a MHC was usually family (21.8%) or friends (20.7%), but also themselves (9.2%). See Table 4 for more group characteristics.

There was a significant change in MHL scores between the experimental and control groups over three time points ($F(2, 65) = 4.7$, $p = 0.012$). For the experimental group, the post-hoc pairwise comparisons showed statistically significant differences in scores from pre-test to post-test ($p = 0.004$) and pre-test to follow-up ($p = 0.002$). There were no significant differences

Table 2. Group Demographics at Pre-Test

Group Demographics

	Experimental	Control	All
Age (mean)	12.45 (*n*=44)	12.39 (*n*=33)	12.43 (*n*=77)
Ethnicity			
White or Caucasian	35.4% (*n*=17)	47.1% (*n*=16)	40.2% (*n*=33)
Multiracial or Biracial	12.5% (*n*=6)	17.6% (*n*=6)	14.6% (*n*=12)
Other not listed	12.5% (*n*=6)	17.6% (*n*=6)	14.6% (*n*=12)
Hispanic or Latino	18.8% (*n*=9)	5.9% (*n*=2)	13.4% (*n*=11)
Black or African American	8.3% (*n*=4)	2.9% (*n*=1)	6.1% (*n*=5)
Asian or Pacific Islander	2.1% (*n*=1)	2.9% (*n*=1)	2.4% (*n*=2)
Total	*n*=48	*n*=34	*n*=82
Gender			
Girl	51.0% (*n*=25)	36.1% (*n*=13)	44.7% (*n*=38)
Boy	34.7% (*n*=17)	33.3% (*n*=12)	34.1% (*n*=29)
Something Else	14.3% (*n*=7)	30.6% (*n*=11)	21.2% (*n*=18)

Note: N=87. Demographics taken from entire group at pre-test. Total *n* are not equal for each demographic due to some questions not being answered by the participant. "Something Else" in the gender category corresponds to a free text box where participants wrote in the gender they identified with.

Table 3. Average MHL Scores at Three Time Points

MHL Scores

	Pre-Test	Post-Test	Follow-up
Experimental (*n*=29)	127.33	131.61	131.77
Control (*n*=39)	130.34	128.52	128.97
All (*n*=68)	128.62	130.29	130.57

Note: Scores presented are the means. MHL scores were captured by the MHLq (Campos et al., 2016).

Table 4. Group Characteristics at Pre-Test

Group Characteristics

	n	%
Grade		
6	15	17.2%
7	30	34.5%
8	41	47.1%
Working Parent?		
Yes	74	85.1%
No	4	4.6%
Know someone with a MHC?		
Yes	62	71.3%
No	2	2.3%
I Don't Know	16	18.4%
Which MHC does this person have?		
Depression	16	18.4%
ADHD	4	4.6%
Anxiety	3	3.4%
Autism	3	3.4%
I don't know	4	4.6%
Depression and at least one other	10	11.4%
ADHD and at least one other	4	4.6%
Who is this person?		
Family	19	21.8%
Friend	18	20.7%
Myself	8	9.2%
Family, friend	4	4.6%
Family, friend, myself	10	11.5%

Note: Data captured from the MHLq at pre-test. N=87. Some characteristics may not equal 87 due to some participants not answering the question.

from post-test to follow-up (p = 0.899) in the experimental group. For the control group, differences in mean MHL scores were not statistically significant from pre-test to post-test, pre-test to follow-up, or post-test to follow-up.

The two participating teachers were female, had a bachelor's degree and taught science class in their respective schools for 10 and 26 years respectively. Neither had extensive experience teaching mental health. The AIM, IAM, and FIM show that the teachers found the MHLE appealing, suitable, and easy to use. All answers were marked either "agree" or "completely agree." In the free text box, both teachers entered similar suggestions of fewer videos, additional slides, and at least one activity involving student dyads to enhance learning and recall.

Discussion

The MHLE had a statistically significant impact upon MHL scores in this sample. Therefore, this randomized controlled trial suggests 1) mental health literacy can be improved in a short period of time and that 2) a short one-hour course containing high-yield mental health information is acceptable and feasible to teachers not specifically trained in mental health. By using the principles of mental health literacy (MHL) and Experiential Learning Theory (ELT), an efficient and cost-effective educational intervention can be created for specific mental health conditions. These results are comparable to the few RCT studies on adolescent MHL, which saw increases in MHL scores but the intervention was longer in length (Perry et al., 2014), had longer teacher training (Milin et al., 2016) or had significant cost (Morgan et al., 2020; MHFA, 2025). Similar improvements are also comparable to studies using a short program, but not all were RCTs (Ojio et al., 2019; Yamaguchi et al., 2020).

Overall MHL scores improved in this sample. Both post-test and follow-up were higher than the pre-test. Notably, there was no decrease in mean score at follow-up. Although this sample is small with a shorter follow-up compared to other studies (Perry et al., 2014; Yamaguchi et al., 2020), there is preliminary evidence that using Experiential Learning Theory to teach mental health topics may help students retain the material longer. A benefit of using a theory to guide this intervention is that the intervention is amenable to improvements. For example, both teachers had suggested that there should be more peer-to-peer problem solving, as opposed to so many videos in a row. In the MHLE, the videos encompass concrete, reflective, and abstract modes and may be linking with emotion too often without providing an opportunity

to practice skills and discover the value of this knowledge, which would be active experimentation. This is where changes could be made to better reflect the educational goals of the students.

The teachers in this study appreciated the MHLE organization and reported they found it easy to follow. Both teachers had the same suggestions of reducing the number of videos, or perhaps shortening some of them, as well as creating a slide to allow for student-to-student interaction. Although the intent of this intervention was to reduce the amount of peer interaction, a short 2-minute question and answer feedback could be appropriate and still maintain the learning modes in ELT.

Limitations

The greatest limitation is the small participant pool. This study was powered to find differences in overall score. A larger sample may be able to show differences in the subscales of the MHLq, which could help fine-tune any future interventions. Participants from more schools could also help aggregate data to show any differences between gender, age, or ethnicity. Another limitation is not observing the teacher-student interaction. Although this was done so that the students would be in their natural environment, there is no way to account for any differences in presentation from the teacher.

Conclusion

Although there are many effective school-based mental health programs available for adolescents, many of them require large fees, a mental health professional to proctor the course, or require long training sessions for teachers. These barriers may reduce the number of these programs available in schools. The mental health literacy education (MHLE) based on the principles of mental health literacy and guided by Experiential Learning Theory (ELT), is one possible solution needed for mental health education in schools. It is cost-effective, time-efficient, and does not require a teacher to become a mental health expert before teaching the topic. Future studies should test this intervention further using a second follow-up test after six months to see if the intervention has any lasting effects, the impact of this type of intervention upon other outcomes, and how useful MHL and ELT may be to address other mental health topics for adolescents.

References

Campos, L., Dias, P., Duarte, A., Veiga, E., Dias, C. C., & Palha, F. (2018). Is it possible to "Find Space for Mental Health" in young people? Effectiveness of a school-based mental health literacy promotion program. *International Journal of Environmental Research and Public Health, 15*(7), 1426. https://doi.org/10.3390/ijerph15071426

Campos, L., Dias, P., Palha, F., Duarte, A., & Veiga, E. (2016). Development and psychometric properties of a new questionnaire for assessing mental health literacy in young people. *Universitas Psychologica, 15*(2), 61-72. https://doi.org/10.11144/Javeriana.upsy15-2.dppq

Jorm, A. F. (2000). Mental health literacy: Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry, 177*(5), 396–401. https://doi.org/10.1192/bjp.177.5.396

Kolb, D. A. (2015). *Experiential learning : Experience as the source of learning and development* (2nd ed.). Pearson Education Ltd.

Leeb, R. T., Danielson, M. L., Claussen, A. H., Robinson, L. R., Lebrun-Harris, L. A., Ghandour, R., Bitsko, R. H., Katz, S. M., Kaminski, J. W., & Brown, J. (2024). Trends in mental, behavioral, and developmental disorders among children and adolescents in the US, 2016–2021. *Preventing Chronic Disease*, *21*. https://doi.org/10.5888/pcd21.240142

Loureiro, L. M., Jorm, A. F., Mendes, A. C., Santos, J. C., Ferreira, R. O., & Pedreiro, A. T. (2013). Mental health literacy about depression: A survey of Portuguese youth. *BMC Psychiatry, 13*(1), Article 129. https://doi.org/10.1186/1471-244X-13-129

Mental Health First Aid (MHFA). (2025). *Certification Process*. National Council for Mental Wellbeing. https://www.mentalhealthfirstaid.org/become-an-instructor/certification-process/

Milin, R., Kutcher, S., Lewis, S. P., Walker, S., Wei, Y., Ferrill, N., & Armstrong, M. A. (2016). Impact of a mental health curriculum on knowledge and stigma among high school students: A randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 55*(5), 383-391.e1. https://doi.org/10.1016/j.jaac.2016.02.018

Morgan, A. J., Fischer, J.-A. A., Hart, L. M., Kelly, C. M., Kitchener, B. A., Reavley, N. J., Yap, M. B. H., & Jorm, A. F. (2020). Long-term effects of Youth Mental Health First Aid

training: Randomized controlled trial with 3-year follow-up. *BMC Psychiatry*, *20*(1). https://doi.org/10.1186/s12888-020-02860-1

Ojio, Y., Foo, J. C., Usami, S., Fuyama, T., Ashikawa, M., Ohnuma, K., Oshima, N., Ando, S., Togo, F., & Sasaki, T. (2019). Effects of a school teacher-led 45-minute educational program for mental health literacy in pre-teens. *Early Intervention in Psychiatry*, *13*(4), 984–988. https://doi.org/10.1111/eip.12746

Perry, Y., Petrie, K., Buckley, H., Cavanagh, L., Clarke, D., Winslade, M., Hadzi-Pavlovic, D., Manicavasagar, V., & Christensen, H. (2014). Effects of a classroom-based educational resource on adolescent mental health literacy: A cluster randomised controlled trial. *Journal of Adolescence*, *37*(7), 1143–1151. https://doi.org/10.1016/j.adolescence.2014.08.001

Substance Abuse and Mental Health Services Administration (SAMHSA). (2025, July). *Key substance use and mental health indicators in the United States: Results from the 2024 national survey on drug use and health.* Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. https://www.samhsa.gov/data/data-we-collect/nsduh-national-surveydrug-use-and-health/national-releases

Yamaguchi, S., Ojio, Y., Foo, J. C., Michigami, E., Usami, S., Fuyama, T., Onuma, K., Oshima, N., Ando, S., Togo, F., & Sasaki, T. (2020). A quasi-cluster randomized controlled trial of a classroom-based mental health literacy educational intervention to promote knowledge and help-seeking/helping behavior in adolescents. *Journal of Adolescence*, *82*, 58–66. https://doi.org/10.1016/j.adolescence.2020.05.002

CHAPTER V
CONCLUSION

Summary

In this dissertation, three pieces of research were presented to support how nurses can improve mental health literacy in adolescents: a literature review, a concept analysis, and a randomized controlled trial. This chapter will summarize the findings of these investigations, how the findings impact nursing, education, and policy, and the next steps for further research.

For mental health literacy (MHL) in nursing, the literature review revealed that research tends to focus on measuring MHL in the nursing population, with some use of the principals for measuring and creating an intervention for adults. There were only four studies that focused on adolescents, three of which measured MHL (Recto and Champion, 2017; Loureiro et al., 2013; Al Omari et al., 2020). Only one applied MHL to create a framework to assess the needs of pregnant adolescents (Recto et al., 2017). There were no studies testing an intervention in adolescents.

