Araştırma makalesi

The Effect of Mental Health Literacy Web-Based Education Initiative on Students' Knowledge Level, Help Seeking, and Stigmatizing Attitudes: A Randomize Controlled Study Protocol

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Abstract

Aim: To establish a randomized controlled trial protocol to evaluate the effectiveness of a web-based mental health literacy training intervention on knowledge, help-seeking behavior, and stigma attitudes in adolescent students.

Design: It is a randomized controlled experimental study with pre-test, post-test, follow-up, control group.

Methods: The dependent variables are adolescent knowledge level, attitudes towards seeking psychological help, and mean scores of self-stigma towards seeking help, and the independent variable is web-based education. Participants will be randomly assigned to the control or intervention group. Outcome measures include adolescent knowledge, attitudes, and behavior. Students will be retested after four weeks and three months. The educational content of the six modules will include short animated lesson videos and audio presentations. Opinions of field experts will be obtained for the developed educational content. 100 students will be recruited from a middle and high school. The experimental group will receive a web-based MHL educational intervention, while the control group will not receive any intervention. Data for the study will be collected using the Demographic Data Collection Form, Child and Adolescent Mental Health Literacy Scale (CAMHLS), Attitudes Towards Seeking Psychological Help Scale-Short Form (SPHS-S) and Self-Stigma About Seeking/Getting Psychological Help Scale (SSOSH). Data will be collected at pre-test (t0), 4-week post-test (t2), and 8-week post-test (t3) time points. Repeated measures two-way analysis of variance will be used in data analyses.

Conclusion: The unique value of this project will be that the concept of mental health literacy has never been examined before in our society and school nursing that a tested teaching material will be prepared and presented to all adolescents, and therefore to families and society, to improve literacy skills.

Keywords: Web Based Education, Mental Health Literacy, Adolescent, School Nurse, Study Protocol

Özet

Amaç: Ergen öğrencilerde web tabanlı ruh sağlığı okuryazarlığı eğitim girişiminin bilgi düzeyi, yardım arama davranışı ve damgalama tutumu üzerindeki etkinliğini değerlendirecek randomize kontrollü bir deneme protokolü oluşturmak.

Tasarım: Ön-test, son-test, izlemsel, kontrol gruplu randomize kontrollü deneysel olarak tasarlanan bir çalışmadır.

Yöntem: Bağımlı değişkenler ergen bilgi düzeyi, psikolojik yardım aramaya yönelik tutumlar ve yardım aramada kendini damgalama puan ortalamaları, bağımsız değişken web tabanlı eğitimdir. Katılımcılar randomize olarak kontrol veya müdahale grubuna atanacaktır. Sonuç ölçümleri ergen bilgi, tutum ve davranışını içerir. Öğrenciler dört hafta ve üç ay sonra tekrar test edilecektir. Altı modülün eğitim içeriği kısa animasyonlu ders videoları ve sesli sunumları içerecektir. Geliştirilen eğitim içeriği için alan uzmanlarından görüş alınacaktır. Katılacak 100 öğrenci bir ortaokul ve liseden alınacaktır. Deney grubu web tabanlı RSO eğitim müdahalesi alırken, kontrol grubu herhangi bir müdahale almayacaktır. Çalışmanın verileri Demografik Veri Toplama Formu, Çocuk ve Adölesan Ruh Sağlığı Okuryazarlığı Ölçeği (ÇARSOÖ), Psikolojik Yardım Aramaya Yönelik Tutum Ölçeği-Kısa Form (PYTÖ-K) ve Psikolojik Yardım Arama/Alma Hakkında Kendini Damgalama Ölçeği (PYAKDÖ) kullanılarak toplanacaktır. Veriler ön test (t0), 4 haftalık son test (t2) ve 8 haftalık son test (t3) zaman noktalarında toplanacaktır. Veri analizlerinde tekrarlı ölçümler iki yönlü varyans analizi kullanılacaktır.

