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The Effectiveness of a Stress Management and Mindfulness Skills Kit (SMMS) for Undergraduate Students

Linda Kwan Yuet Ling[1]***,**
Department of Psychology, The Education University of Hong Kong, Hong Kong
Pavithra Muniandy[2]
Faculty of Education, Languages, Psychology and Music, SEGi University, Malaysia

*Corresponding author Email: ylkwan@eduhk.hk

ABSTRACT

Stress management and mindfulness training are becoming increasingly important for undergraduates. Expanding educational and social interactions has presented new and unforeseen obstacles for young learners, who increasingly need self-regulation strategies. Students can learn mental and emotional health practices for themselves and others with a Stress Management and Mindfulness Skills (SMMS) kit. The current mixed-methods research proposal by The Education University of Hong Kong (Hong Kong, China), Udayana University (Bali, Indonesia), and SEGi University (Malaysia) examines the validity of an SMMS Kit. The study involved 26 undergraduate Psychology students from The Education University of Hong Kong, Udayana University, and SEGi University. The SMMS kit was given to the students, who completed a pre- and post-test to assess their perceived changes in stress management and mindfulness. This research should also allow for a longitudinal study on student wellness. Participants in this comprehensive research project are anticipated to learn stress and mindfulness-regulation skills as part of a holistic psychological health education.

Keywords: Stress Management, Mindfulness, Self-regulation, Psychological health, Undergraduates

1. Introduction

1.1 Background

Stress management is an increasingly essential skill for students and young adults as they navigate academic, social, and personal challenges in a rapidly evolving world. Additionally, with the rise of digital learning and online interactions, mindfulness has become a crucial tool for managing the constant influx of information available in virtual spaces (Bossi et al, 2022). The implementation of a Stress Management and Mindfulness Skills (SMMS) Kit, as part of a standardized undergraduate curriculum, aims to equip students with the psychological resilience needed to manage both online and offline challenges effectively.

The SMMS Kit has been designed to help students identify potential stressors and develop appropriate coping strategies in an undergraduate educational setting. It consists of mindfulness e-cards, an e-book, and a dedicated webpage. Given the increasing reliance on digital platforms for learning, these resources provide students with accessible, self-guided applications for stress relief and mindfulness practices. By integrating these tools into their routines, students can cultivate greater emotional well-being and enhance their ability to manage stress in both academic and personal life.

1.2 Objective

In continuation of the development of the Stress Management and Mindfulness Skills (SMMS) Kit, the purpose of this research is to test the Kit's validity and its effectiveness among undergraduate students. The research was conducted using a mixed-methods design, which includes a stress management and mindfulness inventory, a survey, and interviews. Students from The Education University of Hong Kong (Hong Kong, China), Udayana University (Bali, Indonesia), and SEGi University (Malaysia) were selected through convenience sampling to establish the cross-cultural reliability of the SMMS Kit. The SMMS Kit was implemented as part of a one-semester course on stress management and mindfulness at The Education University of Hong Kong, Udayana University, and SEGi University by educational instructors.

Pre-post tests were used to determine changes in the baseline stress levels and mindfulness of participants, and to assess how their stress management and mindfulness skills improved throughout the SMMS Class. It is anticipated that there will be an overall improvement in the quality of the student's emotional health and their feelings of empowerment towards practicing the SMMS techniques. Researchers will conduct interviews and administer an inventory questionnaire as part of the pre-post test.

1.3 Research Questions

The primary research question posed is: What is the validity of a Stress Management and Mindfulness Skills (SMMS) Kit tested on undergraduate psychology students from The Education University of Hong Kong (Hong Kong, China), Udayana University (Bali, Indonesia) and SEGi University (Malaysia)? A secondary research question posed is: What changes occur in the stress management and mindfulness of undergraduate psychology students from The Education University of Hong Kong (Hong Kong, China), Udayana University (Bali, Indonesia), and SEGi University after completing a course on stress management and mindfulness?