Nurses may take advantage of this scarcity of adolescent MHL research and begin to use MHL in ways that apply the principles to improve mental health in addition to measuring it. However, it may be difficult to begin this type of research because there is very little data to build upon. In order to use MHL in action, nurses must define what MHL is within the nursing domain. Some studies have shown that MHL can be useful to create frameworks (Recto et al., 2017) and has some potential to become a theory, although it cannot be used as such at this point (Spiker and Hammer, 2018). Further research is necessary to define what MHL is as it pertains to nurses, how can MHL be used in the clinical and research aspects of nursing, and which groups of people, if any, would benefit from nurse-led MHL interventions.

To understand how mental health literacy (MHL) is used and defined in nursing, a concept analysis using Rodgers' Evolutionary Method (Rodgers, 2000) was conducted. In nursing specifically, MHL is defined as was originally coined by Jorm et al. (1997). There is some expansion of the definition, but is not used overwhelmingly in research, perhaps to maintain brevity (Jorm, 2000; Kutcher et al., 2016; Wei et al., 2015). Most nurses use MHL as a tool to measure knowledge and attitudes on mental health in someone, usually an adult. Almost all studies done by nurses define MHL in the same way and use it the same way - to measure.

MHL is not a nursing concept, as it was developed in the field of psychology, and may be why nurses do not apply MHL to novel research ideas. It seems that nurses use MHL as a measuring tool only, even though the original creators specify that there is an action element to it

and that MHL can be applied to methods that improve mental health (Jorm, 2012; Jorm, 2020). For this reason, I have suggested an expanded definition of MHL that can be applied to nursing. Adding "contextual factors" to the attributes captures the variations in cultures, setting, age, and other socioeconomic variables that may influence mental health literacy and its delivery or uptake. Adding this attribute allows nurses flexibility in applying MHL in research and clinical applications. This flexibility may be what nurses need to use the principles of MHL in ways beyond measuring.

The randomized controlled trial in this dissertation demonstrated that a concise educational intervention could raise MHL scores in adolescents. The purpose of the MHLE is twofold. First, it was designed as a theory-based intervention, allowing for testing and changes in accordance with the theory. In this case, Experiential Learning Theory (ELT) was used to guide the intervention and improve upon it. For example, the teacher's suggestion of less video and more student-to-student interaction indicates a possible imbalance of the learning modes for these adolescents. Too many videos may suggest that there is too much time spent on reflective observation (RO) and not enough time on abstract conceptualization (AC) or active experimentation (AE). Because the MHLE is theory-based, the intervention can be adjusted and retested according to the theory. There is no need to guess what can compensate or improve the intervention.

Second, the MHLE was developed to greatly reduce the amount of mental health training required to be effective. Research has shown that teachers are reluctant to teach mental health topics for various reasons, including lack of training and confidence (Kann et al., 2007; O'Farrell et al., 2023). Providing a program that is easy to learn, easy to implement, and easy to incorporate into the existing class schedule allows mental health education to be included in any class by any teacher who is interested in teaching the topic.

Support for the MHLE in a classroom setting was evident on the AIM, IAM, and FIM. Both teachers answered "completely agree" for "The MHLE is appealing to me" and "The MHLE is easy to use." Both teachers answered "agree" for "The MHLE meets my approval" and "The MHLE seems suitable." All questions on the AIM, IAM, and FIM were answered with "agree" or "completely agree" suggesting that the MHLE is easy to learn and implement. Comments from the teachers for the MHLE were positive and they appreciated the way it was organized, further supporting the use of experiential learning theory with the MHLE.

Overall, the research and randomized controlled trial presented support the three main hypotheses of this dissertation. The first is that this concise course did show a significant difference in mean MHL scores after the MHLE and those scores were higher than baseline. The second is that there was a significant difference in mean MHL scores at follow-up compared to baseline and that score remained elevated after the MHLE. Not only was the score elevated, it also did not decrease from its post-test value. Third, teachers did find the MHL feasible and found it easy to use and organized well.

Theoretical Implications

When comparing the MHLE to other similar MHL educational programs, some stark differences are notable. One of the most obvious is that the MHLE is guided by a theory. Most MHL education programs are not guided by a theory or the theory that guides the intervention is not obvious. Although many other programs are successful, having a guiding theory gives the intervention a solid footing to expand on and test against. In the randomized controlled trial (RCT) presented, utilizing each mode and incorporating relevant questions and activities during the presentation resulted in an increase in MHL scores. The outcomes of this RCT suggest that ELT is an effective way to teach mental health topics in the school setting.

Practically, improvements to the intervention can include a more balanced approach to the learning modes, e.g., reduce the time in reflective observation (RO) and increase others, or increasing opportunities for active experimentation. This may come in the form of "giving homework" such as finding websites on the sheet and answering one question from the presentation or assigning the students to ask their parents or guardians to answer one question from the presentation.

Research Implications

For many years, research in adolescent mental health literacy has been sparse, with many studies lacking rigor, not using validated tools, and having high risk of bias (Wei et al., 2013). Of the studies that have sufficient rigor, very few conduct follow-up studies after the post-test (Ma et al., 2023). The study presented in this dissertation was designed to be rigorous, use a validated tool, have an adequate follow-up, and reduce bias as much as possible. The results demonstrate that combining these attributes is possible and can be carried out successfully. Future research on school-based MHL programs for adolescents should strive to maintain scientific rigor and include at least one follow-up with a minimum of one month post intervention.

Even with all the desired attributes covered, limitations still exist and there is still room for improvement. For the study presented in this dissertation, some limitations are sample size and attrition, maturation, testing, history, and selection bias (Campbell & Stanley, 1963, pp. 13-16). Specifically, there was 21% attrition from pre-test to follow-up. The original power analysis considered 20% attrition, which closely matched the outcomes. Students were not advised of their group designations (experimental or control) until after the pre-test and were not told of the specific dates of the presentation. This strategy was to allow for "natural" reasons to be absent from school such as illness or transportation issues, rather than because they did not want to participate in the study. When asked why students were absent, the teachers mostly responded with illness as a reason. Although this study was powered properly for overall MHL scores, future studies may want to have a larger sample size or include more schools to decrease any possible effects of attrition.

Maturation may also have influenced the outcomes of this study. Since the sample is all adolescents, maturation may be a larger factor than with an adult group due to the progressively growing mind and emotional regulation. An adolescent being presented with new material may learn it faster and make emotional connections faster than an adult. This may be a desired effect that can potentiate learning, thus imprinting the material in the adolescent mind more readily than an adult's mind. Maturation may need to be looked at in future studies if comparing outcomes to adults or even older adolescents with experience of a MHC.

Repeat testing can also be a factor with internal validity, especially in a design with three data collection points. This threat was considered by using a shorter test with answers you can select from. The survey was also adolescent specific, using language that was understandable for ages 11 to 15 (Campos et al., 2016). The follow-up test was given with enough time in between from post-test so that there would be less fatigue (Roberts et al., 2010). Future studies may need to consider the effects of repeat testing because there should be at least one more testing point at 6 months to see how the students retained the information.

In this study, history can be a considerable threat and must be examined. Intrasession history is likely the greatest factor in this study because the design excluded the researcher from observing the presentation (Campbell & Stanley, 1963, pp. 13-14). This has potential to cause large differences in how the intervention was presented. This was done in this way so the students were in their most natural environment and only interacting with the teacher and the

presentation, avoiding students from overly participating by "looking smart" and "being on their best behavior" because there was someone watching them. Even though the teacher was trained to only read the slides as is and choose one question to ask for each thought question, there is no way for the researcher to know if the teacher brought up personal experiences, had a longer discussion with one class and not another, or had differences in attitude when presenting due to fatigue or class behavior. These small differences could affect the outcomes.

Conversely, the presence of an outsider may turn them off and cause less participation. During data collection of the pre-test, I was asked multiple times by the students if there was going to be a "professional" coming to do the presentation. After assuring the students it was only between them and their teacher, some students were relieved and stated that they "don't want strangers coming to teach us" and that they "don't like those people they hire to talk about stuff." These candid responses assured me that this was the appropriate design, but there are considerations. Future studies will have to take this seriously and may wish to consider video recording the teacher only, with audio for the class, or use direct observation of student-teacher interactions with caution so that differences in presentation can be identified.

The most pernicious threat in this study and this type of study design is selection bias (Pannucci & Wilkins, 2010). This bias does not come from the researcher, but rather the principals and the teachers participating in the study. When contacting schools, principals are the first to decide if their school should participate. This study had a response rate of approximately 16% (31 schools contacted, 5 responded: 1 did not fit inclusion criteria, 1 did not want to participate after initial meeting, 1 dropped out after consents were given out to the students, 2 participated fully). Those principals who want to participate have in mind some classes that may be eligible. It is possible that the principals are thinking of their best-behaved classes or classes with advanced level students so that the study would go to completion. This presents the researcher with classes that may or may not be representative of an average student in that school or in the area. Once the teachers are involved, they too may select their best classes, which may or may not represent the average of the school or the area.

Randomization may not fully guard against this type of selection bias, as this behavior may be repeated by all principals and teachers who wish to participate. In this study, there were no significant differences in age, gender, or ethnicity between groups. When examining the free text data, most students lived near the school, or at least in the same city as the school, and had

parents or guardians with relatively common jobs such as teacher, warehouse worker, therapist, or management, that it appeared that the socioeconomic levels were similar. However, the groups in this study being similar do not mean they represent the population of adolescents who may have vastly different socioeconomic backgrounds. Future studies using this method of selection may want to randomize and use a larger sample size in order to use a cluster randomized control trial design (CRT) so that confounding variables can be controlled using mixed model analysis (Miller et al., 2020).

Nursing Implications

This study and its outcomes have implications specific to nursing. The first is that nursing and nursing research can impact other fields such as education. Nursing knowledge of mental health conditions can be used to give credence to content and give confidence to those who are presenting or utilizing the content. This can open future collaborations with nursing and adolescent educators.

Second, public health nurses, psychiatric nurses, and school nurses can use this research to further their own research interests or expand this subject further. For example, school nurses may want to encourage their schools to use this type of program to teach mental health topics in health class or any class. School nurses would be able to check and approve content, giving teachers the confidence needed to teach mental health. Psychiatric nurses may be able to do their own research to refine the intervention, offering it to after school programs in their community. Public health nurses interested in prevention can advocate for this type of theory-based mental health education in schools and are well-trained to implement and test this intervention in their community.

Education Implications

Educators working with adolescents can benefit greatly from this research, although some nursing educators can benefit as well. First, this study highlights the benefits of using a theory-based intervention directly in the classroom. As stated throughout this dissertation, there are many successful school-based programs available that may increase MHL. However, there are few, if any, that use a theory to guide the intervention. The theory used, Experiential Learning Theory (ELT), is very familiar to educators and can increase the appeal of using such an intervention. Second, the brevity of this intervention will allow educators to fit this type of intervention in their own schedule when they see fit. This would make the MHLE seem less like

another task that has to be done and more like something enjoyable that can be used to change the schedule, change the pace of the lessons, or just to do something different. Third, the straightforward and well-organized content gives educators a sense of practicality and that this intervention is easy to use.

In nursing education, the MHLE represents research and scholarship. It may be beneficial to highlight other studies that use an RCT design or that Experiential Learning Theory can be applied to independent research. This study can be used to show that nurses can apply knowledge from other professions, and they can solve problems that may appear to be outside of the nursing domain.

Policy Implications

Policy implications from this study are mostly at the school level. First, a school interested in adding any mental health to their curriculum can use an intervention like the one in this dissertation because of its ease of use and reduced training time. Many schools do not have a mental health professional on hand, nor do they have a mental health curriculum at the ready (Kann et al., 2007). An intervention like the MHLE would be able to fill that gap, providing mental health education to the students with any willing teacher.

A distinct advantage with using this intervention in a classroom setting is that it is measurable. The MHLE can be measured, which would show its effectiveness. These measurements would give principals and teachers hard evidence about what is working and what is not working, saving time and money. Furthermore, because the MHLE is based on Experiential Learning Theory, teachers would be able to modify the components of the MHLE to better serve their particular student population. For example, if students are consistently scoring low on "help-seeking" questions of the Mental Health Literacy Questionnaire (MHLq), teachers can add more discussion or videos about help-seeking.

