

The Mediator Role of Mindfulness Between Social Emotional Learning and Mental Health Problems**Bilinçli Farkındalığın Sosyal Duygusal Öğrenme ve Ruh Sağlığı Sorunları Arasındaki Aracılık Rolü**Furkan Kaşıkçı¹  Burak Can Korkmaz² ¹ Assistant Professor, Ankara University, Department of Educational Psychology, Ankara, Türkiye² Doctoral Student, Ankara University, Department of Educational Psychology, Ankara, Türkiye**Makale Bilgileri***Geliş Tarihi (Received Date)*

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Abstract: This article investigated how mindfulness mediates the association between social-emotional learning (SEL) and mental health problems. The participants were 470 university students at the department of classroom teaching, guidance and psychological counseling, preschool, and special education departments. 285 of them were females (60.6%) and 185 of them were males (39.4%), between the age of 18 to 23 (SD=1.29). Social Emotional Learning Scale for Adolescents, Conscientiousness Scale, and General Health Questionnaire were used for data collection. This study employed Hayes's regression-based Model 4 mediation analysis to test how mindfulness mediates the relationship between SEL and mental health problems. The study found that SEL significantly predicted fewer mental health problems. Moreover, this study suggested that mindfulness plays a mediating role between SEL and mental health problems. Taken all together, the study revealed significant direct and indirect effects of SEL on mental health problems. According to findings, incorporating SEL and mindfulness into psychosocial support programs for university students can be effective in alleviating mental health problems. This study highlighted the protective role of mindfulness-based SEL practices on mental health.

Keywords: Mental health problems, mindfulness, social emotional learning, SEL, mediation

Öz: Bu çalışmada, sosyal duygusal öğrenme (SDÖ) ile ruh sağlığı sorunları arasındaki ilişkide bilinçli farkındalığın aracılık rolünün incelenmesi amaçlanmıştır. Araştırmaya 285 kadın (%60,6) ve 185 erkek (%39,4) olmak üzere toplam 470 üniversite öğrencisi katılmıştır. Okul öncesi, rehberlik ve psikolojik danışmanlık, özel eğitim ve sınıf öğretmenliği bölümlerinde öğrenim gören katılımcıların yaşları 18 ile 23 arasındadır (SD=1,29). Çalışmanın veri toplama aşamasında Ergenler İçin Sosyal Duygusal Öğrenme Ölçeği, Bilinçli Farkındalık Ölçeği ve Genel Sağlık Anketi uygulanmıştır. SDÖ ile ruh sağlığı sorunları arasında bilinçli farkındalığın aracılık rolünü test etmek amacıyla Hayes'in regresyon tabanlı Model 4 aracılık analizi kullanılmıştır. Bu çalışma SDÖ'nün üniversite öğrencilerinde ruh sağlığı sorunlarını azalttığını ileri sürmektedir. Dahası, bilinçli farkındalığın SDÖ ile ruh sağlığı sorunları arasındaki aracılık rolü doğrulanmıştır. Tüm bunlar bir arada ele alındığında, bu çalışma SDÖ'nün ruh sağlığı sorunları üzerinde anlamlı doğrudan ve dolaylı etkileri olduğunu ortaya koymaktadır. Bu bulgulara göre SDÖ ve bilinçli farkındalığı üniversite öğrencileri için psikososyal destek programlarına dahil etmek, ruh sağlığı sorunlarını hafifletmede etkili olabilir. Bu çalışma kapsamında bilinçli farkındalık temelli SDÖ uygulamalarının ruh sağlığı üzerindeki koruyucu rolü vurgulanmıştır.

Anahtar Kelimeler: Ruh sağlığı sorunları, bilinçli farkındalık, sosyal duygusal öğrenme, SDÖ, aracılıkKaşıkçı, F. & Korkmaz, B. C. (2025). The mediator role of mindfulness between social emotional learning and mental health problems. *Erzincan University Journal of Education Faculty*, 27(1), 117-125. <https://doi.org/10.17556/erziefd.1582370>**Introduction**

Rapid technological changes substantially influence numerous fields, including education. Critical thinking, collaboration, creativity, and communication have become increasingly important for students in the 21st century (Stanikzai, 2023). In this sense, education systems have begun to consider the significance of social and emotional skills instead of solely focusing on academic success. In other words, today's changing conditions necessitate social and emotional skills, such as self-awareness, relationship skills, and responsible decision-making, as well as academic skills, such as reading and writing. In this regard, Barlett (2019) suggests that social-emotional skills provide effective coping mechanisms for students to overcome stress. To gain these skills, social-emotional learning (SEL) enables them to effectively understand and manage their lives according to social and emotional aspects (Basu & Mermillod, 2011). Thanks to SEL, individuals are equipped with essential skills: self-awareness, self-management, social awareness, relationship skills, and responsible decision-making (Collaborative for Academic, 2023; LaBelle, 2023). There is a consensus in the literature regarding the positive impact of SEL on mental health problems through enhancing the adaptation of students (Kaşıkçı & Öğülmüş, 2024; Turki et al., 2018; Vassilopoulos

et al., 2018). Thus, addressing SEL can put forward valuable implications when investigating the mental health problems of students.

The prevalence of mental health problems has dramatically increased worldwide. High prevalence rates of depression, anxiety, and stress are at an alarming issue for the countries (World Health Organization, 2024). These mental health problems can be destructive to the daily functioning of individuals (Khune et al., 2023). Unfortunately, mental health problems are more common after crises like the COVID-19 pandemic (Meherali et al., 2021). For example, currently, the rate of adults exposed to mental health problems is 20% in the United States (National Institute of Mental Health, 2024). Individuals experiencing mental health problems are at risk of deterioration of social relationships and daily functioning, so their overall well-being decreases (Barbieri, 2021; Thoits, 2011). At this point, the existing literature demonstrates the positive impact of SEL on mental health as a protective factor (Belaire et al., 2024; Williamson, 2021). This argument is confirmed by the observation of reduced levels of depression and anxiety and improved psychological resilience in individuals after SEL programs' implementations (Meyers et al., 2019; Singh et al., 2019). From this point of view, SEL is a critical educational approach to enhancing individual mental health.