2. Literature Review

2.1 Effect of post-COVID-19 on College Student's Mental Health

Son et al. (2020) studied the influence of COVID-19 on the mental health of college students to identify major stressors. General stress levels were assessed using a mixed-methods approach, which included a Perceived Stress Scale-10 (PSS), which was used to assess overall stress in the month before the study. Secondly, participants were asked to report on their stress and their perception of their peer's stress. Furthermore, participants were asked to describe stressors, coping strategies, and barriers to mental health treatment before the event of COVID-19 and after the event of COVID-19 had begun. Participants were undergraduate university students from a large university system in Texas, United States. The students were asked to participate in the study after the university system closed all in-class learning due to the COVID-19 pandemic, and therefore

they participated in the research online.

Son et al. (2020) reported that "out of the 195 participants, 138 (71%) indicated that their stress and anxiety had increased due to the COVID-19 pandemic, whereas 39 (20%) indicated it remained the same and 18 (9%) mentioned that the stress and anxiety had decreased. Only10% of students reported using mental health counseling services, and the majority of participants assumed that other students were experiencing similar stress and anxiety because of COVID-19. At least 54% (up to 91% for some categories) of participants indicated negative impacts (either mild, moderate, or severe) of COVID-19 on academic, health, and lifestyle-related outcomes".

Two to five themes for each category of qualitative analysis were found. The categories were: difficulty with concentration, disruption to sleep patterns, increased social isolation, concern about academic performance, disruption to eating patterns, financial difficulties, changes in the living environment, increased class workload, depressive thoughts, and suicidal thoughts. A majority of participants reported difficulty in concentrating on academic work due to various sources of distractions, particularly their home being a distracting environment, along with some disruption to sleep patterns. Academic work was seen to be negatively influenced by the adoption of online learning formats, which brought about an increased uncertainty in learning outcomes and performance, along with a decrease in motivation. Participants also reported an increased feeling of social isolation, which included decreased social interaction and concerns about in-person contact. Over half of the participants reported a negative impact on their eating habits, significant changes to their living environment, concern about their financial situation, and an increase in their academic workload. Regarding depressive and suicidal thoughts, 44% and 8% of participants reported these respective experiences.

Participants reported using coping mechanisms such as stress management and seeking support from others. Over half of the participants engaged in hobbies as a means of managing stress, while one-third reported communicating with friends and family as a primary means of social support. However, the majority of participants who reported increased stress and anxiety also indicated that they did not use school counseling services during the pandemic. Stigma and negative perceptions of mental health services and professionals were cited as reasons for not seeking support.

In summary, Son et al. (2020) found that a majority of participants experienced an increase

in stress and anxiety due to COVID-19. Participants reported health concerns and concentration as major issues, with 44% having reported an increased level of depressive thoughts and 8% an increased level of suicidal thoughts. Among others, participants reported increased concerns about their financial and living situations, academic performance, and social interaction, along with their eating and sleeping habits. Participants reported using hobbies as a coping mechanism, along with relying on communicating with family and friends as a social support. Despite available counseling services, participants reported not utilizing professional support due to stigmatization and a negative impression of professional counseling providers or counseling in general.

2.2 Online Stress Management Intervention

Hintz, Frazier, and Meredith (2014) evaluated **a** stress management and mindfulness intervention in college students using an online platform. They referenced Ryan, Shochet, and Stallman's (2010) research on how online interventions might help psychologically distressed students who are unlikely to seek formal psychological counseling. In such research, they found that students who were already distressed were less likely to seek formal counseling, yet were more likely to **use** online interventions. Further, Hintz, Frazier**,** and Meredith (2014) referenced Cavanagh et al.'s (2013) research on how an online mindfulness intervention promoted an increase in mindfulness, along with a decrease in perceived stress, anxiety, and depression.

Hintz, Frazier, and Meredith (2014) conducted 2 pilot studies to assess "the feasibility of a present control intervention, to gauge the effect size of change in present control and other outcomes, and to gather information to improve the intervention" (p. 3). *Present control* was defined as "one's ability to control present aspects of a stressor" (p. 1) and "focuses more narrowly on control over present aspects of stressors (e.g., use problem-focused coping, make new friends, keep from feeling sad)" (p. 1). The present control intervention involved the use of written text (with optional narration), pictures, student testimonials, expert videos, and practice exercises. To test for efficacy, a present control intervention group was compared to a stress-information-only group.