Measurements can also show if the students are retaining the information. If a follow-up survey shows that students' MHL scores go down after 5 months, schools may want to repeat the course at the 4-month mark to help solidify the information. Repeating the one-hour presentation would be easier than redoing a six-week course or paying a mental health professional to come in again to go over what was taught from the time before.

Finally, what an intervention like the MHLE can do is give schools the evidence they need to secure funding for mental health services and training. In general, schools are not

automatically granted funds to offer mental health or other health classes and securing these funds are the responsibility of the school districts (Flannery, 2022). Using an intervention like the MHLE, schools can present the scores from the surveys to show need. Also, if schools are mandated to use certain programs, the MHLE can support schools to only use programs that can be measured, so that the money spent on these programs is put to good use. Since many programs available are not scientifically tested for efficacy, money should not be spent on programs that do not have a way to measure the results or have no supporting data of consistent improvements in the adolescent population.

Conclusion

This dissertation presents the experimental findings of a randomized controlled trial (RCT) of a theory-based educational intervention developed to improve mental health literacy (MHL) scores in adolescents. This intervention, named the mental health literacy education (MHLE), is guided by the Experiential Learning Theory (ELT) and designed to be presented in the standard classroom setting by any type of teacher. After a brief training session, the teacher conducted the intervention with their own class and students. Students were randomized to the experimental group or a wait-list control. Measurements of MHL scores were captured by the Mental Health Literacy Questionnaire (MHLq), which was specifically created for adolescents. The MHLq was given three times to both the experimental and control groups at pre-test (before the MHLE), post-test (after the MHLE), and follow-up (one month after the MHLE). Teacher satisfaction and feasibility with the MHLE was captured with the Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), and Feasibility of Intervention Measure (FIM) assessments, as well as with a free text box for suggestions and comments. The experiment took place across two charter schools in the Southwestern United States, in a large metropolitan area. There were two science teachers, one per school, and five classes – one in one school and four in the other school. The experiment took place over 10 weeks, with no teacher opting to complete the MHLE for the control group.

Using a repeated measures ANOVA, results showed a significant change in total MHL scores of the experimental group ($p < 0.012$) with post-hoc comparisons showing a statistically significant difference in scores from pre-test to post-test ($p = 0.004$) and pre-test to follow up ($p = 0.002$). Average MHL scores for the experimental group were 127.33 at pre-test, 131.61 at

post-test and 131.77 at follow-up. Teacher feasibility scores were all “agree” and “completely agree” for all items such as “The MHLE is appealing to me” and “The MHLE is easy to use.”

This dissertation also presented findings for a scoping review and concept analysis for mental health literacy in nursing. For the scoping review, databases were searched to find any nurse-led or nurse-included MHL research. A total of 23 articles were found in four main focal areas: (1) undergraduate nursing students - ten studies, (2) working nurses - five studies, (3) women and/or mothers - four studies and (4) across the lifespan - four studies. Major findings were that nurses mainly use MHL as a measuring tool and not for improving mental health or mental health literacy. Only one study used MHL to create a program to improve MHL.
The concept analysis included 65 included articles from nursing and various disciplines other than nursing. Major findings were that nurses generally use the original definition given by the creators of MHL, with some using an expanded version of the definition. In general, nurses use the concept of MHL as a definition only, essentially stopping at the attributes and not moving forward to the consequences. There was no article found that described an exemplar of someone applying the concept of MHL going through the antecedents, attributes, and consequences.

Several key findings can be found from these three pieces of research. The first is that a short, one-hour education intervention can improve MHL scores in adolescents. This can be significant for schools looking for cost-effective ways to include mental health in their health curriculum. Second, nursing research is lacking in adolescent mental health and the area of mental health literacy. More research can be done in these fields to actively improve mental health rather than only measure and report data. Third, nurses may need an action attribute in the concept of mental health literacy to fully utilize the concept. A suggestion was made to expand the concept to include application of context in order to empower nurses to use MHL to improve mental health. These findings should help support future nursing research in mental health literacy.

References

Al Omari, O., Wynaden, D., Alkhawaldeh, A., Al-Delaimy, W., Heslop, K., Al Dameery, K., & Bani Salameh, A. (2020). Knowledge and attitudes of young people toward mental illness: A cross sectional study. *Comprehensive Child and Adolescent Nursing, 43*(4), 301–313. https://doi.org/10.1080/24694193.2019.1670752

Campbell, D. T. & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Houghton Mifflin. https://www.sfu.ca/~palys/Campbell&Stanley-1959-Exptl&QuasiExptlDesignsForResearch.pdf

Campos, L., Dias, P., Palha, F., Duarte, A., & Veiga, E. (2016). Development and psychometric properties of a new questionnaire for assessing mental health literacy in young people. *Universitas Psychologica, 15*(2), 61-72. https://doi.org/10.11144/Javeriana.upsy15-2.dppq

Flannery, M. E. (2022, September 30). *How Delaware educators won mental health supports for students.* NEA.org. https://www.nea.org/advocating-for-change/new-from-nea/how-delaware-educators-won-mental-health-supports-students

Jorm, A. (2020). We need to move from 'mental health literacy' to 'mental health action.' *Mental Health & Prevention*, *18*, 200179-. https://doi.org/10.1016/j.mhp.2020.200179

Jorm, A. F. (2000). Mental health literacy: Public knowledge and beliefs about mental disorders. *British Journal of Psychiatry*, *177*(5), 396–401. https://doi.org/10.1192/bjp.177.5.396

Jorm, A. F. (2012). Mental health literacy: Empowering the community to take action for better mental health. *American Psychologist.*, *67*(3), 231–243. https://doi.org/10.1037/a0025957

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia*, *166*(4), 182–186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

Kann, L., Telljohann, S. K., & Wooley, S. F. (2007). Health education: Results from the school health policies and programs study 2006. *The Journal of School Health*, *77*(8), 408–434. https://doi.org/10.1111/j.1746-1561.2007.00228.x

Kutcher, S., Wei, Y., & Coniglio, C. (2016). Mental Health Literacy: Past, present, and future. *Canadian Journal of Psychiatry, 61*(3), 154–158. https://doi.org/10.1177/0706743715616609

Loureiro, L. M.., Jorm, A. F., Mendes, A. C., Santos, J. C., Ferreira, R. O., & Pedreiro, A. T. (2013). Mental health literacy about depression: A survey of Portuguese youth. *BMC Psychiatry*, *13*(1), 129–129. https://doi.org/10.1186/1471-244X-13-129

Ma, K. K. Y., Anderson, J. K., & Burn, A. (2023). Review: School-based interventions to improve mental health literacy and reduce mental health stigma – A systematic review. *Child and Adolescent Mental Health*, *28*(2), 230–240. https://doi.org/10.1111/camh.12543

Miller, C. J., Smith, S. N., & Pugatch, M. (2020). Experimental and quasi-experimental designs in implementation research. *Psychiatry research*, *283*, 112452. https://doi.org/10.1016/j.psychres.2019.06.027

O'Farrell, P., Wilson, C., & Shiel, G. (2023). Teachers' perceptions of the barriers to assessment of mental health in schools with implications for educational policy: A systematic review. *The British Journal of educational psychology*, *93*(1), 262–282. https://doi.org/10.1111/bjep.12553

Pannucci, C. J., & Wilkins, E. G. (2010). Identifying and avoiding bias in research. *Plastic and reconstructive surgery*, *126*(2), 619–625. https://doi.org/10.1097/PRS.0b013e3181de24bc

Recto, P., & Champion, J. D. (2017). Assessment of Mental Health Literacy among Perinatal Hispanic Adolescents. *Issues in Mental Health Nursing*, *38*(12), 1030–1038. https://doi.org/10.1080/01612840.2017.1349224

Recto, P., & Champion, J. D., & Mackert, M. (2017). Assessing the mental health needs of pregnant adolescents: Health literacy frameworks to guide research and practice. *Research and Theory for Nursing Practice*, *31*(2), 137–155. https://doi.org/10.1891/1541-6577.31.2.137

Roberts, C., Eva, G., Allum, N., & Lynn, P. (2010). *Data quality in telephone surveys and the effect of questionnaire length: A cross-national experiment. Institute for Social and Economic Research.* https://www.econstor.eu/bitstream/10419/65960/1/640266584.pdf

Rodgers, B. L. (2000). Concept analysis: An evolutionary view. In B. L. Rodgers & K. A. Knafl (Eds.), *Concept development in nursing: Foundations, techniques, and applications* (pp. 77 – 102). Saunders.

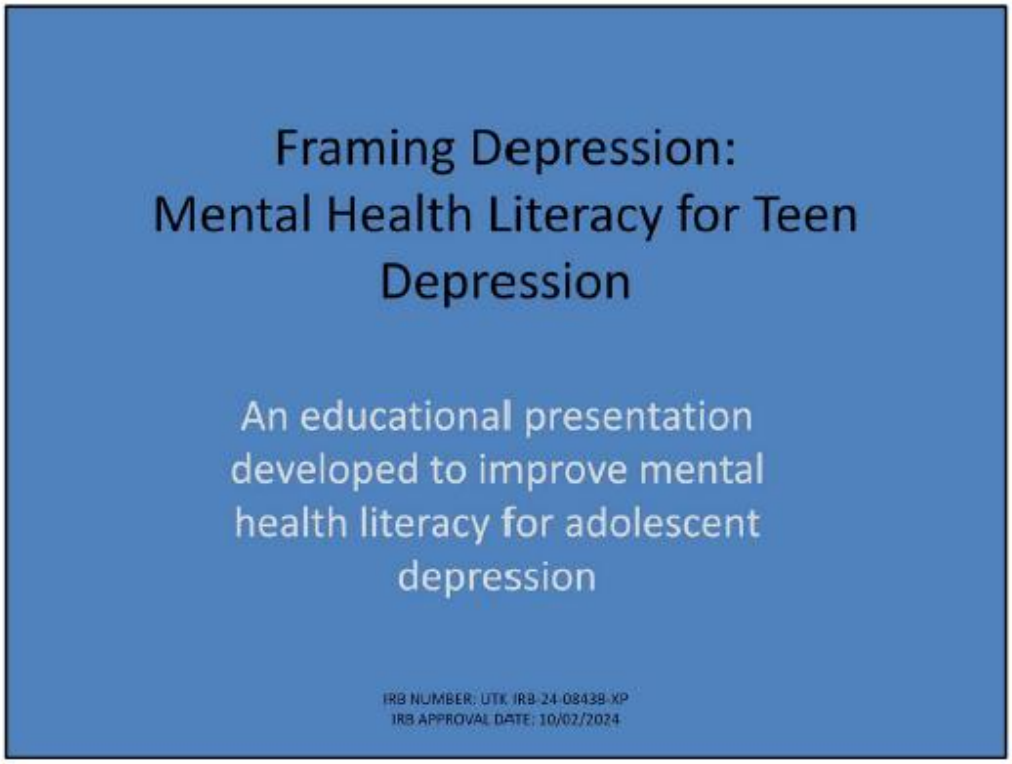
Spiker, D. A., & Hammer, J. H. (2018). Mental health literacy as theory: Current challenges and future directions. *Journal of Mental Health*, *28*(3), 238–242. https://doi.org/10.1080/09638237.2018.1437613

Wei, Y., Hayden, J. A., Kutcher, S., Zygmunt, A., & McGrath, P. (2013). The effectiveness of school mental health literacy programs to address knowledge, attitudes and help seeking among youth. *Early Intervention in Psychiatry*, *7*(2), 109–121. https://doi.org/10.1111/eip.12010

Wei, Y., McGrath, P. J., Hayden, J., & Kutcher, S. (2015). Mental health literacy measures evaluating knowledge, attitudes and help-seeking: A scoping review. *BMC Psychiatry*, *15*(291), 291–291. https://doi.org/10.1186/s12888-015-0681-9

