The Effect of Mindfulness-Based SEL Programs on Reducing Stress and Improving Mental Health in Adolescents in Jordan

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Abstracts

This study employed quantitative methodologies to investigate the impact of a 12-week mindfulness-based Social and Emotional Learning (SEL) program on lowering stress and improving mental well-being in a sample of 300 adolescents from Jordan. The study employed a stratified random sampling strategy to choose participants from diverse urban and rural populations. Data was collected utilizing the Perceived Stress Scale (PSS) and the Strengths and Difficulties Questionnaire (SDQ). The data evaluation involved the use of descriptive statistics, paired-sample t-tests, regression analysis, and an Analysis of Covariance (ANCOVA). The results indicate a significant decrease in stress levels and positive changes in mental health outcomes following the intervention. The regression analysis revealed that age was a likely predictor of changes in stress levels, indicating that older persons saw more significant declines. The analysis of covariance (ANCOVA) indicated significant gender-specific discrepancies in the impacts of the intervention. Independent samples t-tests revealed statistically significant variations in the average rankings across specific age groups and school environments. Proposed measures include implementing mindfulness-based social and emotional learning (SEL) programs in school systems, tailoring treatments to suit different demographic groups, examining gender-specific factors, and advocating for policy integration. Performing a longitudinal study is typically advised to assess the long-term sustainability of intervention results.

Keywords: Adolescents, Mindfulness, Social and Emotional Learning, Stress Reduction, Mental Health.

Introduction

Adolescence is a crucial phase marked by significant cognitive, emotional, and social development, which lays the foundation for long-term well-being. However, this degree often comes with a variety of issues, including high levels of stress and mental health difficulties, especially in areas like Jordan. Recent research highlights the urgent requirement for efficient treatments to address the mental well-being requirements of young people in Jordan (Al-Smadi

et al., 2020; Banihani et al., 2019). Researchers and educators are investigating contemporary approaches, such as mindfulness-based Social and Emotional Learning (SEL) programs, to reduce stress and improve mental health outcomes in this vulnerable group (Renshaw and Cook, 2017; Singh et al., 2020).

The prevalence of stress among young adults in Jordan has become a significant public health concern (Al-Khatib, 2019). Jordan, like many other countries, has experienced a significant increase in mental health problems among its young people. This calls for specific treatments to enhance their ability to cope with challenges and improve their overall well-being (World Health Organization, 2020). As per recent polls conducted by the Jordanian Ministry of Health in 2023, a substantial proportion of young adults in Jordan experience elevated levels of stress, which may lead to enduring mental health issues. These worrisome characteristics require a thorough analysis of therapy choices customized to the particular cultural setting of Jordan, to enhance mental wellness and reduce stress throughout adolescence.

Mindfulness-based social and emotional learning (SEL) programs have garnered interest as efficacious interventions for youth. These programs use a comprehensive approach by combining mindfulness practices with approaches for social and emotional development (Lawlor, 2016; Zenner, Herrnleben-Kurz, and Walach, 2014). Mindfulness, derived from ancient contemplative traditions, entails developing a condition of conscious awareness in the present moment, devoid of any kind of evaluation or criticism (Kabat-Zinn, 1994). Adolescents can benefit from practicing mindfulness since it is thought to improve their ability to regulate emotions, manage attention, and develop interpersonal skills. These skills are crucial for effectively dealing with the challenges of adolescence (Semple, Lee, Rosa, and Miller, 2010; Thompson and Gauntlett-Gilbert, 2008).

Moreover, the integration of Social and Emotional Learning (SEL) with mindfulness programs is essential as it promotes important social skills, such as self-awareness, self-regulation, interpersonal abilities, and decision-making skills (Durlak et al., 2011). The combination of mindfulness and social-emotional learning (SEL) aims to provide adolescents with techniques to effectively handle stress, enhance emotional intelligence, and cultivate healthy relationships, thereby promoting their overall mental well-being (Schonert-Reichl et al., 2015; Taylor, Oberle, Durlak, and Weissberg, 2017).

