



The Efficacy of Calm Application for Improving High School Students' Subjective Well-being

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Literature Review

High school students are experiencing increasing rates of anxiety (Richards et al., 2015), and they perceive school as their primary source of stress (APA, 2019). Karunananda et al. (2016) suggest that the lack of opportunities in educational systems to prepare students to face the demands of the modern world has influenced the increase in anxiety disorders. The authors posit that mindfulness meditation is one possible remedy to alleviate this problem.

The literature has shown that mindfulness is a feasible and practical intervention to help youth cope with stressors (Felver et al., 2015; Kuyken et al., 2013; Metz et al., 2013). However, the specific gap addressed by this study was the absence of information about the efficacy of online mindfulness training in high school students (Carsley et al., 2017; Daudén Roquet & Sas, 2018; Felver et al., 2015; McKeering & Hwang, 2018; Semple et al., 2017; Spijkerman et al., 2016; Zenner et al., 2014).

Research Question

If and to what extent do any differences exist in high school students' subjective well-being before and after listening to the Calm application?

Theoretical Foundation

The theoretical foundation for this study was Positive Psychology and the PERMA model (Seligman, 2009). Positive psychology focuses on individual strengths, growth, resiliency, and happiness (Csikszentmihalyi, 2014), suggesting that there is no road to happiness. Instead, happiness is the road (Dyer, 2010).

Participants

The participants in this study were 105 high school students recruited from two convenient locations (a high school and a fitness center) in the Western United States. Seventeen students did not have matched data and five students did not attend at least three sessions. Therefore, the final sample consisted of 83 high school students (67 females, 15 males, and one unidentified gender). Most of the students were Latinx in grades 9-11 with little or no understanding of mindfulness.

Method & Design

A quasi-experimental, single-group, pretest-posttest design was chosen to address the research question. Data collection occurred within six separate weeks, and the protocol was the same for each week. Students attended via Zoom Monday through Friday at 3:00 p.m. Each session lasted approximately 25 minutes. The time included taking attendance, meditation sessions, and administering the pretest and the posttest. Parental consent was secured, and students completed the assent form and pretest on the first day (before the guided meditation) and the posttest on the fifth day (after the guided meditation).

Instruments

Data collection occurred via one demographic questionnaire and the EPOCH Measure of Adolescent Well-being (Kern et al., 2016). The EPOCH assessed five dimensions of well-being (engagement, perseverance, optimism, connectedness, and happiness).

EPOCH Measure of Adolescent Well-being

Item	Question
C1	When something good happens to me, I have people who I like to share the good news with.
P1	I finish whatever I begin.
O1	I am optimistic about my future.
H1	I feel happy.
E1	When I do an activity, I enjoy it so much that I lose track of time.
H2	I have a lot of fun.
E2	I get completely absorbed in what I am doing.
H3	I love life.
P2	I keep at my schoolwork until I am done with it.
C2	When I have a problem, I have someone who will be there for me.
E3	I get so involved in activities that I forget about everything else.
E4	When I am learning something new, I lose track of how much time has passed.
O2	In uncertain times, I expect the best.
C3	There are people in my life who really care about me.
O3	I think good things are going to happen to me.
C4	I have friends that I really care about.
P3	Once I make a plan to get something done, I stick to it.
O4	I believe that things will work out, no matter how difficult they seem.
P4	I am a hard worker.
H4	I am a cheerful person.

Data Analysis

Data were analyzed using repeated measures MANOVA on the before-and-after difference scores for the five subjective well-being subscales. All the statistical assumptions of the repeated measures MANOVA were verified and met.



Results

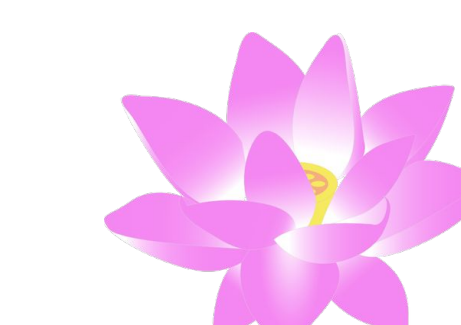
The overall findings of the repeated measures MANOVA were statistically significant, Roy's Largest Root = 1.07, $F(5, 78) = 16.64$, $p < .001$, partial $\eta^2 = .52$, indicating that there were significant differences in well-being dimensions collectively before and after listening to the online guided meditations. This researcher conducted a series of repeated measures ANOVAs to examine each dimension independently. All were statistically significant.

Repeated Measures ANOVAs for Well-being Dimensions Following Meditation Application

Dimensions	$F(1, 82)$	p	partial η^2
Engagement	31.31	<.001	.276
Perseverance	18.11	<.001	.181
Optimism	67.34	<.001	.451
Connectedness	12.61	<.001	.133
Happiness	19.91	<.001	.195

Limitations

There were several limitations to consider when interpreting these results. The limitations included recruitment, time, design, sampling, and measures. Recruitment was a significant limitation due to Covid-19. The initial goal was to collect data from 85 participants face-to-face in May 2020. However, due to schools moving to distance learning, it was challenging to get the word out. A total of six rounds took place to ensure statistical power. The school year ended in May, so the next round could not start until August. The students were not randomly assigned, the study occurred via Zoom with a single group for one week (Monday-Friday), and data collection occurred via self-reported measures.



Conclusions and Recommendations:

The findings add to the literature about the impact of mindfulness meditation on students' subjective well-being. Waters et al. (2015) suggest that students' well-being is part of schools' agendas and that many schools consider it equally as important as academic achievement. Although not all schools may provide mindfulness programs, they can provide opportunities for students to use mindfulness applications. Implementing a school-wide mindfulness application will help students and staff to share a common language about the practice. Allocating time and space for mindfulness will emphasize the message about the importance of wellness.



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