Appendix

The Mental Health Literacy Education (MHLE) Presentation



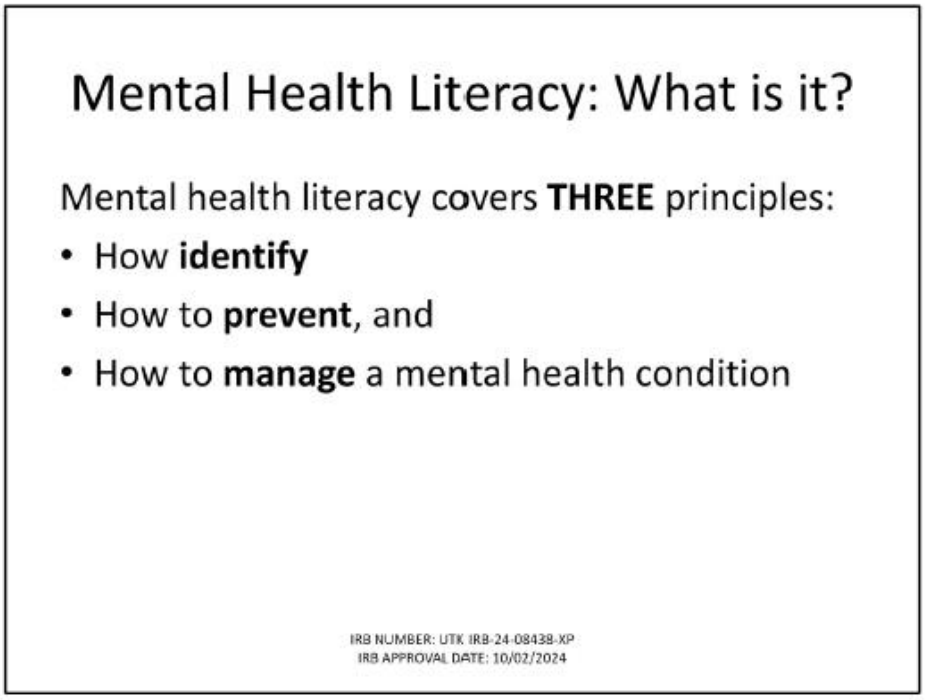
Mental Health Literacy: What is it?

- Mental health literacy is a special way to think about mental health conditions.
- This special way is called a framework because it "frames" the condition in a way that is easier to remember and understand.

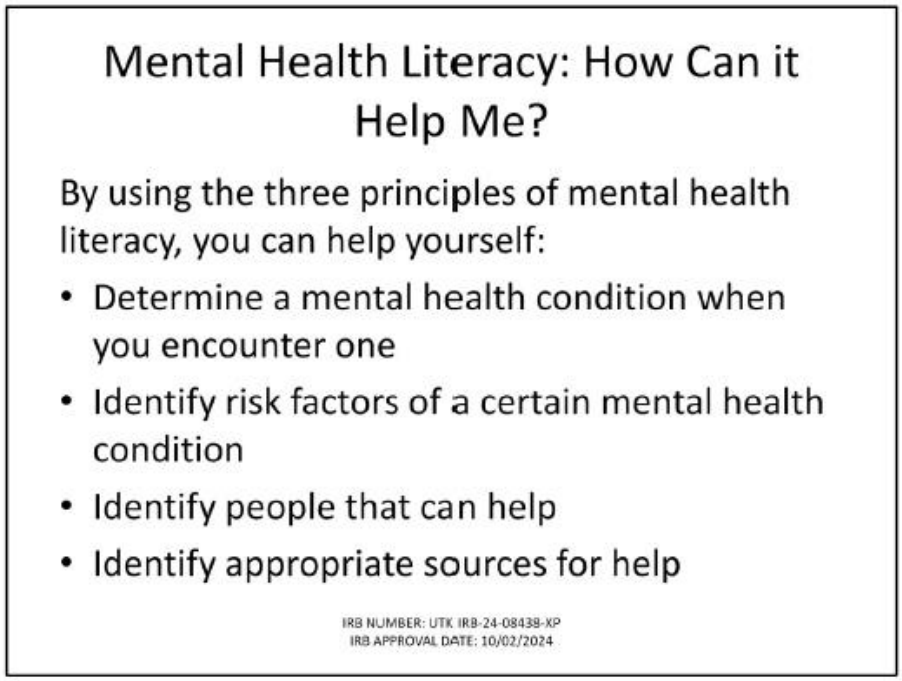


IRB NUMBER: UTK IRB-24-08438-XP
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MHL: Intro to MHL
ELT: Concrete: introduce the new experience, feeling, watching; Reflective: Create meaning



MHL: Emphasize "Identify, Prevent, and Manage"
ELT: Concrete, introduce the new experience, feeling, watching; Reflective: Create meaning, object recognition



MHL: Why MHL
ELT: Concrete, introduce the new experience, feeling, watching; Reflective: Create meaning, object recognition

Mental Health Literacy: Depression

This presentation will focus on depression to help you understand the key factors of mental health literacy and how to apply these concepts to a common mental health condition.





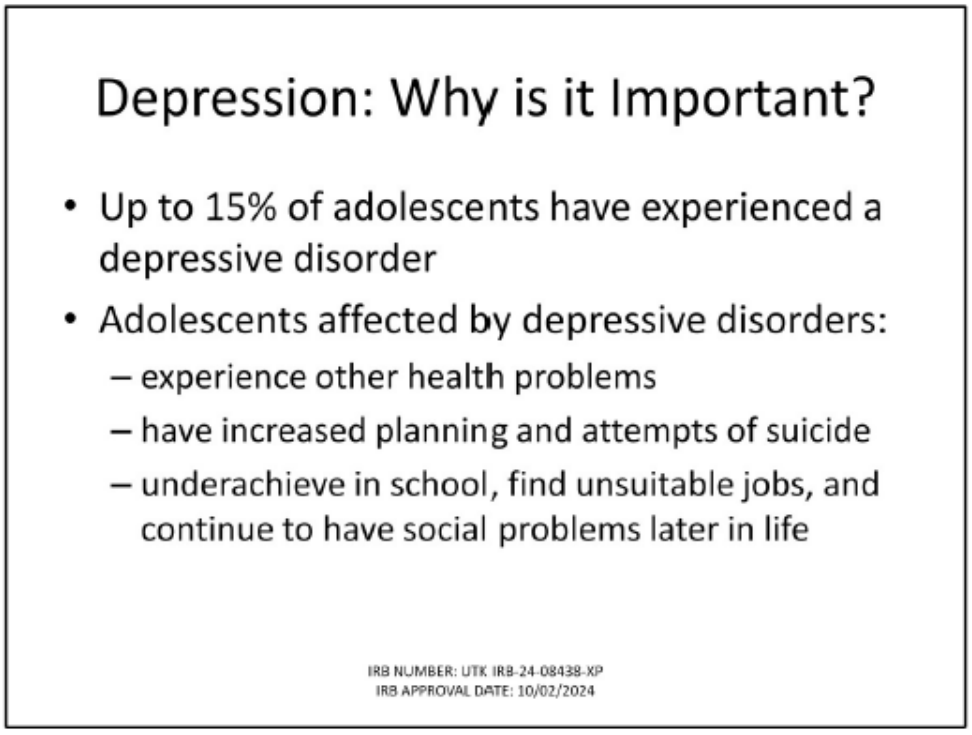
IRB APPROVAL DATE: 10/02/2024

MHL: What this presentation will do
ELT: Concrete, introduce the new experience, feeling, watching; Reflective: Create meaning, object recognition

Focus on Depression

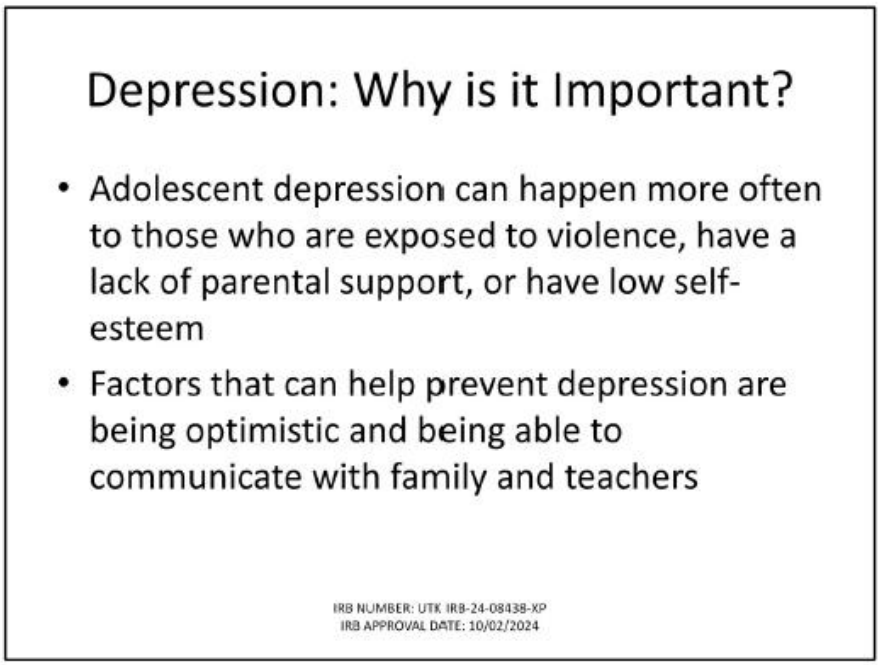


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MHL: Identify: stats and effects

ELT: Concrete: introduce the new experience, feeling, watching; Reflective: Create meaning, object recognition, link with emotion, explanation



MHL: Identify: stats and effects
ELT: Concrete: introduce the new experience, feeling, watching; Reflective: Create meaning, object recognition, link with emotion, explanation

Depression: Why is it Important?

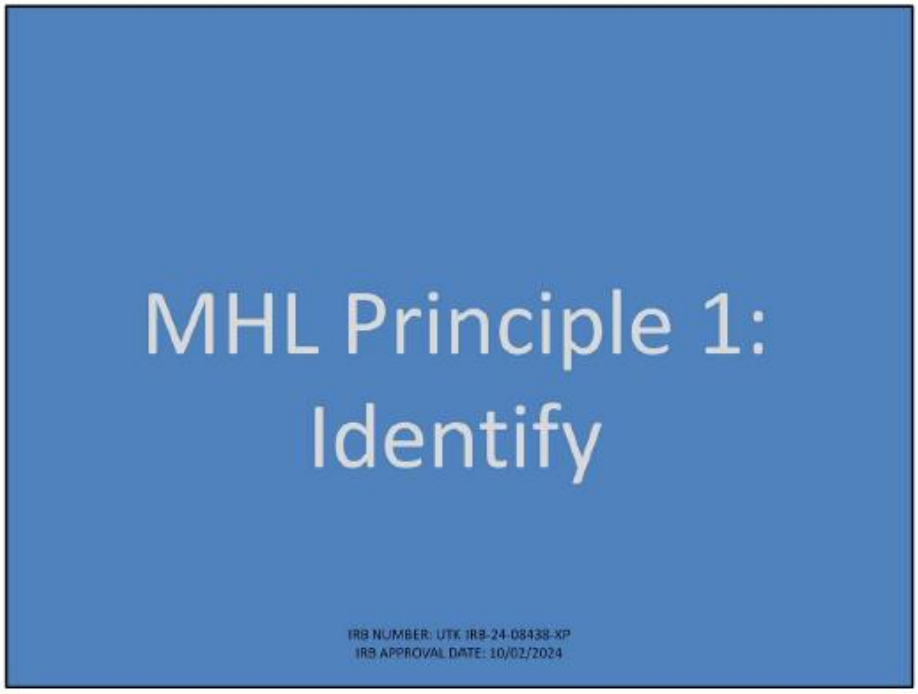
- *Therefore, understanding key aspects of depression can help you make smart decisions about how and when to seek help.*