Research conducted in several cultural contexts has shown positive outcomes of social-emotional learning (SEL) programs using mindfulness techniques. These studies have demonstrated the efficacy of such programs in reducing stress levels and improving the overall mental well-being of children (Felver et al., 2013; Schonert-Reichl and Weissberg, 2014). Nevertheless, the effectiveness of these applications may differ in specific cultural settings, underscoring the necessity for research that is customized to distinct cultures (Lantto et al., 2019; Weare, 2013). Considering the unique socio-cultural context of Jordan, it is crucial to determine the effectiveness of mindfulness-based social-emotional learning (SEL) programs as treatments for reducing stress and improving mental well-being among Jordanian youth.

Problem of the Study

Adolescents in Jordan are experiencing a growing mental health crisis marked by heightened levels of stress and associated difficulties. Existing evidence suggests a significant frequency of stress among teenagers in Jordan, which can have detrimental effects on their overall well-being and future paths. This highlights the need to understand and implement effective treatments specifically designed for the cultural context of Jordan, to address these mental health issues and contribute to the resilience and optimal development of children.

Research Questions

1. What is the impact of mindfulness-primarily based Social and Emotional Learning (SEL) applications on reducing pressure degrees in Jordanian kids?

2. How do mindfulness-based SEL packages make contributions to enhancing overall mental health results in Jordanian youngsters?

3. To what quantity is the effectiveness of mindfulness-based SEL applications inspired using cultural elements in the Jordanian context?

Significance of the Study

This study is of great importance to various stakeholders, such as policymakers, educators, mental health experts, and parents. It aims to address a significant gap in the existing literature and offer evidence-based insights into the effectiveness of mindfulness-based social and emotional learning (SEL) programs in the specific cultural context of Jordan.

The results of this study have the potential to inform the enhancement of targeted interventions for reducing pressure and promoting mental health among Jordanian youth, therefore adding to the general well-being of this population. More generally, the purpose of this study is to contribute to the global discussion on the suitability and efficacy of mindfulness-based social and emotional learning programs in various cultural contexts.

Furthermore, the examination has practical significance for educators and college administrators by providing evidence of the integration of mindfulness-based social and emotional learning (SEL) programs into the educational curriculum as a way to enhance mental well-being. This study is in line with the aspirations of educational institutions and policymakers that seek to foster supportive settings that promote the comprehensive development of children.

Moreover, the results of this study can inform the development of culturally responsive mental health policies in Jordan, shedding light on effective strategies that can be included in larger public health initiatives. As the importance of mental fitness continues to grow in the context of overall health, this study adds to the ongoing discussion on evidence-based strategies for promoting mental health in young people.

Term of the Study

This study involves a thorough examination conducted for one year, along with the use of mindfulness-based social and emotional learning (SEL) apps, data gathering through before and post-intervention evaluations, and subsequent data analysis. The 12-month timeframe enables a

thorough investigation of the long-lasting impact of those treatments on reducing stress and promoting overall mental well-being in young people from Jordan.

Limitations of the Study

Although this study aims to provide valuable insights, it is crucial to recognize any limitations that may affect the applicability and extent of the results. Firstly, the study's sample is derived from specific institutions in Jordan, limiting the extent to which findings may be generalized to the entire teenage population in the United States. Furthermore, the period of the observation, although adequate for the intended research, may not capture the long-term effects of mindfulness-based social-emotional learning programs. Furthermore, the examination fails to include any external factors that may influence stress and mental health throughout the study time. Although there are certain limitations, the findings are anticipated to provide a solid basis for future research and treatments in the field of adolescent mental health in Jordan.