Recently, SEL has begun to be considered in conjunction with mindfulness practices to develop effective strategies for individuals' psychological well-being (Cheung, 2023; Henriksen & Gruber, 2024; Moreno-Gómez & Cejudo, 2019). That is why exploring the role of mindfulness in the relationship between SEL and mental health problems is a valuable effort to understand underlying mechanisms. Mindfulness is defined as a skill that involves present-moment awareness and acknowledging one's thoughts and emotions without judgment (Sezer et al., 2022). Numerous studies have found beneficial effects of mindfulness on mental health (Canby et al., 2015; Tomlinson et al., 2018). Since mindfulness is effective at boosting individuals' coping capacity, it is considered a valuable construct in preventing mental health problems (Li & Bressington, 2019; Strohmaier, 2020). Additionally, mindfulness enables individuals strengthening their emotional resilience (Wang et al., 2016). Therefore, mindfulness should be considered to alleviate mental health problems.

In Türkiye, 20% of the population experiences mental health issues that require treatment, with mental disorders primarily arising during adolescence or young adulthood (Karabulut et al., 2024). From this perspective, university students in Türkiye can be considered a risky group for the emergence of mental health problems. Similar to Türkiye, university students around the world face significant transitions, such as changing environments, leaving family and friends, and making new living arrangements, which can increase their risk of mental health problems (Cage et al., 2021; Kaşıkçı, 2020; Kassie, 2023; Porru et al., 2022). The fact that university students are a risky group reveals the need for preventive and supportive interventions (Sheldon et al., 2021). In this context, a study by Kassie (2023) highlights that although the United Arab Emirates supports the development of social-emotional skills due to the awareness of increasing mental health problems in higher education institutions, sufficient gains have not been achieved. At this point, Kassie suggests the effectiveness of social-emotional skills when they are addressed together with mindfulness as a solution to increasing mental health problems in higher education. From this point of view, considering social-emotional skills together with mindfulness in the Turkish sample may reveal important implications for Turkish higher education institutions.

In today's university life, where grades are a priority, students who aim to study more use negative coping strategies such as less sleep and addictive behavior. This leads to inadequate social and emotional adaptation and an increased risk of mental health problems (Nair & Otaki, 2021). Furthermore, numerous studies found high future anxiety among university students (Aşantuğrul, 2024; Gülirmak-Güler & Albayrak-Günday, 2024; Koçeroğlu et al., 2024). Thus, inappropriate coping strategies may continue to rise in university students whose social-emotional skills are not supported with additional strategies. An example of this is that programs that support social-emotional skills alone are insufficient to prevent mental health problems (Kassie, 2023). At this point, mindfulness can be used as a source of self-regulated acts (Rehman et al., 2023) and a potential prevention strategy for mental health problems by effectively harnessing the social-emotional skills of university students. Currently, universities demand intervention and prevention strategies to cope with mental health problems (Bantjes et al., 2022; Gaiotto et al., 2022; Priestley et al., 2022). The need for cost-effective strategies is great in response to today's increasing need for

university-campus mental health services (Seppälä et al., 2020). Therefore, mindfulness can play a critical role in meeting this need with intervention and prevention strategies. That is why this study seeks the mediating role of mindfulness in the relationship between social-emotional learning and mental health problems among Turkish university students.

When SEL and mindfulness combine, individuals have more potential to be involved in positive interpersonal interactions along with high emotional regulation (Lawlor, 2016). After SEL helps to equip individuals with necessary emotional and social competencies, mindfulness-based programs are more effective at boosting individuals' self-awareness and emotional resilience (Mihic et al., 2020; Roudebush et al., 2024). Mental health problems need to be addressed through profound strategies. At this point, SEL and mindfulness together increase individuals' coping capacity and well-being, so their combination is helpful for the prevention of mental health problems (de Carvalho et al., 2017; Maloney et al., 2016).

The Mediating Role of Mindfulness

Mindfulness is crucial to assisting individuals in gaining SEL through increased emotional resilience and better coping mechanisms (Sandilos et al., 2023). In addition, current literature highlights the effectiveness of mindfulness on mental health problems (Bravo et al., 2018; Koç & Uzun, 2024). Because individuals' resilience is strengthened with mindfulness, their mental health problems can decrease. This suggests mindfulness's protective role on mental health. That is why this study seeks to identify the mediating role of mindfulness in the association between SEL and mental health problems.

This study depends on Self-Determination Theory (SDT) claiming that meeting psychological needs through mindfulness and SEL leads to fewer mental health problems. According to this theory, meeting individuals' psychological needs, specifically autonomy, competence, and relatedness, boosts intrinsic motivation, promotes emotional regulation, and improves overall well-being (Ryan & Deci, 2000). Because mindfulness supports individuals' ability to recognize and accept emotional experiences, it functions as an effective tool for fulfilling the fundamental psychological needs proposed by SDT (Schultz & Ryan, 2015). When individuals gain a profound awareness of internal processes through mindfulness, it also increases their sense of autonomy. Considering the perspective of SDT, individuals can internalize SEL skills through mindfulness practices. Hence, they utilize SEL skills more effectively. In this way, individuals apply the emotional and social skills acquired through SEL to their daily lives in a more meaningful and motivation-driven way (Ng, 2023; Schultz & Ryan, 2015). In conclusion, existing research demonstrates that incorporating mindfulness into the SEL process is an efficacious approach to safeguarding mental health. This strategy can help individuals manage a healthy and balanced life.

Purpose of the Present Study

Previous research has indicated that SEL contributes to psychological well-being and prevents mental health problems (LaBelle, 2023; Mitchell et al., 2024; Thierry et al., 2022). Substantial research has also studied how SEL programs reduce mental health problems while boosting resilience (Baughman et al., 2020; Lang et al., 2020). Nonetheless, the mechanisms by which SEL influences mental health are not

well-established. The current findings argue that mindfulness increases emotional resilience with a mediating role in reaching optimal mental health, and it assists in the positive impact of SEL on mental health (Nagpal & Radliff, 2024). Additionally, various populations have been selected for research regarding the relationship between mindfulness and SEL, particularly in the context of mental health problems (de Carvalho et al., 2017). Nevertheless, most studies have chosen to focus on children or individuals with traumatic experiences. This reveals that there is a dearth of research seeking the protective effect of mindfulness on those who are in emerging adulthood, especially university students. Thus, there is a need for further research involving university students on whether mindfulness mediates the relationship between SEL and mental health problems. Previous studies have shown that mindfulness boosts coping skills during stress suggesting the positive effect of mindfulness on mental health (Nagpal & Radliff, 2024). Thus, this study aims to examine whether mindfulness mediates the relationship between SEL and mental health problems.