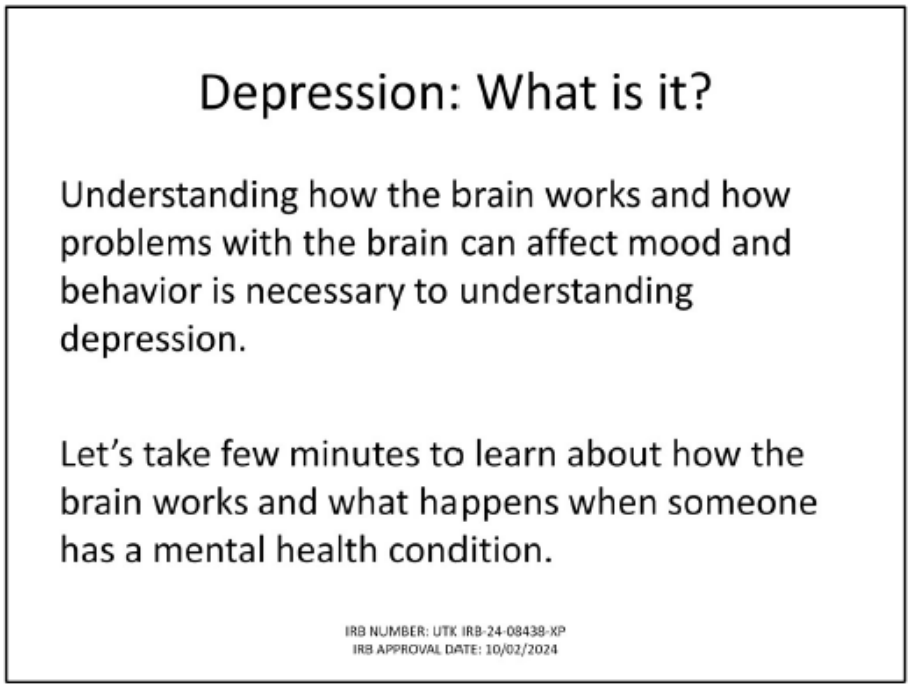


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MHL: Identify: stats and effects
ELT: Concrete: introduce the new experience, feeling, watching; Reflective: Create meaning, object recognition, link with emotion, explanation

Thought question: "How do you feel about these statistics? Do you think the statistics are correct? Are they higher or lower than what you would have guessed?"


MHL Principle 1:
Identify
IRB NUMBER: UTK IRB-24-08438-XP
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MHL: Identify: biology
ELT: Concrete: introduce the new experience, listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory



MHL: Identify: biology
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory

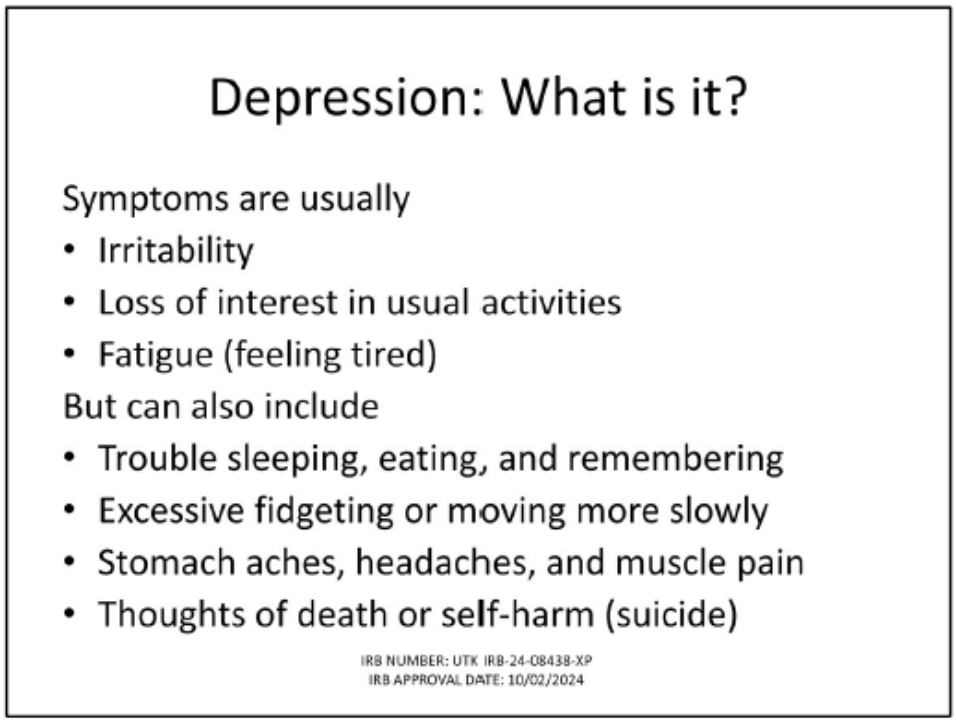
Thought questions: Is this new information? Do you recall learning about depression? Where have you learned this information?

Depression: What is it?

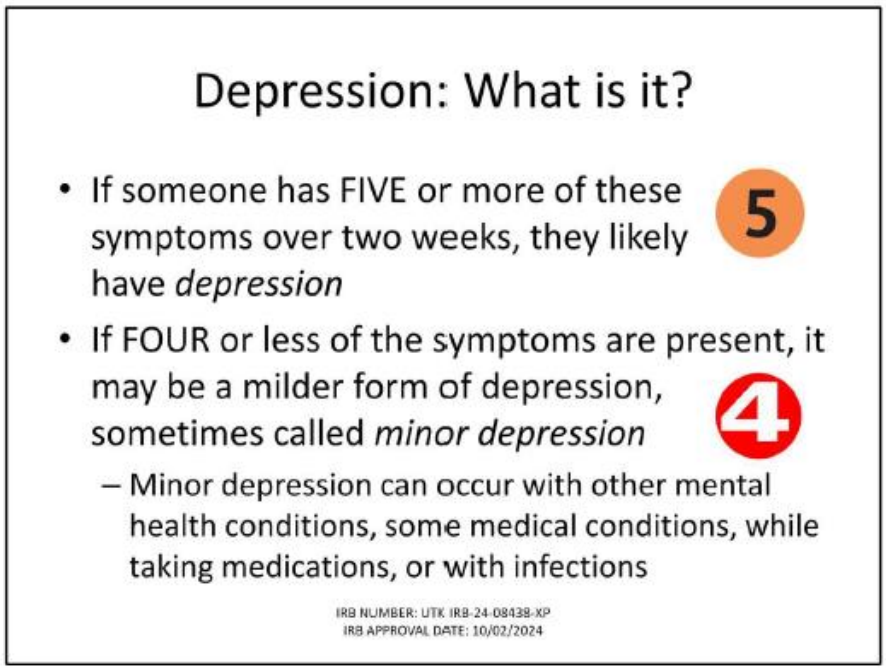
- It is a medical condition, sometimes called major depression
- It is a complex mood disorder that originates in the brain but affects the entire body
- The symptoms last more than two weeks and make it hard to do your normal routine



MHL: Identify: behavioral, psychological
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory



MHL: Identify: symptoms
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory



MHL: Identify: symptoms
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory

Depression: What is it?

TEEN symptoms of depression DIFFER from adult symptoms of depression. Teens can feel **angry, moody** and **extremely irritable**. Teens can also **isolate themselves** and have **sleep** and **appetite disturbances**





IRB APPROVAL DATE: 10/02/2024

MHL: Identify: symptoms in teens

ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory



MHL: Identify: biology, behaviors, symptoms; intro to management (seek help, treatments); intro to prevention (coping skills)
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory

Thought question: According to the video, what are some symptoms of teen depression? Do you recall some coping skills?

May repeat symptoms: Sadness, emptiness, hopelessness; lack of enjoyment; weight changes; sleep pattern changes; slow movements; tiredness; low self-worth or guilt; difficulty concentrating; thoughts of death; thoughts of self-harm or suicide

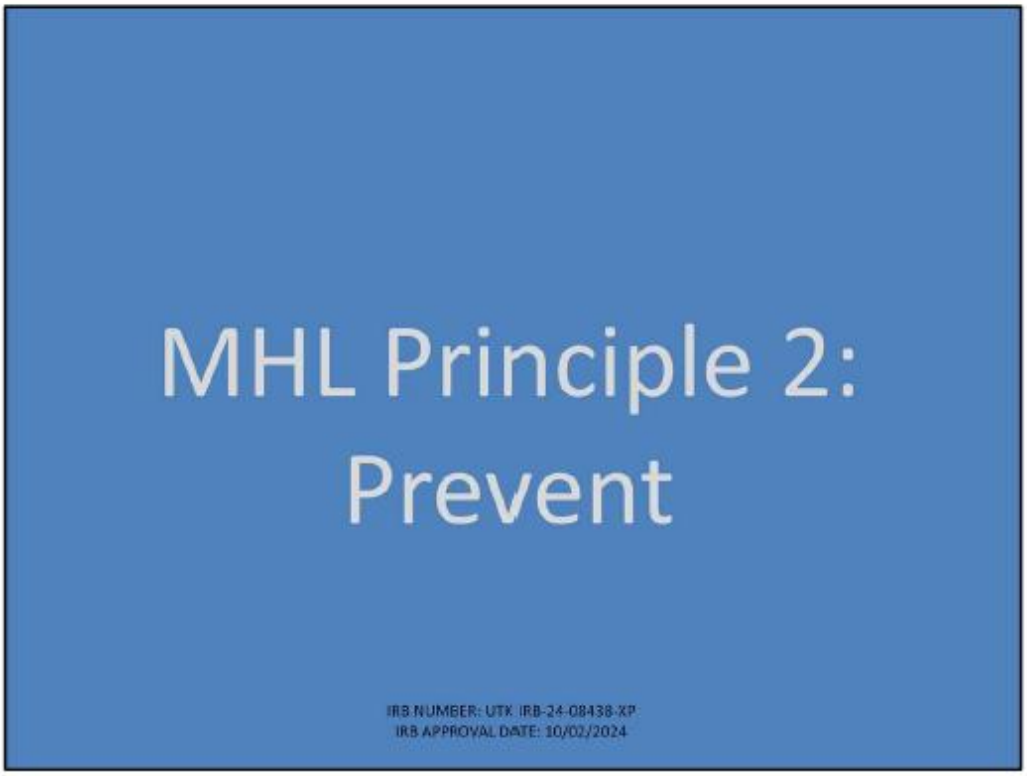
May repeat coping skills: Journaling, meditation, deep breathing, exercise, yoga, spending time in nature, doing things that make you laugh, spending time with supportive people, and relaxing activities



MHL: Identify: genetic component
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, object recognition, link with emotion, explanation, define problems, collect relevant information; Abstract: problem solve, make decisions, protocol, memory

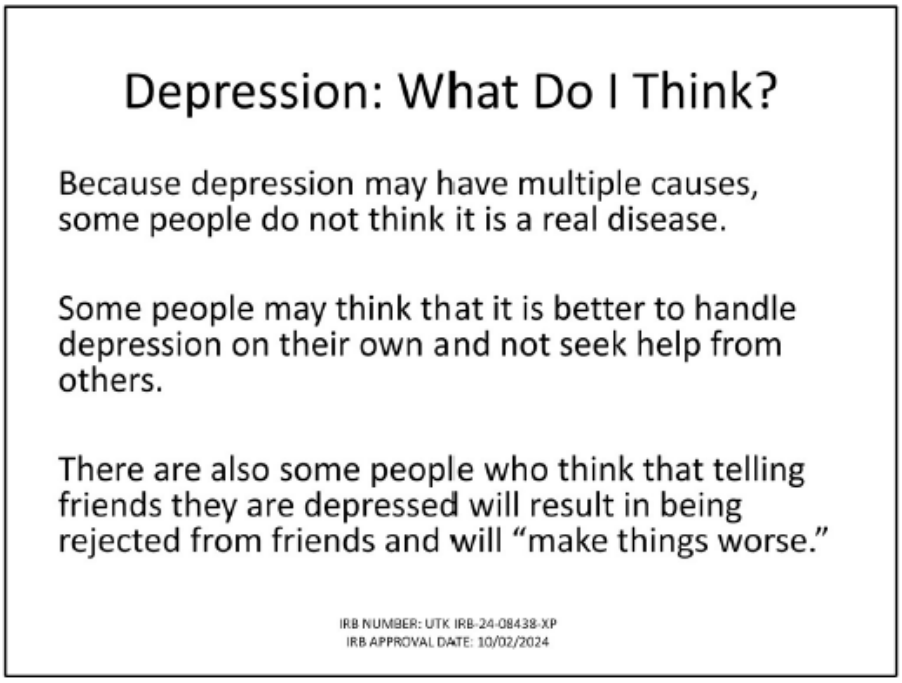
Thought question: According to the video, what are some factors that cause depression in children?