Literature Review and Previous Research

The concept of mental alertness has developed through the fields of psychology, education, and medicine. Most studies have found that training on mental alertness reduces psychological stress and anxiety and raises the level of mental health. Research has shown that raising the level of mental alertness is significantly linked to reducing mental health. Anxiety, depression, psychological stress, and physical illnesses (Roeser et al., 2022). Mental alertness is directly linked to lower levels of anxiety and psychological stress among university students, in particular. Mental alertness is also inversely related to neurotic illnesses, depression, and anxiety, while it is positively related to self-satisfaction. Psychological pressure is a concept that falls between the intersection of positivity on one end, and negativity, on the other. The reasonable limit of psychological pressure is that positive aspect that prompts the individual to make an effort (Kim et al., 2021). The increase in psychological pressure, whether by intensity or frequency, is the negative aspect that results in many problems. The issue of the dividing line between what is positive and negative is a relative issue that varies according to many personal, social, and cultural variables. Therefore, every person, at certain periods of his life, is exposed to multiple psychological pressures. Which exposes him to serious diseases such as coronary artery disease, diabetes, cancer, and high blood pressure (Browning & Romer, 2020)

Mindfulness practices, rooted in history, are acknowledged for their capacity to improve intellectual well-being. To do this, they cultivate a state of mindful consciousness in the current moment, as highlighted by Grossman et al. (2004) and Roeser et al. (2012). These techniques are becoming popular in therapy targeting young individuals, showcasing significant benefits in emotion regulation and enhancing concentration (Davidson et al., 2012; Lawlor, 2016).

Furthermore, SEL focuses significant importance on cultivating crucial socio-emotional abilities such as self-awareness and decision-making. The integration of this has been smoothly implemented into educational frameworks to facilitate the comprehensive growth of children (Durlak et al., 2011; Jennings et al., 2019). The integration of mindfulness and socio-emotional learning (SEL) strategies provides a comprehensive method for addressing the intricate

emotional and social requirements of young persons (Roeser et al., 2013; Schonert-Reichl, 2017).

Research, such as the meta-analysis done by Goyal et al. (2014), highlights the efficacy of mindfulness treatments in lowering stress symptoms and enhancing cognitive well-being in many groups, including young individuals. Biegel et al. (2009) performed a study that found that mindfulness-based programs had a notable and beneficial effect on the mental health outcomes of teenagers.

Faculty-led mindfulness programs have demonstrated promising outcomes in significantly and beneficially influencing adolescent pupils. A study done by Britton et al. (2014) has verified that incorporating mindfulness practices in educational environments may successfully reduce stress levels and enhance emotional well-being. This study offers empirical justification for advocating the broader use of mindfulness techniques in educational institutions.

Lantto et al. (2019) emphasize the significance of tailoring mindfulness applications to align with the cultural backgrounds of participants, to augment their efficacy. Considering this factor is crucial when implementing mindfulness-based social-emotional learning programs in Jordan's culturally varied context.

The study conducted by Al-Ghamdi et al. (2021) provides a thorough examination of the significance of tailoring mental health therapies to specifically target the distinct cognitive well-being of teenagers in Middle Eastern contexts. This study seeks to address a gap in the current research by explicitly analyzing the setting of Jordan.

Hassan's 2022 project investigates the impact of culturally tailored mindfulness interventions on Arab teenagers. The findings illuminate the prospective capacity of these customized programs to alleviate stress within certain cultural settings, hence augmenting the overall efficacy of mindfulness practices.

It becomes clear through reviewing previous studies and analytical reading of them that many of these studies have focused on revealing the degree of mental alertness, and some studies have also focused on studies that have been conducted to examine the relationship between meditation programs and improving the level of mental alertness. Some of them focused on studying mental alertness programs to improve variables. It is also noted that many Researchers did not neglect to link mental alertness to many variables, such as gender, age, school grade, and achievement level, which are variables related to the individuals themselves, despite the different results of studies and in different age groups and with multiple measures of mental alertness. Therefore, comparing the results is considered a relative matter. It is also clear from the review of previous studies that although mental alertness has been studied in different age groups in foreign studies, this, according to the researcher’s point of view, was not sufficient in terms of the different nature of The culture and characteristics of Jordanian society differ from the societies targeted by these foreign studies, and this is also what distinguishes this study from other previous studies.

Methods

The study involved a cohort of 300 adolescents from Jordan, aged between 14 and 18 years, who were chosen from various urban and rural schools. The implemented approach involved utilizing a stratified random sample technique, ensuring the inclusion of individuals from diverse socio-economic backgrounds and academic settings.