Participants were undergraduate university students enrolled in the psychology program at a large Midwestern university in the United States. Participants were screened for present control, and those that scored high on the Perceived Control Over Stressful Events Scale were not invited to participate since they were considered to be unlikely to receive an exceptional benefit from the study. Based on their first pilot study, the between-group and within-group pre-posttest effect sizes

were medium for increases in present control. Participants reported generally positive feedback on the intervention and online formatting; notably, on the expert videos, lesson content, and practice exercises. However, "the images did not seem to be connected to the material, and the student testimonial was difficult to follow" (p. 3).

Their second pilot study incorporated the feedback and accented the positive attributes of the first pilot study, and further, they changed the student testimonials from a single to a group format and made more videos to provide more lesson content. Due to the already exploratory nature of the first pilot study, Hintz, Frazier, and Meredith (2014) assessed the efficacy of the second pilot study in regards to increases in present control and positive affect, along with decreases in negative affect. They found a significant increase in present control and a decrease in negative affect. There was a marginal increase in positive affect, with large effect sizes for within- group present control, and medium - small for positive and negative effect. The participants again reported on the helpfulness of the expert videos and benefits of the program, but reported negatively the student group videos, sighting that they were hard to follow and boring.

The intervention effects on present control were found to be "more effective in increasing present control than the stress-information-only comparison group" (p. 3). Further, there was a significant between-group difference at post-intervention, and at the 3-week follow-up. However, there was no significant difference found between the PCI and PCI-plus-feedback groups. Hintz, Frazier, and Meredith (2014) assessed group differences at post-intervention for four mental health outcome variables (depression, anxiety, stress, and perceived stress). They found significant differences between the groups for perceived stress, anxiety, and depression, but not for stress symptoms. The PCI group reported significantly less stress, perceived stress, anxiety, and depression than the stress-information-only group, and the PCI-plus-feedback group reported significantly less depression and perceived stress than the stress-information-only group. However, there were no significant differences between the PCI and PCI-plus-feedback groups. Additionally, regression analysis of changes in present control and mental health outcomes was found to be significant, indicating the mediating effects of present control on depression, anxiety, stress, and perceived stress.

In conclusion, there was a greater increase in present control for the intervention groups over the stress-information-only group. "The intervention groups also experienced significantly greater reductions in perceived stress and symptoms of anxiety, depression, and stress than the stress-information-only comparison group" (p. 8). There was no significant difference found between the

PCI and PCI plus feedback groups, which indicated that the additional feedback intervention served no additional benefit to the overall intervention modules. The present control intervention was found to mediate the mental health outcomes of depression, anxiety, stress, and perceived stress.
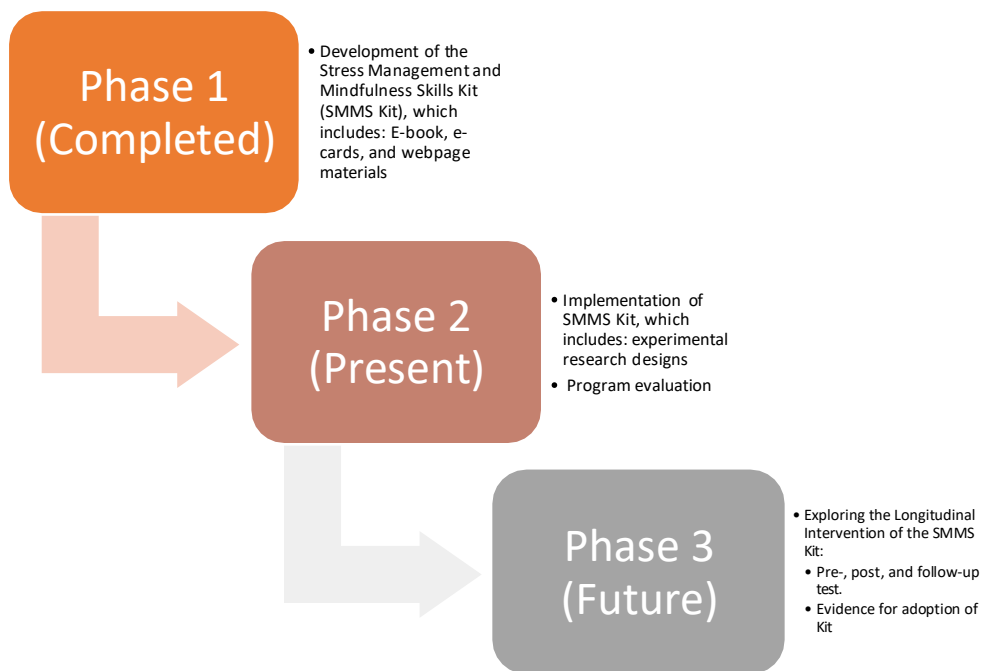
3. Method