May repeat: Neurochemical imbalance, Genetic factors, An experience that initiates the mood change, Other factors


MHL Principle 2:
Prevent
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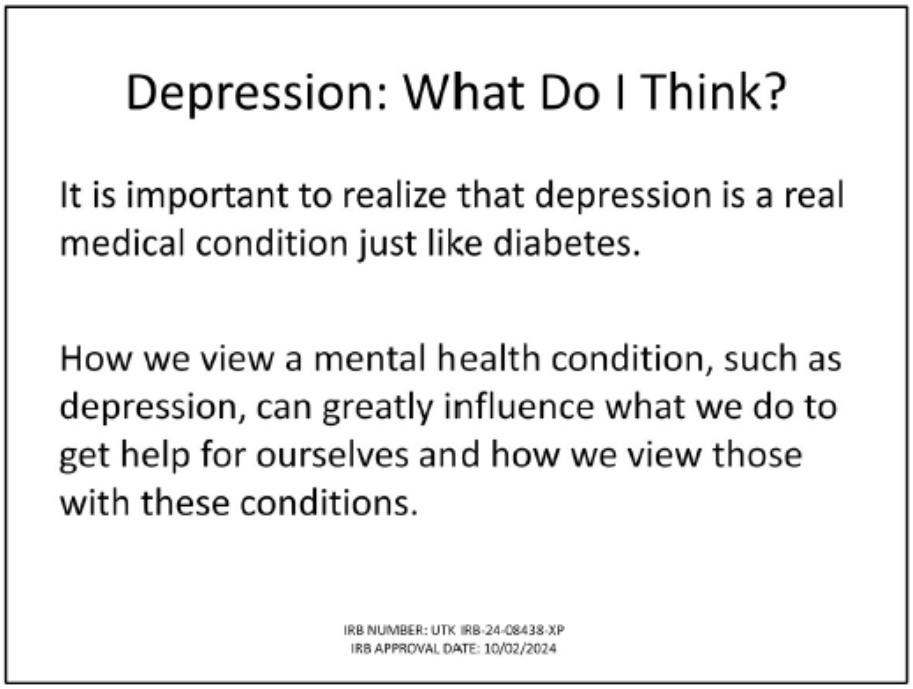


MHL: Prevention: causes
ELT: Concrete: introduce the new experience, listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts



MHL: Prevention: stigma
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts

Thought questions: Have you heard any of these reasons before?
Think about some reasons why someone would think depression is not real or that having depression would cause them to be rejected by friends or family.



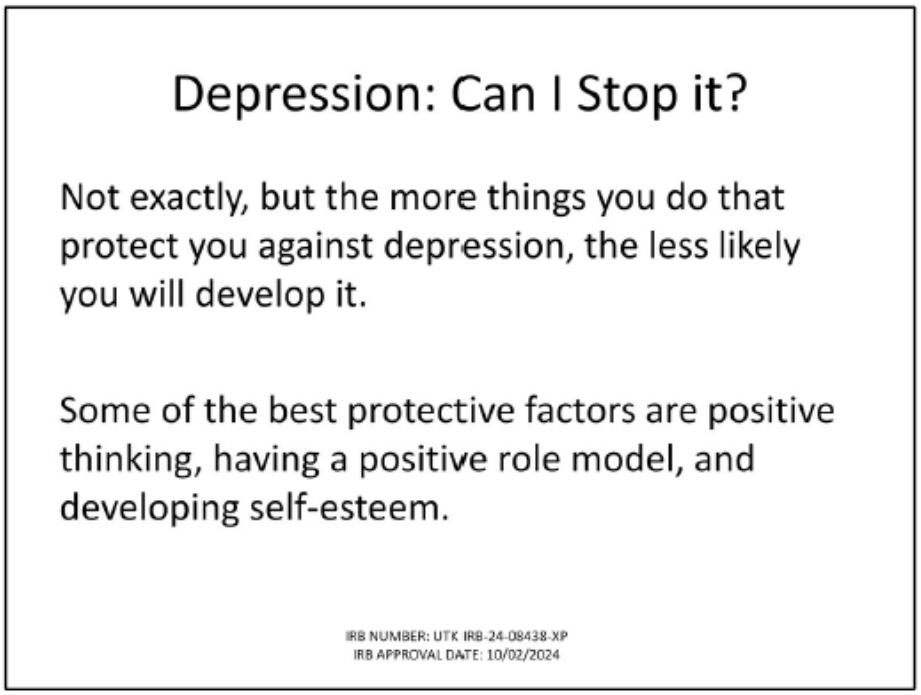
MHL: Prevention: stigma, behaviors
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts

Thought questions: How do you view depression? Would you help a friend in need?



MHL: Prevention: stigma, thoughts, behaviors
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts

Thought question: Think about a time you did not want to tell someone something because you felt they would judge you or make you feel bad in some way.
Do you recall a time you may have felt negatively about someone because of something they said about themselves? (something they told you)



MHL: Prevention: protective factors, behaviors
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts



MHL: Prevention: protective factors, behaviors
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts; Active Experimentation: transform experience into action, reflection to movement (writing), relatable, has value

ACTIVE EXPERIMENTATION: You may ask the students what they think are protective factors and to think about what protective factors they can identify in their lives. Ask them to think about if they think have more risk factors or protective factors. Use the worksheets and ask students to write down what they think are the protective factors in their lives.



MHL: Prevention: protective factors, behaviors, coping skills
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts

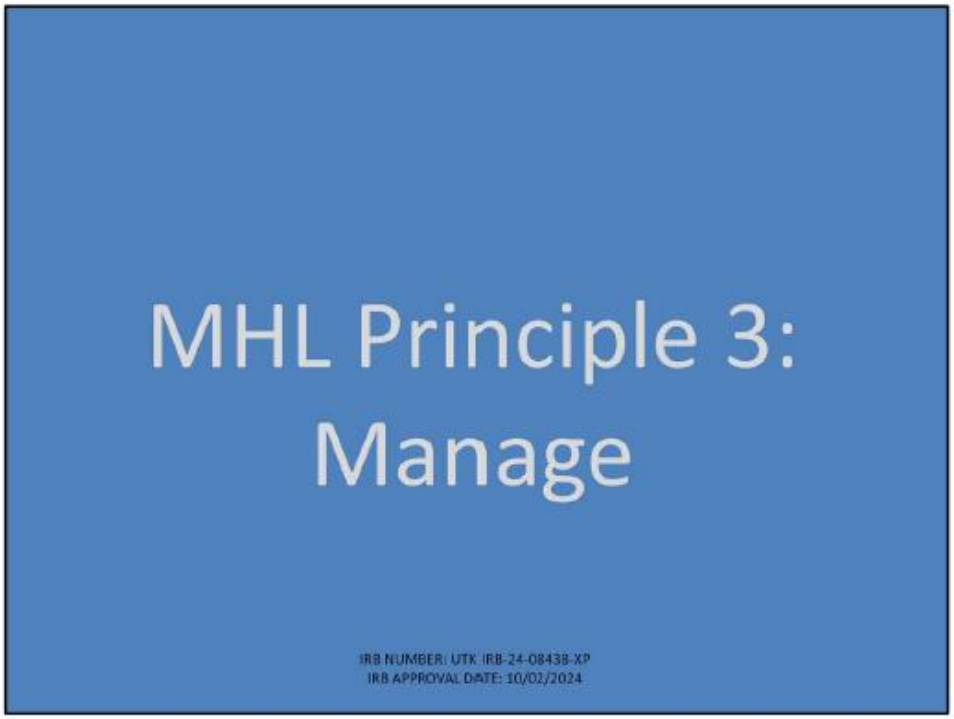
Thought question: Ask the students to think about a time they had to boost their confidence, perhaps to take a test. What strategies did they use? Did anyone learn a new strategy? Ask if anyone wishes to share any of these strategies with the group. Take no more than 3 answers.

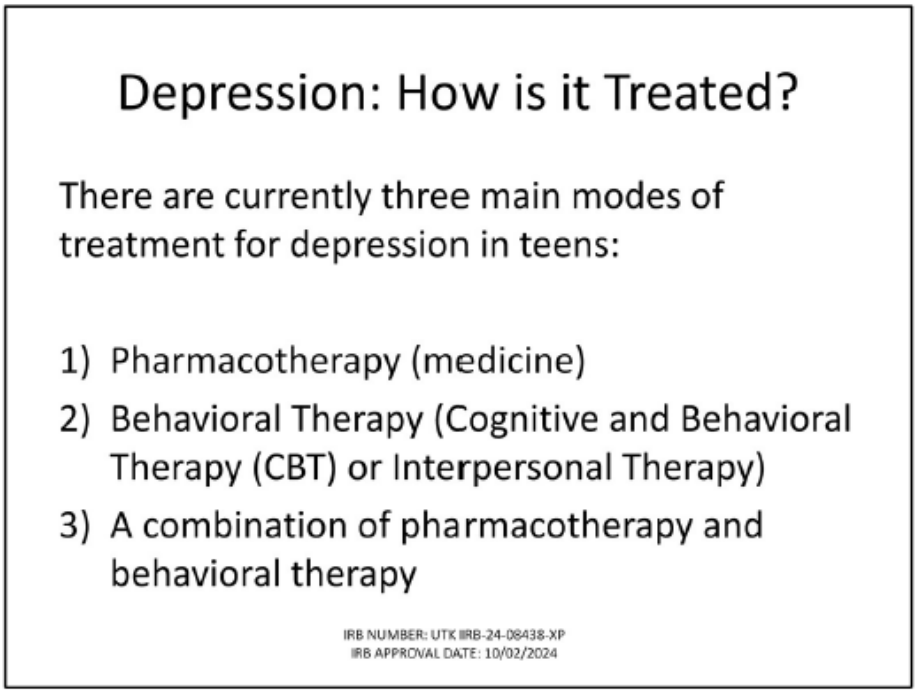


MHL: Prevention: protective factors, role models, positive influence
ELT: Concrete: listen, feeling, watching; Reflective: identify relationships, create meaning, see from a different perspective, use various tools to understand topic (senses, learning techniques); Abstract: problem solve, abstract problems, symbolically complex learning environment, decision making, recognize and replace old facts

Thought question: Ask students to think about who they look up to and if that person is a positive influence or a negative influence. Are they a positive role model? Why or why not?

Ask students to think about the all the unique things they do. Do any of these activities help build confidence? Do they think these activities can help build their self-esteem to ward off depression?


MHL Principle 3:
Manage
IRB NUMBER: UTK IRB-24-08438-XP
IRB APPROVAL DATE: 10/02/2024



MHL: Management: therapies
ELT: Concrete: introduce the new experience, listen, feeling, generate insights, reflect on experiences; Reflective: define problem, gather relevant information, know how a problems gets solved; Abstract: learn jargon and protocols, memory and recall

Depression: How is it Treated?

Pharmacotherapy (medicine):

Usually using medicine called selective serotonin uptake inhibitors (SSRI). An example is fluoxetine, also known as Prozac.