Method

Participants

This study comprised 470 university students. After analyzing the gender distribution of the study's participants, it was found that 285 (60.6%) were female and 185 (39.4%) were male. The age distribution of this study is as follows: 14.3% were 18 years old, 25.5% were 19 years old, 26.8% were 20 years old, 16% were 21 years old, and 17.4% were 22 years old or older (standard deviation = 1.29). The participant's departments were special education teaching, psychological counseling and guidance, preschool teaching, and classroom teaching, and their distributions were respectively 19.8%, 32.1%, 23.4%, and 24.7%.

Measure

Social Emotional Learning Scale

This scale was used to evaluate the students' social and emotional learning competencies in this study. Totan (2018) developed the scale by considering the standards put forward by the Collaborative for Academic, Social, and Emotional Learning (CASEL). The scale consists of a total of 23 items categorized into five sub-dimensions. These are self-awareness, social awareness, self-management, responsible decision-making, and relationship skills. Also, there is a shorter version of the scale consisting of five items. According to the exploratory factor analysis (EFA), the item factor loadings are between .26 and .81. As to the Confirmatory Factor Analysis (CFA), the scale shows an optimal fit ($\chi^2/sd = 3.30$; AGFI = .97; GFI = .99; RMR = .003 and SRMR = .003). Cronbach's alpha internal consistency coefficient for the reliability of the scale was calculated and a value of .92 was obtained for the entire scale. The internal consistency coefficients for the sub-dimensions, self-awareness, social awareness, self-management, responsible decision-making, and relationship skills, were calculated as .73, .70, .73, .83, .74, .79. The current study utilized the long version of the scale and the Cronbach's alpha coefficient was found to be .84.

Mindfulness Attention Awareness Scale

The scale was used to evaluate students' awareness levels during the study. Brown and Ryan (2003) originally developed

this scale. Adaptation of the scale to the Turkish culture was conducted by Özyeşil et al. (2011). This scale includes a total of 15 items. In alignment with its original form, the scale shows a unidimensional structure in the adaptation to Turkish culture. An exploratory factor analysis was used within the adaptation process. The fit indices of the scale show that the values got are within acceptable limits ($\chi^2/sd=2.08$; CFI=.93; AGFI= .91; TLI = .94; RMSEA=.06; SRMR= .06). As a result, the item factor loadings were determined between .49 and .81. Cronbach Alpha internal consistency coefficient was calculated as .80. As to the test-retest correlation, it was found to be .86. In this study, the scale's Cronbach alpha coefficient was .89.

General Health Survey (GHS)

Goldberg and Williams (1988) originally developed the scale. Kılıç (1996) adapted it to Turkish culture. This scale is appropriate for healthy individuals and primary healthcare applicants. It consists of 12 items. These items aim to evaluate individuals' psychological symptoms. A four-point Likert scale is used to score each item. Getting a high score on the scale shows the need for psychiatric assessment. The reliability coefficient of the scale was found to be .78 for the adaptation study. The test-retest correlation was found to be .84. In this study, the scale's Cronbach alpha coefficient was .88.

Data Collection

During the data collection process of the study, data was collected online after obtaining ethical research permission. Following this, a data collection link was sent to student advisors, and they shared it with their students in the classes they were responsible for or via WhatsApp groups. In addition, researchers sent the data collection link to university students individually. In the first stage of the data collection process, an informed consent form link was added to the students asking whether they would approve their voluntary participation in the study. Accordingly, the online data collection process was completed within ten days. The researchers reached out to the participants between 20/05/2023 and 30/05/2023.

Data Analysis

This research aimed to investigate the mediation role of mindfulness (M) in the association between social-emotional learning (X) and mental health problems (Y). In data analysis, missing data was first evaluated. In this context, data of 23 participants were removed from the data set. In the next step, normality analyzes were performed. For this purpose, kurtosis and skewness were calculated. In addition, to test whether the answers given by the participants contained extreme values, the z score was calculated and the ± 3 score range was taken as reference. In the last stage, Pearson product moment correlation was performed to test the relationship between the variables. Confidence intervals for correlations are calculated as 99%. After testing the relationship between the variables, the mediating role of mindfulness between SEL and mental health problems was examined.

The regression-based mediation analysis (Model 4) posited by Hayes (2018) was used to test the proposed mediation effect. MacKinnon et al. (2004) suggest that the mediation effect is confirmed when the 95% confidence interval (CI) does not include a zero value. In this study, the significance of indirect effects was investigated using the resampling bootstrapping method proposed by Preacher and Hayes (2008). The bootstrapping process was utilized to test the

direct and indirect effects in the established model, whereby a new data set was created by randomly selecting *n* number of data obtained with the bootstrapping method. The analyses were then performed on the newly created data set. In this particular research process, the number *n* was determined as 5000, and the bootstrap coefficient and confidence intervals were calculated with resampling. To ascertain the significance of the direct and indirect effects established in the model, it is necessary that the lower and upper limits of the 95% confidence intervals of the calculated bootstrap coefficient do not contain zero. In this study, the mediation analysis was performed using the PROCESS macro (Hayes, 2018) in the SPSS v30 program.

Ethics Declaration

This study was conducted with the approval decision of the Atatürk University Educational Sciences Ethics Committee (Issue No. 02/21) dated 14/02/2023.

Results

Preliminary Analysis

In the study, kurtosis and skewness values were calculated within the scope of normality analysis. As can be seen in Table 1, the skewness values of the SEL, mental health problems, and mindfulness variables were .015, .046, and .128, respectively, while the kurtosis values were -.404, -.053, and -.027, respectively. According to the ±2 criterion put forward

by George and Mallery (2019), the skewness and kurtosis values of the variables in this study fall within the specified range, which indicates that the variables are normally distributed.

The correlation analysis results demonstrate a negative association between SEL and mental health problems ($r = -.379, p < .01$) and a positive correlation with mindfulness ($r = .353, p < .01$). Moreover, a negative correlation was found between mental health problems and mindfulness ($r = -.425, p < .01$).