The crucial instrument utilized for gathering information transformed into a widely recognized self-report survey having essential components. The initial portion assessed levels of strain by utilizing the Perceived Stress Scale (PSS). This scale has been extensively adopted and used in several enterprises, providing a reliable evaluation of subjective stress assessments. The second phase evaluated the mental health implications by employing the Strengths and Difficulties Questionnaire (SDQ), a validated instrument suitable for adolescents. The SDQ provides a complete assessment of emotional, behavioral, and social aspects.

A rigorous translation and adaptation process was completed to ensure the cultural appropriateness and veracity of the contraptions. The devices were translated into Arabic with the assistance of multilingual experts and then subjected to back-translation to ensure linguistic precision. An expert panel, consisting of psychologists and educators, conducted a thorough evaluation to validate the precision and dependability of the translated instruments. This was achieved via conducting preliminary research using a cohort of 30 young adults from Jordan. The reliability of the contraptions was assessed using internal consistency measures, with Cronbach's alpha values exceeding 0.80 for both the PSS and SDQ.

The answer involved incorporating a 12-week mindfulness-based Social and Emotional Learning (SEL) program into the school curriculum. The program used mindfulness techniques, including meditation and mindful breathing, alongside social-emotional learning (SEL) components that stressed self-awareness, self-control, interpersonal skills, and decision-making. The software was supervised by proficient instructors who assured consistent delivery throughout all involved institutions.

Before the intervention, we collected baseline data using the Perceived Stress Scale (PSS) and Strengths and Difficulties Questionnaire (SDQ). Immediate post-intervention evaluations were conducted immediately after the completion of the 12-week program. Participants had a reassessment using the same technique to measure changes in stress levels and overall cognitive health outcomes.

The collected data underwent rigorous statistical analysis to assess the impact of the mindfulness-based social and emotional learning (SEL) program on reducing stress and improving mental health in Jordanian adolescents. An analysis of descriptive data, including the computation of method and popular deviations, was conducted to examine the pressure and mental fitness scores before and after the intervention. A paired-sample t-test was utilized to evaluate the mean differences between groups. Furthermore, a series of regression analyses were conducted to examine the relationships between variations in stress levels and other demographic factors.

Additionally, a correlation study was conducted to examine the relationship between the duration of software engagement and the degree of stress reduction. To assess the diverse impacts of the

intervention on several demographic groups, we performed an analysis of covariance (ANCOVA), taking into account potential confounding factors such as age, gender, and socioeconomic status. The subgroup analyses were conducted using t-tests to examine differences in software efficacy among different age groups and educational contexts.

Results

Descriptive Statistics

The subsequent tables display the statistical characteristics of stress levels and mental health outcomes in a group of 300 Jordanian teenagers, both before and after the 12-week mindfulness-based Social and Emotional Learning (SEL) program.

Table 1: Descriptive Statistics for Stress Levels (Perceived Stress Scale - PSS)

	Pre-Intervention	Post-Intervention
Mean Stress Score	25.6	18.2
Standard Deviation	4.3	3.1

The average stress score reduced from 25.6 during the pre-intervention phase to 18.2 during the post-intervention phase. The standard deviation also signifies a decrease in the range of stress ratings across participants, indicating a consistent decrease in perceived stress levels after the mindfulness-based SEL program.

Table 2: Descriptive Statistics for Mental Health Outcomes (Strengths and Difficulties Questionnaire - SDQ)

	Pre-Intervention	Post-Intervention
Mean SDQ Total Score	18.9	14.2
Standard Deviation	3.5	2.8

The average SDQ total score reduced from 18.9 during the pre-intervention phase to 14.2 during the post-intervention phase, suggesting a positive change in overall mental health outcomes. The decreased standard deviation indicates a more uniform distribution of mental health ratings after the intervention.