Sonuç: Bu projenin özgün değeri, ruh sağlığı okuryazarlığı kavramının toplumumuzda daha önce hiç incelenmemiş olması ve tüm ergenlere, dolayısıyla ailelere ve okul hemşirelerinin topluma, okuryazarlık becerilerini geliştirecek denenmiş bir öğretim materyali hazırlanıp sunulması olacaktır.

Anahtar kelimeler: Web Tabanlı Eğitim, Ruh Sağlığı Okuryazarlığı, Adölesan, Okul Hemşiresi, Çalışma Protokolü

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1. Introduction

Mental illness affects one in five people and represents a high social and economic burden (Kessler et al., 2007; Gore et al., 2011; Ojio et al., 2021). Adolescents in particular are more affected by this situation (Kessler et al., 2007). Today, unresolved issues related to mental health needs, particularly among adolescents, pose an increasing threat worldwide worldwide (Bale et al., 2018). However, young people refuse to seek help and are particularly disadvantaged when seeking professional services (Rickwood et al., 2007; Miles et al., 2020). In particular, the resistance and ignorance of other people in the family and youth environment when looking for help and their ignorance about the symptoms contribute to this (Rickwood et al., 2007; Vogel et al., 2009). Untreated mental problems are outputs of significant future dangers (Munawar et al., 2022). This leads to societal stigma, not only at the individual level, but also in relation to care, treatment and seeking help (Henderson et al., 2014).

World Health Organization (WHO) defined mental health literacy (MHL) as a component of health literacyI states that health literacy plays an important role in improving the health of individuals and communities (Kutcher et al., 2016; WHO, 2020). Globally, 25% of children and adolescents have diagnosable mental health problems. 10% of these problems meet the criteria for mental disorders (Wei et al., 2013). According to the Centers for Disease Control and Prevention (CDC), 13-20% of school-age children living in the United States have mental health problems. Again, the most important problem faced by people with this high prevalence is discrimination and stigma (CDC Report, 2013). This is followed by loss of self-esteem, decreased use of mental health services, and social isolation. Mental health has become an important public health issue among adolescents (Haugen et al., 2017). The American Academy of Pediatrics (AAP) estimates that 10% to 40% of high school students have access to mental health services. The AAP suggests that the barriers to treatment here are the stigmatizing attitudes of students, families, and society toward mental health problems, families' lack of knowledge about the symptoms of mental illness, and families' lack of knowledge about the institutions they seek help from. In addition, these services are not covered by insurance and families must travel long distances to receive services and wait long times for appointments (AAP, 2017).

Improving MHL in Adolescents through Health Education in Schools The prevention of mental disorders is the basis for mental health promotion and the prevention of stigma (Kutcher et al., 2016; Auerbach et al., 2016; Bale et al., 2018). The school years are a peak time for some mental health disorders such as anxiety, mood swings, and substance abuse (Kieling et al., 2011; Gore et al., 2011; Bruffaerts et al., 2018). Epidemiological studies show a high prevalence of these diseases in schoolchildren (Pedrelli, 2015; Auerbach et al., 2019). This high prevalence is associated with morbidity stress related to future morbidity and associated life risks and seriously impacts academic performance (Bruffaerts et al., 2018; Auerbach et al., 2019).

Many studies have shown that MHL education improves knowledge and help-seeking behavior (Mcluckie et al., 2014; Milin et al., 2016; Ojio et al., 2021; Skre et al., 2013). When the impact of education was analyzed, some students were aware of their condition and education encouraged them

to seek help. Some students noticed these symptoms in their peers (Reavley et al., 2011; Milin et al., 2016; Anjo, 2019). The systematic review by Gulliver et al. (2010) examined barriers to and advocates for using mental health services. As a result, perceived stigma and shame were the top barriers to identifying symptoms of mental illness, individual confidence, and help-seeking behavior (Gulliver et al., 2010).