3.1. Research Road Map

Figure 1. Research Road Map

A mixed-methods research approach was used to identify the validity and effectiveness of

the Stress Management and Mindfulness Skills (SMMS) Kit as it was tested on the undergraduate students of The Education University of Hong Kong (Hong Kong, China), Udayana University (Bali, Indonesia) and SEGi University (Malaysia). The approach employed a stress management and mindfulness inventory, a survey, and interviews for both pre-and post-test samplings. The implementation of the mixed-method approach can be seen in Figure 2.
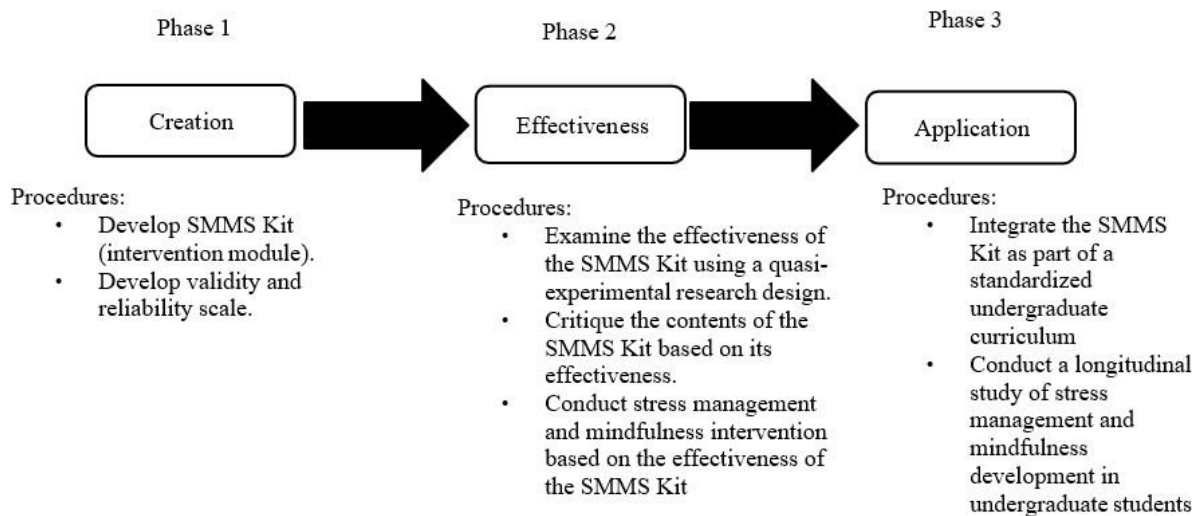

Figure 2. Comprehensive Research Design

3.2. Research Methods

Phase 1 Developing the SMMS Kit

Mindfulness and stress management theories have been used as part of a transformative framework to develop the SMMS Kit. The SMMS Kit includes an e-book, e-cards, and a webpage. In phase 1, a validity and reliability scale has been created to assess the effectiveness of the stress management and mindfulness techniques provided as part of the kit. The development of the SMMS Kit follows the six steps of module development outlined by Russel & Johanningsmeier (1981), which consists of 1) *Specification of Objectives; 2) Construction of Competency Tests; 3) Analysis of Learner Characteristics; 4) Design of Instructional Experiences;5) Student Tryouts; and 6) Evaluation of Instructional Processes.* The SMMS Kit has been developed by students and lecturers from the Psychology Department of Udayana University and The Education University of Hong Kong.