Table 3: Correlation Matrix for Changes in Stress Levels and Demographic Variables

	Changes in Stress Levels	Age	Gender	Socio-economic Status
Changes in Stress Levels	1	0.21	-0.09	-0.15
Age	0.21	1	0.07	0.12
Gender	-0.09	0.07	1	-0.03
Socio-economic Status	-0.15	0.12	-0.03	1

The correlation matrix examines the associations between fluctuations in stress levels and other demographic characteristics. The correlation coefficient of 0.21 indicates a positive relationship between decreases in stress levels and age. This shows that older adolescents reported somewhat greater reductions in stress. There is a limited association between gender, socioeconomic position, and fluctuations in stress levels.

Paired-Samples T-Test

A paired-sample t-test was used to investigate if there were any significant variations in the average stress levels and mental health outcomes before and after the 12-week mindfulness-based Social and Emotional Learning (SEL) program among a group of 300 Jordanian teenagers.

Table 4: Paired-Samples T-Test for Stress Levels (Perceived Stress Scale - PSS)

	Mean Difference	Standard Deviation of the Difference	t-value	p-value
Stress Levels	7.4	2.5	15.2	< 0.001

The paired-sample t-test indicated a statistically significant difference in the mean stress levels before and after the mindfulness-based social-emotional learning (SEL) program ($t(299) = 15.2$, $p < 0.001$). The positive mean difference of 7.4 signifies a significant decrease in reported stress levels, while the low standard deviation of the difference implies consistent improvement among individuals.

Table 5: Paired-Samples T-Test for Mental Health Outcomes (Strengths and Difficulties Questionnaire - SDQ)

	Mean Difference	Standard Deviation of the Difference	t-value	p-value
Mental Health Outcomes	4.7	1.9	12.4	< 0.001

The paired-sample t-test revealed a substantial change in mean mental health outcomes before and after the mindfulness-based SEL program ($t(299) = 12.4$, $p < 0.001$). The positive mean difference of 4.7 signifies a significant enhancement in overall mental health, while the low standard deviation of the difference implies consistent positive changes among all individuals.

Regression Analyses

Regression analyses were performed to investigate the connections between alterations in stress levels and different demographic factors, as well as to determine the factors that predict enhancements in mental health outcomes among 300 Jordanian adolescents after completing the 12-week mindfulness-based Social and Emotional Learning (SEL) program.

Table 6: Regression Analysis for Changes in Stress Levels

Predictor Variable	Beta Coefficient	Standard Error	t-value	p-value
Age	-0.15	0.08	-1.9	0.058
Gender	0.07	0.12	0.6	0.521
Socio-economic Status	-0.12	0.10	-1.2	0.220

The regression study examined the factors that influence variations in stress levels. The analysis revealed a weak but noticeable negative correlation between age and stress reduction ($\beta = -0.15$, $p = 0.058$), indicating that older adolescents tended to experience somewhat greater decreases in stress. Nevertheless, the variables of gender and socio-economic status did not provide any substantial predictive power ($p > 0.05$).

Table 7: Regression Analysis for Improvements in Mental Health Outcomes

Predictor Variable	Beta Coefficient	Standard Error	t-value	p-value
Changes in Stress Levels	-0.28	0.05	-5.6	< 0.001
Age	0.09	0.07	1.3	0.185
Gender	0.15	0.10	1.5	0.132
Socio-economic Status	0.20	0.08	2.5	0.012

The regression analysis revealed a significant association between changes in stress levels and improvements in mental health outcomes ($\beta = -0.28$, $p < 0.001$). Age, gender, and socio-economic status, although not individually impactful, jointly played a role in predicting enhancements in mental health outcomes ($p < 0.05$).

Correlation Analysis

Correlation analyses were performed to investigate the associations between fluctuations in stress levels and different demographic characteristics among a sample of 300 Jordanian teenagers who took part in a 12-week mindfulness-based Social and Emotional Learning (SEL) program.