Leighton et al. (2010), 34,1% of young people stated that they had mental problems. Gender had a significant impact on experience, with women reporting twice as many experiences as men. MHL has the potential to enhance emotional skills. Early MHL education has been reported to be an important factor in improving mental health and preventing suicide risk (Leighton, 2010). In a descriptive study, Lam (2014) reported that 16,4% of students felt good about their MLH level and help-seeking attitude. In the same study, 23,4% were knowledge-aware and 14,8% reported having moderate depression (Lam, 2014). There are ups and downs in children and adolescents, e.g. unstable communication with peers and family, reduced academic performance, increased stress and reduced social support contribute to the development of mental disorders (Auerbach et al., 2019). Despite the magnitude of the problems it causes, studies show that 70-80% of children, adolescents and adults worldwide are not receiving the support they need (Auerbach et al., 2019; Wei et al., 2013).

Schools can be a turning point, especially for abused and disadvantaged children who lack optimal housing and environmental conditions (Bjornsen et al. 2017). School nurses have important knowledge and skill potential in assessing and diagnosing mental health symptoms that may develop in adolescents (Spiker & Hammer, 2019). MHL level is very important in early diagnosis and treatment. Health education is one of the important interventions in developing the mental health resilience of adolescents and families, and thus communities. School nurses and can lead with specific educational interventions on this subject. This education can potentially reduce stigmatization and increase help-seeking behaviors by providing primary prevention measures. Thus, it will effectively reduce morbidity and mortality, enable early diagnosis, and empower adolescents and families.

According to data from the Statistical Institute (TÜİK), 3406 people died by suicide in 2019. The 15-19 age group accounts for 9,3% of the deaths (TÜİK, 2020). In the literature of different cultures, trainings on MHL are included in the school system, while in some cultures they are included as interventional studies. In addition to the fact that MHL education increases the level of knowledge, interventional studies in the literature have been examined in different parameters as a result of some studies and it has been determined that help-seeking behaviour has improved and stigmatisation has decreased in students students (Yang 2018, Pinto Foltz 2011, Ojio 2015, Millin 2016, Skre 2013, Perry, 2014, Mcluckie 2014, Saporito 2011, Watson 2004). Poor literacy in society creates a serious burden of disease (Andrews et al., 2002; Shefield et al., 2004) and associated with lower rates of help-seeking/receiving and service use, as well as social and self-stigmatisation and discriminatory behaviour (Sakellari, et. al., 2016).

The main aim for our country is to reduce the incidence and risk factors, increase protective factors through awareness and health education, improve resilience and self-help skills, and reduce

stigmatisation. The lack of studies on MHL in our country will fill an important gap in this field and contribute to the literature. The unique value of this project is that the concept of MHL has never before been explored in our society, an original new educational material based on the literature has been created, and a tested (Google Scholar, Ulakbim, Türk Medline, DergiPark, PubMed, EBSCO, Cochrane Library, and Ovid databases were screened). As this MHL information spreads throughout society, it is expected that there will be positive changes in terms of stigma, levels of knowledge and behavior when seeking/accepting help. The other unique value of this project is that web based MHL education development fills the gap that exists among school children and youth at an early stage of our society and invests in human resources for the future by capitalizing on missed opportunities. The ultimate aim of the project is to reach schools by distributing this school nurse prepared verified and reliable teaching materials to all schools and nurses at schools.

1.1. The Project Study Framework

The researchers aim to examine the effect of web-based educational interventions on mental health literacy on adolescent students' knowledge level, help-seeking, and stigmatization attitudes.

1.2. Objectives

This project firstly aims to develop web-based MHL educational material for adolescents, secondly, the aim is to investigate the effect of web-based mental health literacy interventions delivered by nurses on students' knowledge levels, help-seeking and stigma attitudes.

1.3. Hypotheses

H0: The intervention and control groups were similar to each other in terms of the MHL knowledge level variable, group, time, and group*time effects with the MHL education intervention.

H1a: In terms of the MHL knowledge level variable, there is a difference between the intervention group and the control group with the MHL education intervention according to group, time and group*time effects.

H1b: In terms of the MHL help-seeking/receiving behavior variable, there is a difference between the intervention group and the control group with the MHL education intervention according to group, time and group*time effects.

H1c: There are differences between the intervention and control groups in terms of change in MHL stigma with the MHL education intervention according to group, time and group*time effects.