Mediation Analysis

The analysis results revealed a statistically significant direct effect of SEL on mental health problems ($\beta = -.38, p < .001$). Moreover, SEL was determined to positively and significantly impact mindfulness. Conversely, mindfulness showed a significant negative effect on mental health problems ($\beta = -.33, p < .001$). The combined effects of SEL and mindfulness accounted for 24% of the variance in mental health problems, as shown in Table 2 and Figure 1. The results prove the mediating role of mindfulness in the association between SEL and mental health problems. Additionally, the indirect effects of SEL on mental health problems through mindfulness were found to be statistically significant. As shown in Table 3, the total direct and indirect effects, along with the 95% bias-adjusted confidence intervals, predicted mental health problems.

Table 1. Correlation and descriptive results

	M	SD	Skew.	Kurt.	SEL	Mind.	Ment.
1.Social Emotional Learning	89.71	7.62	.01	-.40	-	.35**	-.37**
2.Mindfulness	73.28	5.29	.05	-.05	-	-	-.42**
3.Mental Health Problems	24.11	3.04	.13	-.03	-	-	-

**p<.01, SEL= Social Emotional Learning, Mind.= Mindfulness, Ment.= Mental Health Problems

Table 2. Coefficients for the mediation model

	Consequent				Y (Mental Health Problems)			
	M (Mindfulness)							
	Coeff.	SE	t	P	Coeff.	SE	t	P
Constant	51.20	2.70	18.98	<.001	47.49	1.93	24.62	<.001
X (SEL)	.24	.03	8.16	<.001	-.10	.02	-6.07	<.001
M	-	-	-	-	.19	.02	-7.71	<.001
	$R^2 = .12$				$R^2 = .24$			
	$F = 66.60, p < .001$				$F = 73.83, p < .001$			

The coefficients in the table are unstandardized.

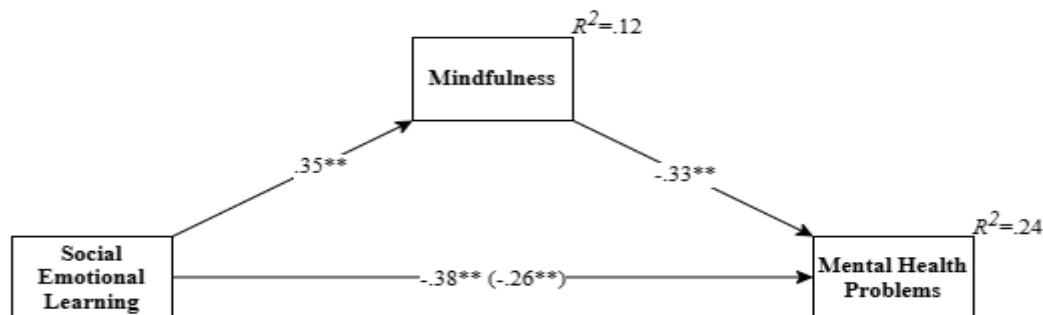


Figure 1. The mediation model

Table 3. Obtained unstandardized direct and indirect effects

	Effect	SE	BootLLCI	BootULCI
Total indirect effect	-.15	.02	-.18	-.12
Direct effect	-.10	.02	-.14	-.07
Indirect effect	-.05	.01	-.06	-.03

Discussion

The results revealed that SEL and mindfulness significantly reduce mental health problems among university students. According to the findings, SEL positively influences university students' social and emotional skills. Thanks to the improvements in SEL skills, university students' mental health problems, including stress, anxiety, and depression, are reduced. The results of this study are aligned with the findings of the literature. For example, Durlak et al. (2011) highlighted the effectiveness of SEL programs in enhancing students' emotional adjustment and improving their overall mental health, as this study suggested. Also, Greenberg et al. (2017) emphasized SEL's contribution to social cohesion and psychological well-being, as this study found. In order to prevent mental health problems, a person needs to be aware of their symptoms with their self-awareness and to perceive how these symptoms differ from the general population with their social awareness. In this way, university students can increase their behaviors of seeking help, such as applying to mental health services, by noticing the deterioration in their daily functioning. In addition, they can distance themselves from mental health problems by moving away from behaviors that disrupt their daily functioning and towards life activities that regulate these functions. Self-regulation is essential in this process. Consequently, university students' social-emotional skills are crucial for addressing their awareness and regulation needs.

This study revealed that mindfulness mediates the association between SEL and mental health problems. In this sense, mindfulness mitigates the mental health problems of university students by improving their capacity to manage their current emotional states. This study has proven the effectiveness of mindfulness in reducing mental health problems, as previous research highlighted (Sharma & Kumra, 2022; Song & Lindquist, 2015). This can be attributed to the regulation of the internal experiences of university students through mindfulness. After the regulation of internal experiences, coping with stress can be facilitated. Since mindfulness provides a greater understanding and acceptance of oneself, emotional regulation capacity is enhanced with mindfulness practices (Guendelman et al., 2017). Mindfulness equips students to manage their internal experiences so that mental health problems tend to decrease. Thus, mindfulness functions as a mediator between SEL and mental health problems.

The Self-Determination Theory (SDT) provides a significant theoretical framework for this study. According to this theory, motivation and well-being increase when basic psychological needs are met (Jeno et al., 2019; Milyavskaya & Koestner, 2011). These needs require SEL skills such as self-management and relationship skills. When SEL provides these skills to university students, mindfulness facilitates the improvement of SEL skills by boosting students' emotional regulation and self-awareness. In this way, fulfilling psychological needs can contribute to the alleviation of mental health problems of university students. While social-emotional learning skills are important for university students, they may not be effective if not applied correctly, particularly without strategies that clarify thoughts and actions in the present moment. In this case, since anxiety about their future and grades is common among university students (Aşantugrul, 2024; Gülirmak-Güler & Albayrak-Günday, 2024; Koçeroğlu et al., 2024; Nair & Otaki, 2021), they may find themselves

distant from relationships and disoriented, leading to unmet psychological needs. Due to the fast-changing and highly demanding university environment (Cage et al., 2021; Kassie, 2023; Porru et al., 2022; Sheldon et al., 2021), university students need to be in the present moment with the awareness provided by mindfulness instead of focusing on the past with regret or the future with anxiety. In this way, it may be easier and more effective to meet their psychological needs by using their social and emotional skills. Internalization of SEL skills through mindfulness provides more opportunities for university students in order to develop their emotional regulation and self-awareness. Even if mindfulness is inadequate to prevent mental health problems solely when SEL skills are internalized by means of mindfulness, university students' psychological needs are effectively met, so this could positively affect mental health problems. Emotionally balanced university students have healthier coping strategies against mental health problems (Schultz & Ryan, 2015). Taken all together, fulfilled psychological needs may explain the mediating role of mindfulness in the relationship between SEL and mental health problems.