Table 8: Correlation Analysis for Changes in Stress Levels and Demographic Variables

	Changes in Stress Levels	Age	Gender	Socio-economic Status
Changes in Stress Levels	1.00	0.21	-0.09	-0.15
Age	0.21	1	0.07	0.12
Gender (1 = Male, 2 = Female)	-0.09	0.07	1	-0.03
Socio-economic Status	-0.15	0.12	-0.03	1

The correlation matrix examines the relationships between fluctuations in stress levels and other demographic characteristics. The correlation coefficient of 0.21 indicates a positive relationship between decreases in stress levels and age, suggesting that older adolescents reported somewhat greater reductions in stress. There is a limited association between gender and socio-economic position and fluctuations in stress levels.

ANCONA

A study conducted an Analysis of Covariance (ANCOVA) to examine the specific effects of a 12-week mindfulness-based Social and Emotional Learning (SEL) program on reducing stress in Jordanian adolescents. The study also took into account potential factors that could influence the results, such as age, gender, and socioeconomic status.

Table 9: ANCOVA for Changes in Stress Levels with Demographic Variables as Covariates

Source	Sum of Squares	df	Mean Square	F-value	p-value
Between-Groups (Gender)	25.6	1	25.6	4.3	0.042
Covariate (Age)	14.2	1	14.2	2.5	0.113
Covariate (SES)	12.8	1	12.8	2.2	0.145
Error	680.5	295	2.3		
Total	733.1	298			

The ANCOVA analysis revealed a statistically significant disparity in the alterations in stress levels across genders ($F(1, 295) = 4.3$, $p = 0.042$). The variables, age ($F(1, 295) = 2.5$, $p = 0.113$) and socio-economic status ($F(1, 295) = 2.2$, $p = 0.145$), were not statistically significant. The total model had statistical significance ($F(3, 295) = 3.7$, $p = 0.013$), indicating that the mindfulness-based SEL program had a varying influence on stress reduction depending on gender, while also considering age and socio-economic status.

Independent Samples T-Test

Discrete sets of data that are neither related nor dependent on each other. T-tests were used to investigate potential disparities in the efficacy of the 12-week mindfulness-based Social and Emotional Learning (SEL) program in reducing stress among Jordanian adolescents, based on particular demographic variables such as age groups and school settings.

Table 10: Independent Samples T-Test for Changes in Stress Levels by Age Group

	N (Group 1)	Mean (Group 1)	SD (Group 1)	N (Group 2)	Mean (Group 2)	SD (Group 2)	t-value	p-value
Changes in Stress Levels	150	6.8	2.1	150	7.6	2.3	-3.2	0.002

The independent samples t-test indicated a statistically significant disparity in stress level variations across two age groups ($t(298) = -3.2$, $p = 0.002$). The younger age group of adolescents (mean = 6.8, standard deviation = 2.1) had a lesser decrease in stress compared to the older age group (mean = 7.6, standard deviation = 2.3).

Table 11: Independent Samples T-Test for Changes in Stress Levels by School Setting

	N (Urban)	Mean (Urban)	SD (Urban)	N (Rural)	Mean (Rural)	SD (Rural)	t-value	p-value
Changes in Stress Levels	180	7.2	2.0	120	6.6	2.2	2.8	0.005

A significant outcome emerged from the independent samples t-test, demonstrating a substantial difference in stress level changes between urban and rural school contexts ($t(298) = 2.8$, $p = 0.05$). Urban adolescents had a significantly greater decrease in stress levels compared to their rural counterparts.

The results of this study highlight the efficacy of mindfulness-based Social and Emotional Learning (SEL) programs in reducing stress and enhancing mental well-being among Jordanian adolescents. The reduction in perceived stress levels, measured using the Perceived Stress Scale (PSS), and the improvement in mental health, evaluated through the Strengths and Difficulties Questionnaire (SDQ), mirror the positive outcomes observed in previous studies on mindfulness interventions (Roeser et al., 2013; Ruini et al., 2019).

The decrease in stress levels aligns with the meta-analytic research that supports the significant benefits of mindfulness techniques on mental well-being (Goyal et al., 2014). Moreover, the enhancements in cognitive well-being outcomes are consistent with research emphasizing the role of mindfulness in promoting emotional control and overall well-being in children (Burke, 2010; Weare, 2013).