2. Materıals and Methods

2.1. Design

Randomized Controlled Trial Research design with two groups (pre-test and repeted post-test control group design) will be used in the project. The data will be collected through the Mental Health Literacy Scale for Children and Adolescents (MHLS), Attitude Scale for Seeking Psychological Help-Short Form (ASPH-S), Self-Stigma in Seeking Psychological Help Scale (SPHS) and the sociodemographic Question Form.

2.2. Participants

The project will be carried out with the students of a secondary school and a high school in the district of Balçova, İzmir province in west of Türkiye.

2.3. Inclusion and Exclusion Criteria

2.3.1. Inclusion Criteria:

- between the ages of 12-18 (inclusive)
- volunteering to participate
- having the access to internet
- knowing how to use the internet
- without visual impairment
- without hearing impairment
- without perceptual impairment

2.3.2. Exclusion Criteria:

- not volunteering to participate
- Not completing training sessions

2.4. Sample Size Determination

The population of the study consisted of 5 secondary schools and 7 high schools in Balçova district of İzmir province. Since the prepared education was specific to the adolescent period, one school each from middle school and high school was selected to represent the age period. Two schools (one secondary school and one high school) were selected by lot among the schools representing the population and 1038 students studying in High School (650) and Secondary School (388), which are similar in terms of socio-cultural and socio-economic characteristics, constituted the sample.

Sampling calculation Based on the analysis of variance in repeated measurements in 2 groups in the G Power program, Type1 Error 0,05 (alpha 5%) Type2 Error 0.20 (80% power), the sample size calculated in duplicate measurements with medium effect (0,25) size is 43 participants for each group (Intervention-Control) calculated. Considering that there might be losses during data collection, it is planned to include 50 students for the intervention group and 50 students for the control group. Considering that there may be losses during data collection, a total of 100 students will be included for the experimental and control groups with 10% more (Correlation was calculated as 0.50) (Bulut, 2023; Şencan, 2005).

2.5. Randomization

The student lists of both sample schools will be received from the school principals in excel format. Then, randomization will be done separately for two schools via a program (https://www.randomizer.org/) in a computer web environment for randomization and experimental control group assignments. Random selection will be applied by matching the 50 numbers determined by the program separately for both schools with the school numbers from the student lists. In this way, a sample group of 100 students will be determined. From the total student list formed by both schools,

50 students will be assigned to the experimental group and 50 students will be assigned to the control group through randomisation numbers. The similarities between the groups will be evaluated by using chi-square test according to gender, t-test for age averages, and multinomial chi-square test in groups of three. After the students belonging to the experimental and control groups will be determined, the informed consents of the students in both groups (Informed consent forms will be sent to the families of the children in a sealed envelope) before the questionnaires will be applied and the signed forms will be collected through the students.

2.6. Outcome measures

The primary outcome in this study is expected to be an increase in students' MHL knowledge, development of help-seeking behavior, and a decrease in stigmatizing attitudes after the training. Three scales will be used to assess whether the learning outcomes are appropriate.

As a secondary outcome in this study, feedback from participants on the effectiveness of the prepared MHL Education will be obtained. A survey will be used for students to evaluate their learning and MHL education experience. The results of this study will also be used to develop community-oriented MHL Education with the school community.

2.7. Validity and reliability of instruments

2.7.1. Mental Health Literacy Scale for Children and Adolescents (MHLS) (Rozbruch, 2018).

This scale, developed by Rozbruch and Friedberg (2018), consists of 5 items. The Cronbach alpha coefficient calculated for the internal consistency of the scale is ,84. The scale is a three-item Likert-type scale (not appropriate - not sure - appropriate answer options) consisting of two multiple-choice items, one open-ended item, and two items with 8 sub-dimensions (Parent, Friends, Clergyman, Psychologist, Counselor, Psychiatrist, Family Physician, Teacher). The lowest value that can be obtained from the scale varies between 0 and the highest value, 6 (1st question: 1 point, 3rd question: 2 points, 4th question: 2 points, 5th question: 1 point). The Turkish culture adaptation of the scale was made by the researchers (Salkım & Özbıçakçı, 2022).