IRB NUMBER: UTK IRB-24-08438-XP
IRB APPROVAL DATE: 10/02/2024

MHL: Management: therapies
ELT: Concrete: listen, feeling, generate insights, reflect on experiences; Reflective: define problem, gather relevant information, know how a problems gets solved; Abstract: learn jargon and protocols, memory and recall

Depression: How is it Treated?

Cognitive and Behavioral Therapy (CBT)

CBT is a type of psychotherapy, or talk therapy. This therapy seeks to reorganize the patient's unhealthy and hurtful patterns of thoughts and behaviors into helpful patterns that allow the patient to cope with various situations.



MHL: Management: therapies
ELT: Concrete: listen, feeling, generate insights, reflect on experiences; Reflective: define problem, gather relevant information, know how a problems gets solved; Abstract: learn jargon and protocols, memory and recall

Thought question: What are some behaviors that may be unhelpful and what behaviors could replace them?

Read example: The student says that they feel angry or sad. The CBT therapist will use tools to help identify these emotions and pinpoint what they really feel, such as "I feel sad" means they felt lonely and isolated, and when that happens they don't eat or leave their room. The therapist will help the student replace the harmful behaviors with helpful ones, such as walk the dog, or help around the house, or call a friend.

Depression: How is it Treated?

Interpersonal Therapy

This form of psychotherapy, or talk therapy, focuses on the patient's interpersonal skills. Interpersonal skills are the tools we use to get along with and communicate with others. This therapy helps to develop better communication skills to improve challenging relationships.



MHL: Management: therapies
ELT: Concrete: listen, feeling, generate insights, reflect on experiences; Reflective: define problem, gather relevant information, know how a problems gets solved; Abstract: learn jargon and protocols, memory and recall

Depression: How to Find Information

There is a flyer available that you can use to help you remember key concepts of depression. This flyer also lists some resources available to help you.



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MHL: Management: investigate, research, analyze
ELT: Concrete: listen, feeling, generate insights, reflect on experiences; Reflective: define problem, gather relevant information, know how a problems gets solved; Abstract: learn jargon and protocols, memory and recall

Direct students to look in their packet for this flyer. It may be helpful to project the brochure or important info onto the screen or hold it in your hand. Briefly discuss flyer by saying:

"This is a good summary of what we learned. Symptoms on the left and how to find help on the right. The bottom has a number, 988, wich is the suicide and crisis lifeline. The chat is 988lifeline.org"

This is a national brochure located here:

https://www.nimh.nih.gov/sites/default/files/documents/health/publications/teen-depression/Teen_Depression_More_Than_Just_Moodiness_2022.pdf



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Direct students to find this page in their handouts. An example of the information and the names of these websites should be verbalized such as "These are legitimate government websites that end in "dot gov" where you can get mental health information. NAMI is the website where you can get info about depression. You can google N-A-M-I, the national alliance on mental illness."



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Depression: How to Get Help

If you are unaware of an adult you can trust, another choice may be to seek out a responsible friend, or a friend who has parents that you can trust to help you in case you needed it.





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Activity: Direct students to the worksheet and tell them to write down at least one person that they trust to help them when they need it. Ask a couple of students to share their answer such as "my parents" or "my aunt" or "my friend's parents."



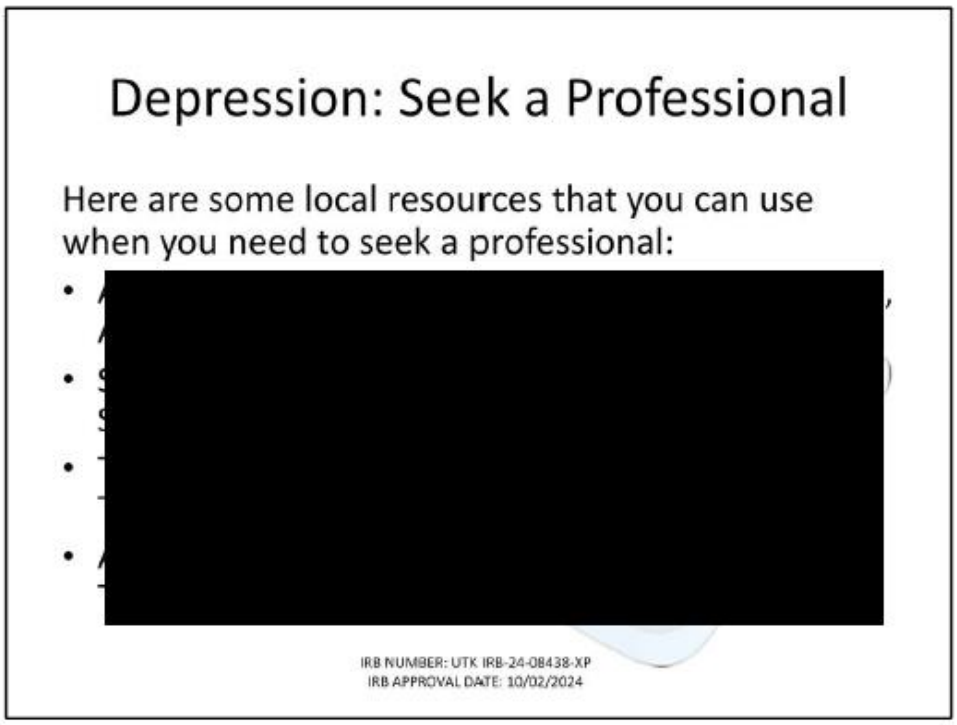
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Direct the students to the "do I need help?" handout which summarizes almost all they have learned.

Available here:
https://www.nimh.nih.gov/sites/default/files/health/publications/my-mental-health-do-i-need-help/my-mental-health-do-i-need-help.pdf



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Direct students to the handouts where these are listed. Read through a couple of locations.

Note: Addresses blocked out to keep student locations confidential



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Read a couple of location then direct the students to the lifesavers handout.

"Let's now look at the Lifesavers Guide for when you may have to talk to someone suffering from depression. These are tips on what to do such as talk in a private place and directly ask about suicide. At the bottom there are helpful resources such as find a mental health provider, text the crisis line, and to always call 911 for emergencies. Remember, someone who says that they are going to kill themselves is an emergency."

Find a Mental Health Provider
findtreatment.samhsa.gov
mentalhealthamerica.net/finding-help

National Suicide Prevention Lifeline
1-800-273-TALK (8255)
Veterans: Press 1

Text TALK to 741741

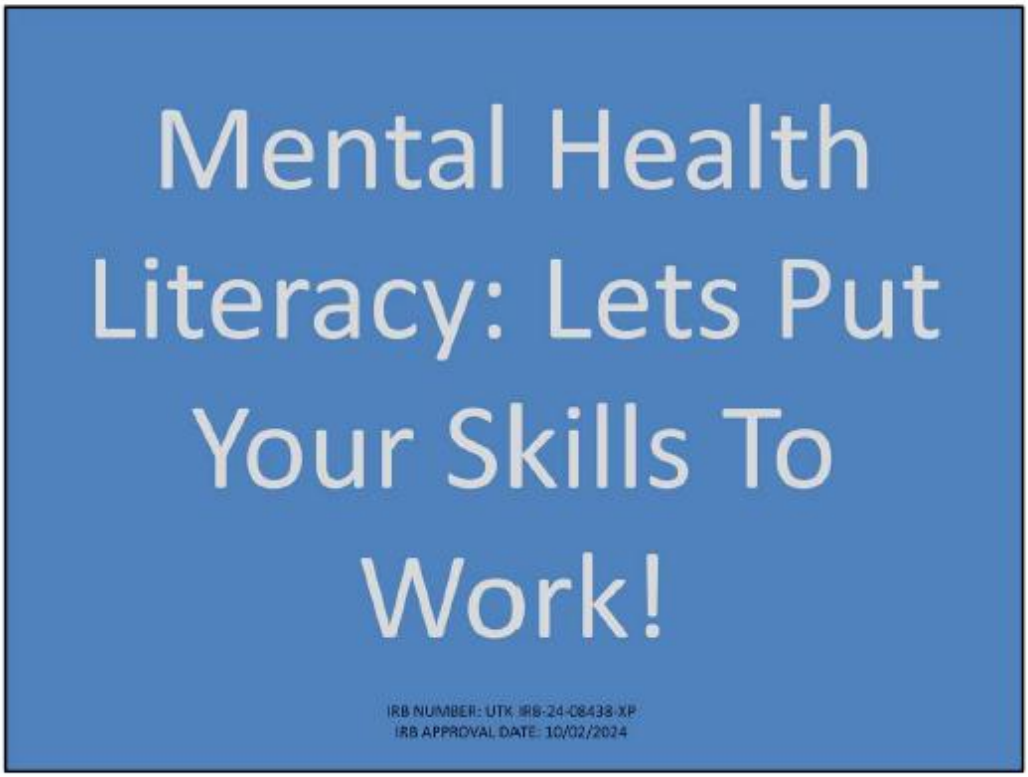
Text with a trained counselor from the Crisis Text Line for free, 24/7

Call 911 for Emergencies

Call or text the 988 Suicide & Crisis Lifeline at 988
or chat at
988lifeline.org

Available here
https://familydoctor.org/wp-content/uploads/2016/11/13936_Lifesavers_Guide.pdf)

Note: Phone numbers blocked out to keep student locations confidential


Mental Health Literacy: Lets Put Your Skills To Work!
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Putting Your Skills to Work

On the next few slides, there will be a short story about a character and their behavior.

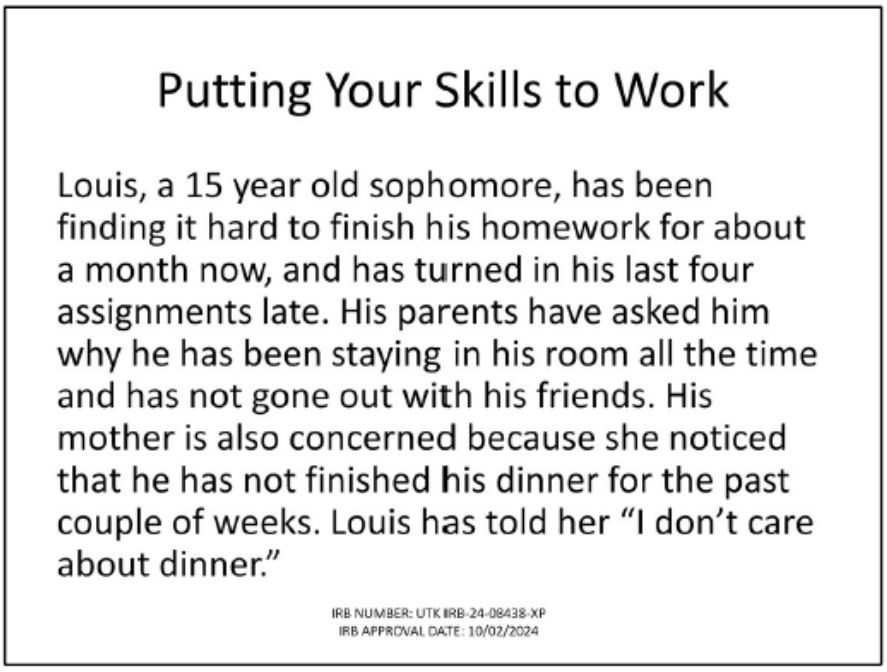
After you read the story, you will be asked questions about why you think the character is acting that way and what options the character has.



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IRB APPROVAL DATE: 10/02/2024

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ELT: Active Experimentation: Listen and read carefully. Think about the character's experience. Use knowledge gained from memory and apply rules to figure out the issue. Transform the knowledge into an action plan for the character. Apply the knowledge to create a solution.