Phase 2 Implementing the SMMS Kit

The SMMS Kit will be implemented as instructional material to undergraduate psychology students in a Stress Management and Mindfulness Course at The Education University of Hong Kong, Udayana University, and SEGi University. The SMMS Kit has been implemented over a 6 to 12-month period, which includes up to 2 full semesters of instruction and effectiveness testing of the intervention module. An additional semester was utilized to conduct the intervention study. The data from the first study was used to analyze validity, while data from the second study was used to analyze cross-cultural reliability.

Phase 3 Exploring the Longitudinal Intervention of the SMMS Kit

A longitudinal study will be conducted to assess the changes in participants' stress management and mindfulness after the completion of the SMMS Course. Using a quasi-experimental pre-posttest-follow-up design, participants will be provided the stress management and mindfulness inventory, a survey, and interviews regarding their stress management and mindfulness before the SMMS Course, after the completion of the SMMS Course, and 6 months after the completion of the course. Participants will be sampled from the undergraduate psychology program of The Education University of Hong Kong (Hong Kong, China), Udayana University(Bali, Indonesia), and SEGi University (Malaysia).

3.3. Ethical Considerations

The proposed research protocols were reviewed by the Ethical Commission from the Faculty of Medicine, Udayana University. All of the participants were informed about: 1) the research; 2) the benefits; 3) the responsibility of the researchers; and 4) the data confidentiality guarantee in the written informed consent.

4. Results

The SMSS (Stress Management and Mindfulness Skills) kit, designed for undergraduate university students, underwent a thorough validation process to ensure its content was both effective and relevant to its intended audience. The validation process included two key stages: expert review and pilot testing with students.

4.1 Expert Review

A panel of subject-matter experts evaluated the content of the SMSS kit. Their assessment focused on the accuracy, comprehensiveness, and applicability of the materials provided on the website. Feedback from the experts was overwhelmingly positive, with the reviewers affirming that the content was well-structured, aligned with contemporary stress management practices, and suitable for the target demographic. The experts unanimously deemed the kit ready for deployment.

4.2 Student Feedback

To further ensure the practical usability of the SMSS kit, a pilot test was conducted with undergraduate university students. Participants explored the website and its resources, then shared their opinions on the content's clarity, relevance, and overall usefulness. The student feedback was highly encouraging, with the majority expressing satisfaction with the materials. They reported that the resources were easy to understand, engaging, and applicable to their daily challenges in managing stress and practising mindfulness. Hence, the combined insights from the expert review and student feedback confirm the validity and utility of the SMSS kit for its intended audience. The kit is well-equipped to provide undergraduate students with effective tools to manage stress and cultivate mindfulness, making it a valuable resource in promoting mental well-being

on university campuses.

4.3 Quantitative Analysis

The survey responses from 26 students were analyzed to evaluate the reliability and effectiveness of the SMSS kit. The survey included questions on various aspects of the e-book and e-cards provided in the kit.

Below is a summary of the key results:

Item	Most frequent response	Agree/Strongly Agree (%)	Disagree/Strongly Disagree (%)	Neutral (%)
1.Have you ever practised mindfulness before reading the e-book?	Yes (69.2%)	-	-	-
2.The e-book provided sufficient knowledge on the origins of mindfulness.	Agree (73.1%)	100	0	0
3. The e-book provided a clear definition of mindfulness.	Agree (69.2%)	96.1	3.8	0
4. The e-book provided a clear idea on the advantages of mindfulness.	Agree (80.8%)	100	0	0
5. The e-book clarified misconceptions about mindfulness.	Agree (73.1%)	84.6	15.3	0
6. The e-book provided a range of approaches to practise mindfulness.				
7. The e-book provided clear steps on how to practise mindfulness.	Agree (80.8%)	100	0	0
8. The e-book provided diversified	Agree	100	0	0