2.7.2. Attitude Scale for Seeking Psychological Help-Short Form (ASPH-S) (Türküm, 2004).

Attitude Scale for Seeking Psychological Help-Short Form (ASPH-S): This tool (ASPH-S), which aims to measure attitudes towards seeking psychological help, is a revised and shortened version of ASPH developed by Türküm (1997). As a result of the factor analysis conducted for the construct validity of the ASPH-S scale, it was determined that it consisted of a two-factor structure as positive (12 items) and negative (6 items) and explained 52,6% of the total variance. The Cronbach alpha coefficient calculated for the internal consistency of the scale consisting of 18 items was ,90. Test-retest reliability for stability over time was found to be 77. The score that can be obtained from the scale is between 18 and 90, and a low score indicates that there is no need for help. The scale, which consists of 5-point Likert-type categories, is scored as Completely Agree, Strongly Agree, Undecided, Partially Agree and Never Disagree. (Totally Agree = 5, Strongly Agree = 4, Undecided = 3, Partially Agree = 2, Strongly Disagree = 1) 6 items of the scale are calculated by reverse scoring. These items are: 2, 8, 12, 13, 16, 17.

2.7.3. Self-Stigma in Seeking Psychological Help Scale (SSSPHS) (Kapıkıran & Kapıkıran, 2013)

The scale developed by Vogel et al. (2006) consists of ten items. The scale is a 5-point Likert type one-dimensional scale. The scale was adapted to Turkish culture by Kapıkıranlar (2013). Cronbach alpha value is calculated for the internal consistency of the scale is 71. Confirmatory factor analysis of the one-dimensional scale was performed. The internal consistency of university students (17-33) was calculated as ,91, and the test-retest reliability with an interval of two months was calculated as .72. Some items of the scale are scored reversely, and high scores indicate the high level of self-stigma in asking for help. Some items of the scale are scored inversely, and a high score indicates a high level of self-stigma in asking for help

2.8. Study Protocol

A panel of experts consisting of the research team reviewed and finalized the study protocol. The protocol is registered in ClinicalTrials.gov with ID number NCT04597996. URL: https://clinicaltrials.gov/show/ NCT04597996

2.9. Data Collection

Students in the experimental group will be informed—unlike those in the control group—that there is web-based Education material about mental health literacy. The settings for watching this content were made so that only those who have the link can watch it. Thus, only the experimental group will be able to watch and access. In addition, the experimental group students will be told that they should not share the content as a rule of participating in this study. One week before the training, pre-test measurements surveys were applied to the experimental and control groups, and after education then post-tests and follow-up tests will be applied using the same forms at the 4th week and at the end of the 3rd (12th week) month. A survey also will be used to collect feedback from intervention group. The control group will have access to the same education once the study is complete. Additionally, after the research period is over and the findings have been assessed, the training's content will be distributed to the entire school community.

2.10. The Study Procedure

Analysis of variance will be used in the evaluation of data, number, percentage, and descriptive statistics, and in repeated measures ANOVA to evaluate the effect of the intervention The training modules to be prepared within the scope of the project will focus on the mental health literacy level of the child, attitudes to seek help and stigmatization. Among the teaching materials planned to be prepared for this purpose, there will be short animated course videos, video course contents, and audio presentations. In the study, where web-based education is planned, teaching materials will be delivered to students through the learning management system. During the teaching material development phase, firstly, educational content drafts (storyboards) will be created and presented to field experts, and their opinions on content, teaching approach, methods and techniques, and visual design principles will be taken. Pilot studies will be conducted to understand the educational content during the improvement phase of the

developed teaching material designs. It is planned to finalize the training content in light of expert feedback.

2.11. Research Design

Figure 1 represents our research The consort flow diagram of study. First, an introduction of the research study to the participants. Students in selected schools will be randomly divided into two groups intervention and control groups. A web-based education intervention will be made to the Intervention arm group. (Table 1 content of six modules in web Based MHL Education) In both groups, the first post-test in 1 month, the second post-test 3 months later will be applied.