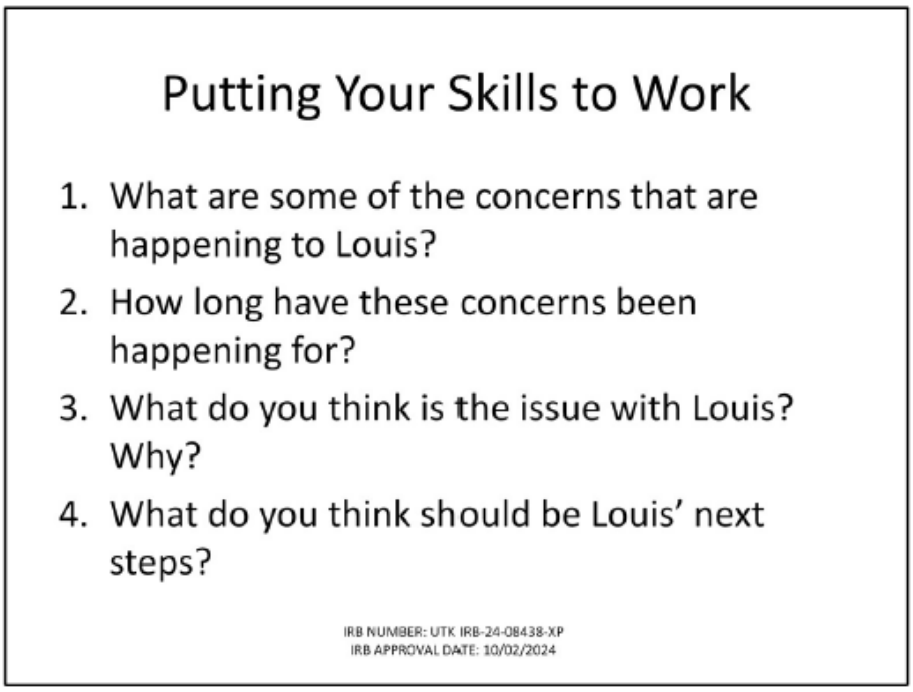
This is the culmination of the ELT cycle where the skills are to be put together to solve a problem reflecting a real-world simulation. There are two vignettes: one for minor depression and one for major depression. Let's see who can solve the vignettes



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Read vignette out loud. Give students a few minutes to think. Direct students to jot notes on the backs of their worksheets. Questions and answers on next slide

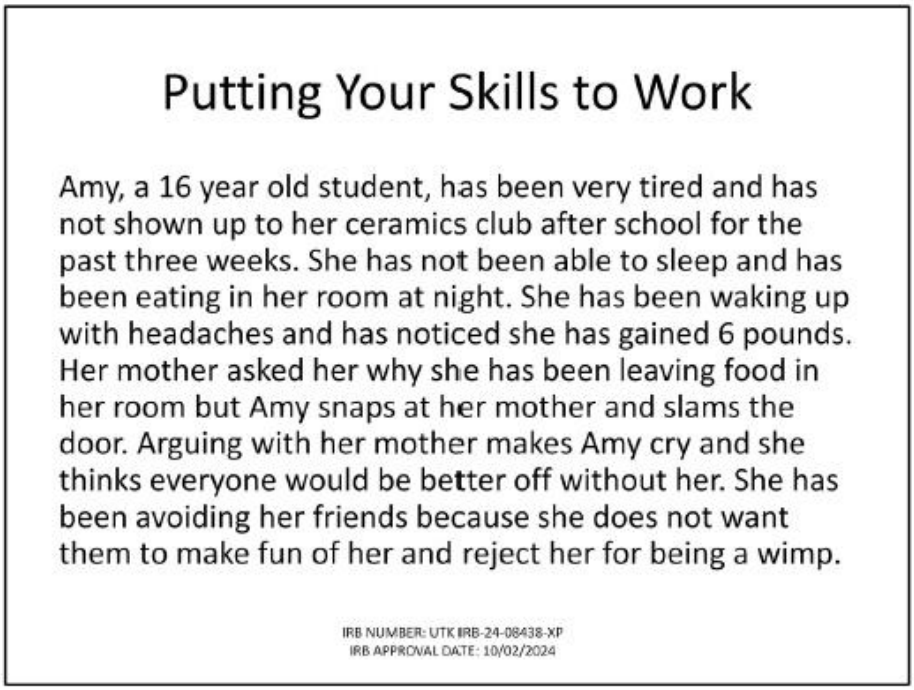
Answer: Minor depression
Time: Over one month
Symptoms: Has three symptoms
Hard to finish his homework/ late homework
staying in room/ avoiding friends
Not eating dinner/ not caring about eating



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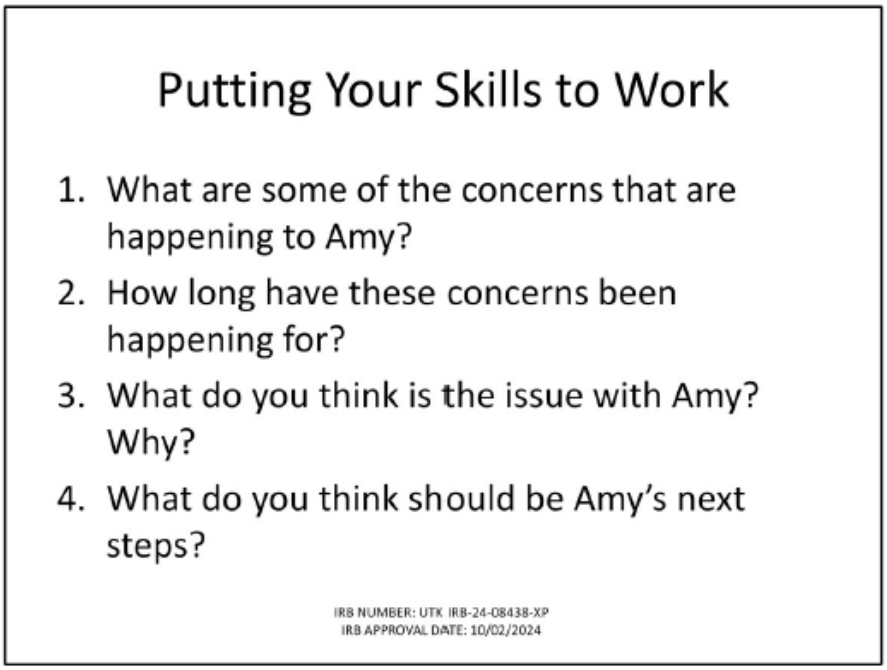
Read each question and allow answers from at least 3 students. Go back to the vignette if necessary. Give hints if no response. If no response, read next question. Re-read questions with no response and try again. Do not give answers until all questions have been attempted.

1. He can't do his HW and he turns them in late; Staying in room and avoiding his friends; He doesn't want to eat or doesn't care about eating
2. Over one month
3. Minor depression because 4 or less symptoms over more than two weeks
4. Tell someone he trusts that he has been feeling this way or tell a professional. Find ways to improve coping skills. Have a list of local resources and emergency numbers for mental health. May need treatment so must stick to the treatment plan.



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Read vignette out loud. Give students a few minutes to think. Direct students to jot notes on the backs of their worksheets. Questions and answers on next slide



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Read each question and allow answers from at least 3 students. Go back to the vignette if necessary. Give hints if no response. If no response, read next question. Re-read questions with no response and try again. Do not give answers until all questions have been attempted.

1: Very tired/ not sleeping well
Avoiding activity (Not shown up to her ceramics club after school/ Avoiding friends)
Somatic symptoms (Waking up with headaches)
Weight gain (gained 6 pounds)
Irritability (Amy snaps at her mother and slams the door/ Amy cries)
Thinks everyone would be better off without her

Added issue of stigma, where she is afraid of rejection from friends

2: Three weeks
3: Major depression or depression because she has at least five symptoms over 2 weeks
4: Tell someone she trusts that she has been feeling this way or tell a professional. Find ways to improve coping skills. Have a list of local resources and emergency numbers for mental health. May need treatment so must stick to the treatment plan.



Be prepared for no students to ask questions. May go over statistics, the symptoms of depression, maybe find a hopeful story online or give a short quiz, depending on the teacher's preference. For this research, I will provide questions and answers to prevent silence

References

American College of Obstetricians and gynecologists (ACOG). (2020). *Mental health disorders in adolescents: Committee Opinion, Number 705.* https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2017/07/mental-health-disorders-in-adolescents

Centers for disease control and Prevention (CDC). (2023, March 8). *Data and Statistics on Children's Mental Health.* U.S. Department of Health & Human Services. https://www.cdc.gov/childrensmentalhealth/data.html#ref

Cummings, J. R. (2014). Contextual socioeconomic status and mental health counseling use among US adolescents with depression. *Journal of Youth and Adolescence, 43*(7). https://doi.org/10.1007/s10964-013-0021-7

Georgakakou-Koutsonikou, N., & Williams, J. M. (2017). Children and young people's conceptualizations of depression: A systematic review and narrative meta-synthesis. *Child: Care, Health & Development, 43*(2), 161-181. https://doi.org/10.1111/cch.12439

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). "Mental health literacy": A survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *Medical Journal of Australia, 166*(4), 182–186. https://doi.org/10.5694/j.1326-5377.1997.tb140071.x

Kassis, W., Artz, S., & White, J. (2017). Understanding depression in adolescents: A dynamic psychosocial web of risk and protective factors. *Child & Youth Care Forum, 46*(5), 721-743. https://doi.org/10.1007/s10566-017-9404-3

Maughan, B., Collishaw, S., & Stringaris, A. (2013). Depression in childhood and adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 22*(1), 35-40. Retrieved from http://www.cacap-acpea.org/en/cacap/journal_p828.html

National Alliance on Mental Illness (NAMI). (2018). *Psychotherapy.* Retrieved from https://www.nami.org/learn-more/treatment/psychotherapy

Ogorchukwu, J. M., Sekaran, V. C., Nair, S., & Ashok, L. (2016). Mental health literacy among late adolescents in South India: What they know and what attitudes drive them. *Indian Journal of Psychological Medicine, 38*(3), 234-241. https://doi.org/10.4103/0253-7176.183092

IRB NUMBER: UTK IRB-24-08438-XP
IRB APPROVAL DATE: 10/02/2024

References - Video

Children's Hospital Colorado. (2017, May 24). Break the stigma around children's mental health [Video]. YouTube. https://youtu.be/49mfPFTZsHs

Elsevier Health. (2020, May 11). Mental health teen depression [Video]. YouTube. https://www.youtube.com/watch?v=MRShLYm_kOE

Howcast. (2012, May 10). What causes depression? - Child psychology [Video]. YouTube. https://youtu.be/Ue-UU4O-7BY

MLHealthUnit. (2012, November 16). Risk and protective factors for mental illness [Video]. YouTube. https://youtu.be/ZNfU3rCSXHk

myHealth for Teens & Young Adults. (2017, March 8). What teens think about: Role models [Video]. YouTube. https://youtu.be/aVQEhRO-RCY

Nami Central Texas. (2018, October 17). Biology of mental health conditions [Video]. YouTube. https://www.youtube.com/watch?v=C7P2wWqQE3U&t=310s

TED-Ed. (2015, October 6). 3 tips to boost your confidence - TED-Ed [Video]. YouTube. https://youtu.be/I_NYrWqUR40

IRB NUMBER: UTK IRB-24-08438-XP
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- Photos provided by Pixabay, retrieved from https://pixabay.com/
- Photo of Prozac by Michael E. Schmidt, retrieved from https://drakalogia.wikispaces.com/2013+PERIOD+8+PROZAC

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Thank You!
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VITA

Jane D Martineau is a practicing Family Nurse Practitioner in Arizona for almost five years. Jane has an Associate in Science in mathematics and a Bachelor of Science in Psychology, and has been interested in psychology and research for many years. After becoming a nurse, Jane decided to combine her passions and pursue research in nursing. She completed her MSN with a capstone project on mental health literacy in adolescents. Jane continued on to complete her PhD in nursing with a concentration in adolescent mental health.

Respice, Adspice, Prospice