This study demonstrates that mindfulness equips university students with higher self-awareness and emotional regulation abilities to cope with mental health problems. SEL process is more powerful with mindfulness against mental health problems. Emotional balance may emerge with mindfulness, but university students may manage their inner experiences faster when SEL skills are combined with mindfulness. These results are in parallel with the findings of Bravo et al. (2018), suggesting the protective role of mindfulness against mental health problems owing to individuals strengthened coping abilities. The positive effect of mindfulness on mental health was also in alignment with the study of Enkema et al. (2020). Considering existing research, there is a consensus on the protective role of mindfulness. It is crucial to note that this study is novel in terms of its aim and participant group. In conclusion, SEL positively affects mental health problems through mindfulness among university students.

On the other hand, the low explained variance shows the complex nature of mental health problems and that they are affected by many factors beyond just the level of awareness. In this context, it can be associated with the fact that variables such as traumatic history, family support, and socioeconomic status, which can affect mental health problems in the literature, are not included in the model. These findings emphasize that not only the level of awareness but also many other psychosocial factors are important in determining mental health problems. In addition, factors such as the subjective nature of general health questionnaires and the need for social acceptance may increase the risk of measurement error and reduce the explained variance. In addition, the findings obtained from this study can be evaluated as understanding prevention strategies among university students requires more than just mindfulness practices. Future studies should consider other important predictors of mental health problems. Although the explained variance is low, the statistically significant variables in this study may still explain the change in mental health problems among university students.

Applications and Recommendations

The study results indicate that SEL and mindfulness should be addressed together when practitioners and researchers handle the mental health problems of university students. More importantly, therapeutic interventions and psychoeducation

programs can consider SEL and mindfulness practices in order to strengthen university students against mental health problems. Programs including SEL and mindfulness can be helpful for coping with stress so that mental health problems may be alleviated effectively (Do & Giang, 2024; Henriksen & Gruber, 2024). This study found the positive effect of mindfulness with SEL on mental health problems thanks to the internalization of SEL skills by university students. Thus, educational settings should put more emphasis on SEL and mindfulness practices if they target students' mental well-being.

Mental health problems are among the alarming issues university students face today (Cage et al., 2021; Kassie, 2023; Porru et al., 2022). Unfortunately, increasing mental health issues lead to the deterioration of social relationships and daily functioning (Barbieri, 2021; Khune et al., 2023; Thoits, 2011). This can result in more significant problems within the university setting, where students manage various social interactions outside their families. Since transitions are evident and abundant in the first year of university, it may be beneficial for the orientation activities conducted for university students in the first year to be structured around the prevention of mental health problems and to include mindfulness and SEL skills. It is not enough for the academic advisor assigned to each student at the university to have a good command of the student's academic side because university students whose daily functionality is impaired are likely to have negative academic outcomes. In this sense, it is important for academic advisors to exhibit a guiding and supportive attitude to support the daily functioning of university students to improve their academic outcomes and general well-being. Numerous studies have found that university students use negative coping strategies to cope with anxiety about the future and grades (Aşantuğrul, 2024; Gülirmak-Güler & Albayrak-Günday, 2024; Koçeroğlu et al., 2024; Nair & Otaki, 2021). In order for this situation not to lead to mental health problems, it may be helpful for the academic advisor to be supportive and guiding. In cases where family, friends, and social support are not available, one of the few sources of help for university students is their academic advisor. A structured orientation program focused on mindfulness and SEL skills followed by a supportive and guiding academic advisor may be effective in reducing mental health problems in university students. Within the scope of preventive measures, it may be useful to adapt mindfulness and SEL skills to psychoeducational programs for university students and use them in therapeutic interventions. Thus, it is an important need for higher education institutions to start planning activities focused on mindfulness and SEL skills for university students from their first year to prevent mental health problems.

Limitations and Suggestions

The current study has a few limitations that should be taken into account. Because the study has a cross-sectional design, we are not aware of the longitudinal relationships of the variables. That is why future research seeking SEL, mindfulness, and mental health problems should employ a longitudinal design in order to have an understanding of the change in time. The current study collected data from university students through self-report measures. Future studies could benefit from using different data collection methods in order to obtain more reliable findings. Since this study was conducted with university students in Turkish culture, further research on different age groups and cultures

is needed to generalize findings. Therefore, future studies should consider different age groups and cultural contexts when investigating the impact of SEL and mindfulness on mental health.

Author Contributions

The authors contributed equally to the editing of the article and the development of the final manuscript.

Ethical Declaration

This study was conducted with the approval decision of the Atatürk University Educational Sciences Ethics Committee (Issue No. 02/21) dated 14/02/2023.

Conflict of Interest

The authors declare that there is no conflict of interest with any institution or person within the scope of the study.