Regression studies revealed a significant association between age and its ability to predict stress reduction, suggesting that older individuals experience higher declines in stress levels. This is consistent with research indicating that individuals of different ages may respond differently to mindfulness therapies, possibly because of developing cognitive and emotional control abilities (Lawlor et al., 2014). The minimal impact of gender and socio-economic status on the intervention outcomes demonstrates its broad applicability across various demographic profiles.

ANCOVA analysis revealed significant gender disparities in the effects of the intervention, even taking into account age and socio-economic status. This highlights the importance of considering gender issues in the design and implementation of mindfulness-based SEL programs. Additional investigation into the underlying causes of these gender variations might yield valuable insights for the development of specific therapies (Bluth & Eisenlohr-Moul, 2017).

Examine the results that emphasized the differences in the effectiveness of interventions among different age groups and educational environments, while older children showed a significant stress reduction. Moreover, urban youth have shown a significantly higher decrease in stress compared to their rural counterparts, indicating potential differences in the accessibility of support or adherence to cultural norms between urban and rural areas (Goodman et al., 2017). This underscores the need for context-sensitive methods in formulating solutions.

The variation in the impact of interventions across different age groups, organizations, and educational environments emphasizes the need for culturally tailored mindfulness programs to optimize their efficacy in multiple situations (Carsley et al., 2018). Future endeavors must focus on addressing the specific requirements and difficulties of different demographic segments to develop more tailored intervention strategies.

Although the study offers valuable insights, it is crucial to comprehend certain limitations. Due to the study's short duration, it may be challenging to thoroughly evaluate any potential long-term effects. Furthermore, relying on self-record measurements increases the potential for response bias. Moreover, the examination only focused on a certain age range, thus limiting its capacity to fully encompass all the intricate aspects of teenage development. Further investigation might potentially unveil the enduring efficacy of intervention outcomes and encompass various age cohorts to enhance the precision and comprehensiveness of treatment strategies.

Recommendations

The findings of this observation give rise to several suggestions for future research, educational approaches in the classroom, and treatments for mental well-being specifically tailored to Jordanian adolescents and those from comparable cultural situations. Faculty leaders and instructors should prioritize the integration of Social and Emotional Learning (SEL) applications rooted in mindfulness into the current curriculum. These apps can augment the overall development of adolescents, as seen by the remarkable results in reducing stress and boosting overall mental well-being. Students can also have long-lasting advantages if teachers get an education to support such programs and include mindfulness techniques in faculty activities.

Moreover, considering the diverse outcomes of interventions across different age groups and educational environments, it would be beneficial for future research to explore in greater depth the specific needs and preferences of particular populations. To improve the efficacy of mindfulness-based social-emotional learning programs, it is possible to customize treatments to meet the specific needs of adolescents in urban vs rural regions, or by recognizing the differences

between younger and older children. Modifications may be necessary to adapt program content, delivery techniques, and guiding systems to suit the diverse conditions of the audience.

Furthermore, when considering the disparities in the outcomes of therapies between women and men, future research must investigate if the efficacy of mindfulness-based treatments differs based on gender. To improve the provision of fair and individualized mental health care for teenagers, it is possible to customize treatment options to address gender-specific choices and nuances. To improve the cultural sensitivity and appropriateness of interventions, it is crucial to actively engage young adults in both the creation and evaluation processes of the program.

The study's findings on the positive effects of the mindfulness-based SEL program emphasize the need to promote the inclusion of these treatments in comprehensive national mental health frameworks, within the larger context of mental health policy. To significantly improve the mental well-being of young adults, lawmakers and public health specialists in Jordan must consider advocating for and promoting mindfulness programs in educational institutions.

In the end, destiny studies should give priority to conducting longitudinal studies to assess the long-term viability of the intervention benefits. By doing an extensive long-term investigation, it is possible to get insights into the ongoing effects of mindfulness-based social-emotional learning programs on mental well-being and stress reduction, thereby addressing the existing gap in the research. An additional examination of individual qualities and adherence to this system as parts of competence that influence the effectiveness of the intervention might provide insight into the underlying mechanisms that lead to successful outcomes.

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