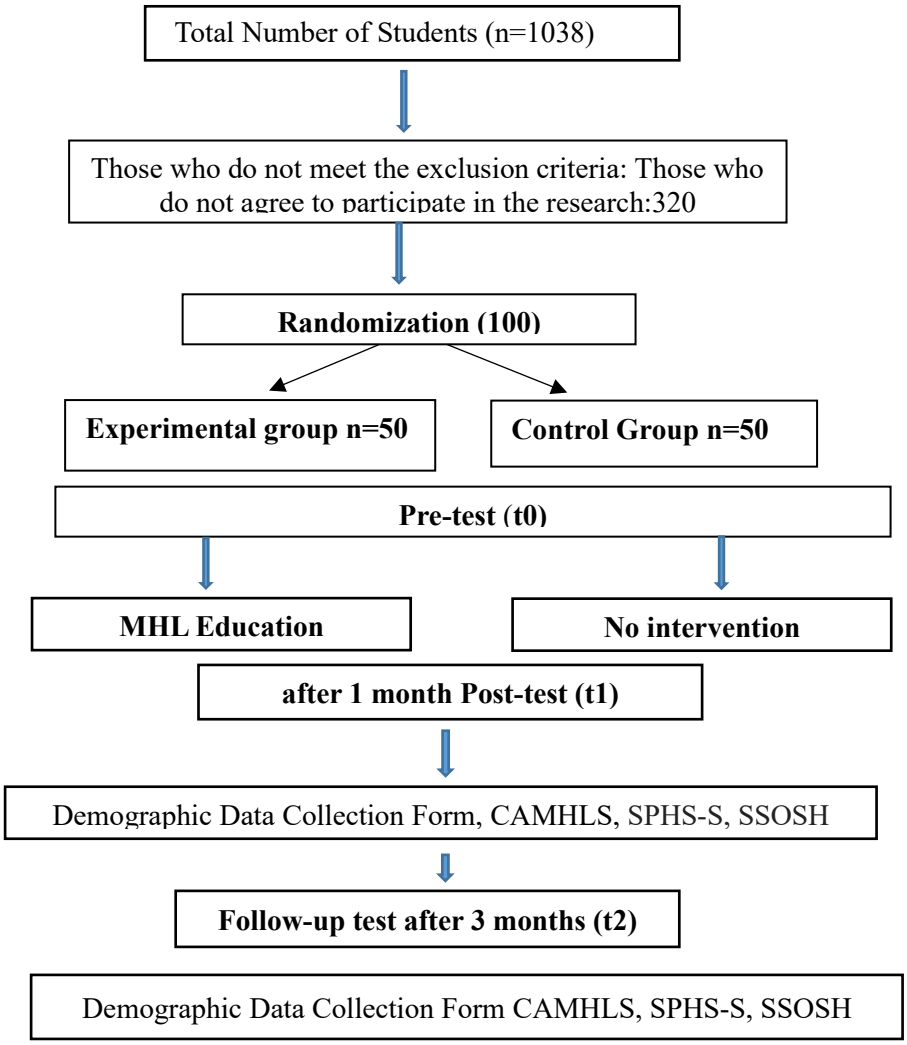

Figure 1. The CONSORT flow diagram of study

Table 1.Content of six modules in web based MHL education

Theme of Module	Purpose and content of the module
Mod 1: What is mental health literacy?	To teach students what they need to know about Mental Health Literacy and to understand what is meant by the concepts of mental health distress, mental health problem or mental illness.
Mod 2: What are mental disorders? How are they treated?	To enable students to understand how mental health disorders occur, what their symptoms are and how they can be treated.
Mod 3: Human Brain - How is the Brain connected in Development and Mental Health?	To enable students to explain the working system of the brain, its parts, the changes in the adolescent brain and their effects.
Mod 4: What are stigmatization and its effects in mental disorders?	Understand how to successfully address the stigmatization of illnesses and develop help-seeking behavior.
Mod 5: What is the importance of seeking help and support?	To enable students to learn the four awareness stages of help-seeking processes in order to develop help-seeking behavior as a coping method against the problems they experience.
Mod 6: What is the Importance of Positive Mental Health?	To enable students to understand what stress is, what the effects of stress response and fight-flight response will be on our body and life and to teach breathing exercises as a method of coping with stress.