References

- Aşantuğrul, N. (2024). Üniversite öğrencilerinin gelecek kaygıları üzerine nitel bir araştırma: Üniversite öğrencilerinde gelecek kaygısı. *Ases Ulusal Sosyal Bilimler Dergisi*, 4(1), 62-68. <https://doi.org/10.5281/zenodo.12532649>
- Bantjes, J., Hunt, X., & Stein, D. J. (2022). Public health approaches to promoting university students' mental health: A global perspective. *Current Psychiatry Reports*, 24(12), 809-818. <https://doi.org/10.1007/s11920-022-01387-4>
- Barbieri, P. N. (2021). Healthy by Association: The relationship between social participation and self-rated physical and psychological health. *Health & Social Care in the Community*, 29(6), 1925-1935. <https://doi.org/10.1111/hsc.13306>
- Bartlett, J. (2019). Social-emotional learning, health education best practices, and skills-based health. *Journal of Physical Education Recreation and Dance*, 90(2), 58-60. <https://doi.org/10.1080/07303084.2019.1548185>
- Basu, A., & Mermillod, M. (2011). Emotional intelligence and social-emotional learning: An overview. *Online Submission*, 1(3), 182-185. <https://files.eric.ed.gov/fulltext/ED535684.pdf>
- Baughman, N., Prescott, S. L., & Rooney, R. (2020). The prevention of anxiety and depression in early childhood. *Frontiers in Psychology*, 11, 517896. <https://doi.org/10.3389/fpsyg.2020.517896>
- Belaire, E., Mualla, F., Ball, L., Ma, I., Berkey, D., & Chen, W. (2024). Relationship of social-emotional learning, resilience, psychological well-being, and depressive symptoms with physical activity in school-aged children. *Children*, 11(8), 1032. <https://doi.org/10.3390/children11081032>
- Bravo, A. J., Pearson, M. R., & Kelley, M. L. (2018). Mindfulness and psychological health outcomes: A latent profile analysis among military personnel and college students. *Mindfulness*, 9(1), 258-270. <https://doi.org/10.1007/s12671-017-0771-5>
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822. <https://psycnet.apa.org/record/2003-02410-012>
- Cage, E., Jones, E., Ryan, G., Hughes, G., & Spanner, L. (2021). Student mental health and transitions into, through

- and out of university: Student and staff perspectives. *Journal of Further and Higher Education*, 45(8), 1076-1089.
- Canby, N. K., Cameron, I. M., Calhoun, A. T., & Buchanan, G. M. (2015). A brief mindfulness intervention for healthy college students and its effects on psychological distress, self-control, meta-mood, and subjective vitality. *Mindfulness*, 6, 1071-1081. <https://doi.org/10.1007/s12671-014-0356-5>
- Cheung, R. Y. M. (2023). Mindfulness for preschool and kindergarten: The OpenMind program to boost social-emotional learning and classroom engagement. *Mindfulness*, 14(1), 230-232. <https://doi.org/10.1007/s12671-022-02037-9>
- Collaborative for Academic, S., and Emotional Learning (CASEL). (2023). *What Is the CASEL Framework?*. <https://casel.org/fundamentals-of-sel/what-is-the-casel-framework/>
- de Carvalho, J. S., Pinto, A. M., & Marôco, J. (2017). Results of a mindfulness-based social-emotional learning program on portuguese elementary students and teachers: A quasi-experimental study. *Mindfulness*, 8(2), 337-350. <https://doi.org/10.1007/s12671-016-0603-z>
- Do, T. T., & Giang, T. V. (2024). Mindfulness-based social-emotional learning program: Strengths and limitations in Vietnamese school-based mindfulness practice. *Heliyon*, 10(12). https://doi.org/ARTN_e32977
- Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: a meta-analysis of school-based universal interventions. *Child Development*, 82(1), 405-432. <https://doi.org/https://doi.org/10.1111/j.1467-8624.2010.01564.x>
- Enkema, M. C., McClain, L., Bird, E. R., Halvorson, M. A., & Larimer, M. E. (2020). Associations between mindfulness and mental health outcomes: A systematic review of ecological momentary assessment research. *Mindfulness*, 11, 2455-2469. <https://doi.org/10.1007/s12671-020-01442-2>
- Gaiotto, E. M. G., Trapé, C. A., Campos, C. M. S., Fujimori, E., Carrer, F. C. D. A., Nichiata, L. Y. I., ... & Soares, C. B. (2022). Response to college students' mental health needs: A rapid review. *Revista de Saude Publica*, 55, 114-132. <https://doi.org/10.11606/s1518-8787.2021055003363>
- George, D., & Mallery, P. (2019). *IBM SPSS statistics 26 step by step: A simple guide and reference*. Routledge. <https://doi.org/10.4324/9780429056765>
- Goldberg, D., & Williams, P. (1988). *A user's guide to the general health questionnaire*. NFER-NELSON. <https://books.google.com.tr/books?id=LpSuGOAACA AJ>
- Greenberg, M. T., Domitrovich, C. E., Weissberg, R. P., & Durlak, J. A. (2017). Social and emotional learning as a public health approach to education. *The Future of Children*, 13-32. <https://www.jstor.org/stable/44219019>
- Guendelman, S., Medeiros, S., & Rampes, H. (2017). Mindfulness and emotion regulation: Insights from neurobiological, psychological, and clinical studies. *Frontiers in Psychology*, 8, 220. <https://doi.org/10.3389/fpsyg.2017.00220>
- Gülirmak Güler, K., & Albayrak Günday, E. (2024). Nature-friendly hands: The relationship between nursing students' climate change anxiety, intolerance of uncertainty, and anxiety about the future. *Public Health Nursing*. <https://doi.org/10.1111/phn.13388>
- Hayes, A. F. (2018). Partial, conditional, and moderated moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, 85(1), 4-40. <https://doi.org/10.1080/03637751.2017.1352100>
- Henriksen, D., & Gruber, N. (2024). System-wide school mindfulness: addressing elementary students' social-emotional learning and well-being. *Frontiers in Education*, 9. https://doi.org/ARTN_1272545
- Jeno, L. M., Adachi, P. J., Grytnes, J. A., Vandvik, V., & Deci, E. L. (2019). The effects of m-learning on motivation, achievement and well-being: A Self-Determination Theory approach. *British Journal of Educational Technology*, 50(2), 669-683. <https://doi.org/10.1111/bjet.12657>
- Karabulut, E., Çayköylü, A., & Özkan, B. (2024). Community mental health in Türkiye and Europe: Data and influencing factors. *Current Approaches in Psychiatry*, 16(4), 673-682. <https://doi.org/10.18863/pgy.1392348>
- Kaşıkçı, F. (2020). Üniversite yaşamına uyum ile iyi oluş arasında kişilik özelliklerinin aracı rolü. *Turkish Studies*, 15(5), 3445-3466. <http://dx.doi.org/10.47423/TurkishStudies.43683>
- Kaşıkçı, F., & Öğülmüş, S. (2024). Adolescent well being: Relative contributions of social emotional learning and microsystem supports. *Social Psychology of Education*, 27(3), 1097-1114. <https://doi.org/10.1007/s11218-023-09852-5>
- Kassie, S. A. (2023). Prevention before intervention: Introducing mindfulness-based social-emotional learning in higher education institutions across the United Arab Emirates. *Frontiers in Education*, 8, 1281949. <https://doi.org/10.3389/educ.2023.1281949>
- Khune, A. A., Rathod, H. K., Deshmukh, S. P., & Chede, S. B. (2023). Mental health, depressive disorder and its management: A review. *GSC Biological and Pharmaceutical Sciences*, 25(2), 001-013. <https://doi.org/10.30574/gscbps.2023.25.2.0464>
- Kılıç, C. (1996). Genel sağlık anketi: Güvenilirlik ve geçerlilik çalışması. *Türk Psikiyatri Dergisi*, 7(1), 3-9.
- Koçeroğlu, R., Karaduman, B., Durmuş, B., & Ünlü, Ç. (2024). Spor bilimleri fakültesi öğrencilerinin akademik başarılarının umutsuzluk düzeyi ve gelecek kaygısı üzerine etkisi. *Göbeklitepe Eğitim ve Spor Bilimleri Dergisi*, 3(1), 1-10. <https://dergipark.org.tr/tr/pub/gesd/issue/83446/1432681>
- Koç, M. S., & Uzun, R. B. (2024). Investigating the link between dispositional mindfulness, beliefs about emotions, emotion regulation and psychological health: A model testing study. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*, 42(2), 475-494. <https://doi.org/10.1007/s10942-023-00522-1>
- LaBelle, B. (2023). Positive outcomes of a social-emotional learning program to promote student resiliency and address mental health. *Contemporary School Psychology*, 27(1), 1-7. <https://doi.org/10.1007/s40688-019-00263-y>
- Lang, S. N., Jeon, L., Sproat, E. B., Brothers, B. E., & Buettner, C. K. (2020). Social emotional learning for teachers (SELF-T): A short-term, online intervention to increase early childhood educators' resilience. *Early Education and Development*, 31(7), 1112-1132. <https://doi.org/10.1080/10409289.2020.1749820>
- Lawlor, M. S. (2016). Mindfulness and social emotional learning (SEL): A conceptual framework. *Handbook of*