resources to learn about mindfulness in daily life.	(100%)			
9. The e-book inspired mindfulness practice in daily life.	Agree (84.6%)	100	0	0
10. The e-book was beneficial for personal growth.	Agree (88.5%)	100	0	0
11. The e-cards provided clear steps on how to practise mindfulness.				
12. The e-cards helped in learning about mindfulness in daily life.	Agree (76.9%)	100	0	0
13. The e-cards inspired mindfulness practice in daily life.		96.1	3.8	0
	Agree (96.2%)			
	Agree (92.3%)	92.3	7.7	0

Table 1. Descriptive Statistics for SMMS Kit Survey

The e-book was highly effective in providing clear definitions, benefits, and actionable steps for mindfulness practice. This is evident from the 100% agreement in several categories, such as clarity of steps and resource diversification. Students found the content to be well-organized and comprehensive, which helped them gain sufficient knowledge about the origins and advantages of mindfulness. However, a small percentage of students (15.3%) disagreed with the e-book's ability to clarify misconceptions, indicating that some areas may require further refinement.

The e-cards were equally effective in enhancing students' understanding of mindfulness practices. They were particularly helpful in demonstrating clear steps to incorporate mindfulness into daily life, with 100% agreement in certain aspects. Moreover, the e-cards were recognized for their ability to inspire mindfulness practices and contribute to personal growth, with over 96% agreement. These results highlight the significant role of the e-cards in reinforcing and applying the concepts introduced in the e-book.

Additionally, 69.2% of the students reported practising mindfulness before using the SMMS kit. This demonstrates the kit's potential to reach both novices and those already familiar with mindfulness practices, making it a versatile resource for stress management and personal growth.

5. Discussion

The findings from this study underscore the potential of the SMMS kit as an effective tool for promoting mindfulness and stress management among undergraduate students. The overwhelmingly positive feedback for the e-book and e-cards suggests that the resources align well with student needs and expectations. This is consistent with previous studies that emphasize the importance of clear and structured resources in fostering mindfulness practices (Kabat-Zinn, 2022). The e-book's success in providing actionable steps and diversified resources resonates with the need for accessible materials to build foundational mindfulness skills.

One of the key strengths of the SMMS kit is its ability to cater to students with varying levels of prior mindfulness experience. The findings revealed that 69.2% of participants had previous mindfulness experience, yet the kit was still beneficial for this group. This supports the notion that mindfulness resources can be designed to be both introductory and enriching for experienced individuals (Shapiro et al., 2014). The e-cards, in particular, were highly valued for their practical application, further demonstrating the importance of interactive and visual aids in promoting mindfulness. While the overall feedback was positive, the minor disagreement regarding the e-book's ability to clarify misconceptions about mindfulness indicates room for improvement.

Addressing this gap could involve incorporating more detailed explanations or examples to debunk common misconceptions. Future iterations of the SMSS kit might also benefit from integrating peer-reviewed research or testimonials to enhance credibility and engagement. By refining these aspects, the SMMS kit could further strengthen its role as a comprehensive tool for mental well-being in academic settings.

6. Conclusion

In conclusion, one notable strength of the SMMS kit is its capacity to engage both novice and experienced mindfulness practitioners. The inclusion of diversified approaches, clear steps, and interactive aids such as e-cards allowed the kit to be relevant and beneficial across varying levels of prior mindfulness exposure. By addressing stress management needs, the SMMS kit contributes to the growing recognition of mindfulness as a crucial tool for enhancing mental well-being in academic environments.

Nevertheless, areas for improvement remain. Specifically, addressing misconceptions about mindfulness could further enhance the kit's educational value. Incorporating additional resources, peer-reviewed studies, and real-life examples may improve engagement and provide greater depth to the content. Overall, the SMMS kit represents a promising initiative for supporting mental health and mindfulness practices, with the potential for further refinement and broader implementation in educational settings.

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