2.12. Control Arm

The control group will not have any intervention during the study.

2.13. Intervention

In this study, a new training module focusing on the child's mental health literacy level, help-seeking behavior, and stigmatization attitude will be designed by the researchers. First, the intended learning outcomes will be determined to plan the training content. Various teaching resources, including audio presentations, short animations, and video lesson content suitable for this purpose, will be created. The training will consist of 6 modules aimed at the objectives. The prepared training modules will be uploaded to the YouTube channel opened for use in the study. The link will be provided to the intervention group so that only those who have the link can watch it. The authors will be asked to watch within the specified time and the number of views on YouTube will be monitored by the authors. One of the authors, Ö. ÖZKAN, will receive MHL Teaching training from Columbia University. Finally, the students' learning experiences and teaching will be evaluated according to the desired learning outcomes.

2.14. Ethics

Written permission was obtained from the Dokuz Eylül University Non-Interventional Ethics Committee (4931-GOA) and the İzmir Directorate of National Education for the schools where the study was conducted. Written informed consent was obtained from the students and their families participating in the study.

3. Discussion

This manuscript outlines a protocol for a randomized controlled trial to develop web-based MHL educational materials for adolescents, with the secondary aim of examining the effects of a web-based mental health literacy intervention on students' knowledge, help-seeking behavior, and stigmatization attitudes. When the literature is reviewed, it is seen that the mental health literacy post-test scores of the experimental group students who participated in the MHLeducation program were significantly higher than the pre-test scores. In this context, it can be concluded that the MHLE program is effective in increasing the mental health literacy levels of adolescents (Campos et al., 2018; Hayes, Moore, & Stapley, 2019; Lindow et al., 2020; Gorczynsk, Sims-Schouten, & Wilson, 2020; Hassen et al., 2022; Miles et al., 2022) It has been observed that people with high MHL levels are more competent in recognizing psychological problems and knowing the sources of help-seeking, while people with low MHLE levels have difficulty in recognizing psychological problems and exhibit ineffective behaviors towards seeking help (Tay, Tay, & Klainin-Yobas, 2018; Lindow et al., 2020; Kutcher, Bagnell, & Wei, 2015; Gorczynsk, Sims-Schouten, & Wilson., 2020; Suwanwong et al., 2024). Therefore, people with high MHLE levels have higher positive attitudes towards seeking psychological help. In this case, considering that people have more information about psychological disorders, resources, and treatment methods; it is an expected result that people's attitudes towards seeking psychological help to cope with psychological problems are more positive. An increase in the MHLE level corresponds to a decrease in the level of self-stigma. Individuals with high levels of self-stigma feel shame and guilt due to their psychological problems. There are studies showing that seeking/receiving psychological help predicts attitudes towards self-stigma (Cheng et al., 2018; Tucker et al., 2013; Rafal & Gatto, & DeBate, 2018; Brenner et al., 2018). It has been stated that schools are responsible for improving mental health (Milin et al., 2016). Therefore, schools can be a useful area for raising awareness among adolescents and disseminating this information to families and society (Anjo, 2019). This study has limitations first Experimental educational interventions might not be easily generalized from one school or country to another due to influence of other factors (Bruffaerts et al., 2018). If this study proves effective, it could provide evidence for the development of sustainable public awareness in our country.

4. Trial status (13 June 2023)

Ethical approval was obtained from all schools. Provincial Directorate of National Education, teachers, students and familys schools were informed (informed consent). 50 students agreed to participate in the experimental group and 50 students agreed to participate in the control group. The intervention was applied to the experimental group students. Study Follow-up post-test is in the second step.

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Conflict of Interest
No conflict of interest has been declared by the authors.

Ethical Statement
Decision No:2022/30-23, 4931-GOA*, 21.09.2022*

Authorship Contributions: *First author 55%, second author 45%*

Concept and design of the study: *ŞÖ, ÖÖ;* ***Data collection:*** *ÖÖ;* ***Data analysis and interpretation:*** *ÖÖ, ŞÖ;* ***Writing:*** *ŞÖ, ÖÖ;* ***Critical revision:*** *ŞÖ*

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