- Mindfulness in Education: Integrating Theory and Research into Practice*, 65-80. https://doi.org/10.1007/978-1-4939-3506-2_5
- Li, S. Y. H., & Bressington, D. (2019). The effects of mindfulness-based stress reduction on depression, anxiety, and stress in older adults: A systematic review and meta-analysis. *International Journal of Mental Health Nursing*, 28(3), 635-656. <https://doi.org/10.1111/inm.12568>
- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research*, 39(1), 99-128. https://doi.org/10.1207/s15327906mbr3901_4
- Maloney, J. E., Lawlor, M. S., Schonert-Reichl, K. A., & Whitehead, J. (2016). A mindfulness-based social and emotional learning curriculum for school-aged children: The MindUP program. *Handbook of Mindfulness in Education: Integrating Theory and Research into Practice*, 313-334. https://doi.org/10.1007/978-1-4939-3506-2_20
- Meherali, S., Punjani, N., Louie-Poon, S., Abdul Rahim, K., Das, J. K., Salam, R. A., & Lassi, Z. S. (2021). Mental health of children and adolescents amidst COVID-19 and past pandemics: A rapid systematic review. *International Journal of Environmental Research and Public Health*, 18(7), 3432. <https://doi.org/10.3390/ijerph18073432>
- Meyers, D. C., Domitrovich, C. E., Dissi, R., Trejo, J., & Greenberg, M. T. (2019). Supporting systemic social and emotional learning with a schoolwide implementation model. *Evaluation and Program Planning*, 73, 53-61. <https://doi.org/10.1016/j.evalprogplan.2018.11.005>
- Mihic, J., Oh, Y., Greenberg, M., & Kranzelic, V. (2020). Effectiveness of mindfulness-based social-emotional learning program CARE for teachers within croatian context. *Mindfulness*, 11(9), 2206-2218. <https://doi.org/10.1007/s12671-020-01446-y>
- Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences*, 50(3), 387-391. <https://doi.org/10.1016/j.paid.2010.10.029>
- Mitchell, B. D., Lucio, R., Souhrada, E., Buttera, K., & Mahoney, J. (2024). Understanding the attacks on social-emotional learning: Strategizing on the response and advocacy of school mental health practitioners. *School Mental Health*. <https://doi.org/10.1007/s12310-024-09666-6>
- Moreno-Gómez, A. J., & Cejudo, J. (2019). Effectiveness of a mindfulness-based social-emotional learning program on psychosocial adjustment and neuropsychological maturity in kindergarten children. *Mindfulness*, 10(1), 111-121. <https://doi.org/10.1007/s12671-018-0956-6>
- Nagpal, M., & Radliff, K. (2024). A systematic review of mindfulness-based school interventions on social emotional outcomes with adolescents. *Child & Youth Care Forum* (53), 563-610. <https://doi.org/10.1007/s10566-023-09783-4>
- Nair, B., & Otaki, F. (2021). Promoting university students' mental health: A systematic literature review introducing the 4m-model of individual-level interventions. *Frontiers in Public Health*, 9, 699030. <https://doi.org/10.3389/fpubh.2021.699030>
- Ng, B. (2023). Understanding the Socioemotional Learning in Schools: A Perspective of Self-determination Theory. In *Self-determination theory and socioemotional learning*. Springer. https://doi.org/10.1007/978-981-99-7897-7_1
- Özyeşil, Z., Arslan, C., Kesici, Ş., & Deniz, M. E. (2011). Bilinçli farkındalık ölçeği'ni Türkçeye uyarlama çalışması. *Eğitim ve Bilim*, 36(160). <https://eb.ted.org.tr/index.php/EB/article/view/697>
- Porru, F., Schuring, M., Bültmann, U., Portoghese, I., Burdorf, A., & Robroek, S. J. (2022). Associations of university student life challenges with mental health and self-rated health: A longitudinal study with 6 months follow-up. *Journal of Affective Disorders*, 296, 250-257. <https://doi.org/10.1016/j.jad.2021.09.057>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. <https://doi.org/10.3758/BRM.40.3.879>
- Priestley, M., Broglia, E., Hughes, G., & Spanner, L. (2022). Student perspectives on improving mental health support services at university. *Counselling and Psychotherapy Research*, 22(1). <https://doi.org/10.1002/capr.12391>
- Rehman, A. U., You, X., Wang, Z., & Kong, F. (2023). The link between mindfulness and psychological well-being among university students: The mediating role of social connectedness and self-esteem. *Current Psychology*, 42(14), 11772-11781.
- Roudebush, M., Murray, D. W., Netschytailo, H., & Jensen, T. M. (2024). Patterns and predictors of adolescent engagement in a mindfulness-based social-emotional learning program. *Journal of Adolescence*, 96(4), 732-745. <https://doi.org/10.1002/jad.12294>
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68. <https://doi.org/10.1037/0003-066X.55.1.68>
- Sandilos, L. E., Neugebauer, S. R., DiPerna, J. C., Hart, S. C., & Lei, P. (2023). Social-emotional learning for whom? implications of a universal SEL program and teacher well-being for teachers' interactions with students. *School Mental Health*, 15(1), 190-201. <https://doi.org/10.1007/s12310-022-09543-0>
- Schultz, P. P., & Ryan, R. M. (2015). The “why,” “what,” and “how” of healthy self-regulation: Mindfulness and well-being from a self-determination theory perspective. *Handbook of Mindfulness and Self-regulation*, 81-94. https://doi.org/10.1007/978-1-4939-2263-5_7
- Seppälä, E. M., Bradley, C., Moeller, J., Harouni, L., Nandamudi, D., & Brackett, M. A. (2020). Promoting mental health and psychological thriving in university students: a randomized controlled trial of three well-being interventions. *Frontiers in Psychiatry*, 11, 534776. <https://doi.org/10.3389/fpsy.2020.00590>
- Sezer, I., Pizzagalli, D. A., & Sacchet, M. D. (2022). Resting-state fMRI functional connectivity and mindfulness in clinical and non-clinical contexts: A review and synthesis. *Neuroscience & Biobehavioral Reviews*, 135, 104583. <https://doi.org/10.1016/j.neubiorev.2022.104583>
- Sharma, P. K., & Kumra, R. (2022). Relationship between mindfulness, depression, anxiety and stress: Mediating role of self-efficacy. *Personality and Individual Differences*, 186, 111363. <https://doi.org/10.1016/j.paid.2021.111363>
- Sheldon, E., Simmonds-Buckley, M., Bone, C., Mascarenhas, T., Chan, N., Wincott, M., ... & Barkham, M. (2021). Prevalence and risk factors for mental health problems in

- university undergraduate students: A systematic review with meta-analysis. *Journal of Affective Disorders*, 287, 282-292. <https://doi.org/10.1016/j.jad.2021.03.054>
- Singh, N., Minaie, M. G., Skvarc, D. R., & Toumbourou, J. W. (2019). Impact of a secondary school depression prevention curriculum on adolescent social-emotional skills: Evaluation of the resilient families program. *Journal of Youth and Adolescence*, 48, 1100-1115. <https://doi.org/10.1007/s10964-019-00992-6>
- Song, Y., & Lindquist, R. (2015). Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students. *Nurse Education Today*, 35(1), 86-90. <https://doi.org/10.1016/j.nedt.2014.06.010>
- Stanikzai, M. I. (2023). Critical Thinking, Collaboration, Creativity and Communication Skills among School Students: A Review Paper. *European Journal of Theoretical and Applied Sciences*, 1(5), 441-453. [https://doi.org/10.59324/ejtas.2023.1\(5\).34](https://doi.org/10.59324/ejtas.2023.1(5).34)
- Strohmaier, S. (2020). The relationship between doses of mindfulness-based programs and depression, anxiety, stress, and mindfulness: A dose-response meta-regression of randomized controlled trials. *Mindfulness*, 11(6), 1315-1335. <https://doi.org/10.1007/s12671-020-01319-4>
- The National Institute of Mental Health (NIMH). (2024). Mental Illness. <https://www.nimh.nih.gov/health/statistics/mental-illness>
- Thierry, K., Vincent, R., Norris, K., & Dawson, O. (2022). Improving School Readiness for a Social Emotional Learning Curriculum: Case Study of a School-Mental Health Agency Partnership. *Journal of Research in Childhood Education*, 36(3), 483-505. <https://doi.org/10.1080/02568543.2021.1960938>
- Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior*, 52(2), 145-161. <https://doi.org/10.1177/0022146510395592>
- Tomlinson, E. R., Yousaf, O., Vittersø, A. D., & Jones, L. (2018). Dispositional mindfulness and psychological health: A systematic review. *Mindfulness*, 9, 23-43. <https://doi.org/10.1007/s12671-017-0762-6>
- Totan, T. (2018). Ergenlerde sosyal ve duygusal öğrenme ölçeğinin geliştirilmesi. *Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 48(48), 41-58. <https://doi.org/10.15285/maruaebed.393209>
- Turki, F. J., Jdaitawi, M., & Sheta, H. (2018). Fostering positive adjustment behaviour: Social connectedness, achievement motivation and emotional-social learning among male and female university students. *Active Learning in Higher Education*, 19(2), 145-158. <https://doi.org/10.1177/1469787417731202>
- Vassilopoulos, S. P., Brouzos, A., & Koutsianou, A. (2018). Outcomes of a universal social and emotional learning (SEL) group for facilitating first-grade students' school adjustment. *International Journal of School & Educational Psychology*, 6(3), 223-236. <https://doi.org/10.1080/21683603.2017.1327830>
- Wang, Y., Xu, W., & Luo, F. (2016). Emotional resilience mediates the relationship between mindfulness and emotion. *Psychological Reports*, 118(3), 725-736. <https://doi.org/10.1177/0033294116649707>
- Williamson, B. (2021). Psychodata: disassembling the psychological, economic, and statistical infrastructure of 'social-emotional learning'. *Journal of Education Policy*, 36(1), 129-154. <https://doi.org/10.1080/02680939.2019.1672895>
- World Health Organization (WHO). (2024). *Mental health*. https://www.who.int/health-topics/mental-health#tab=tab_1