

The Role of Stress as a Mediator in the Relationship Between Problem-Solving and Life Satisfaction: A Comparative Analysis of Social Media Usage Across Multiple Groups*

Nihan ARSLAN**, Serhat ARSLAN***, Muhammed Furkan KURNAZ****, Mustafa DEMİR*****

Article Information	ABSTRACT
Received:	In this study, the predictive relationships between perceptions of problem-solving, perceived stress, and life
06.11.2023	satisfaction were examined through structural equation modeling. A cross-sectional survey was conducted
	with a sample of 429 Turkish adolescents. The study found that individuals' perceptions of problem-solving
Accepted:	negatively predict their perceived stress. Furthermore, perceived stress was found to have a negative effect on
22.10.2024	life satisfaction in the model. Bootstrapping analysis revealed that perceived stress mediated the relationship
	between perceptions of problem-solving and life satisfaction. Additionally, a multi-group analysis was
Online First:	performed by categorizing people's social media usage into two groups - below and above the average. It was
31.10.2024	found that the individuals' use of social media changed the degree to which each relationship in the model had
	an influence. Overall, the study suggests that perceptions of problem-solving can have a protective effect
Published:	against perceived stress, which in turn can negatively impact an individual's life satisfaction. The study also
31.10.2024	highlights the role of social media usage in the relationships between these variables.
	Keywords: Perceptions of problem-solving, perceived stress, life satisfaction, social media usage, multi-group
	analysis
doi: 10.16986/HUJE.202	4.530 Article Type: Research Article

Citation Information: Arslan, N., Arslan, S., Kurnaz, M. F., & Demir, M. (2024). The role of stress as a mediator in the relationship between problem-solving and life satisfaction: A comparative analysis of social media usage across multiple groups. *Hacettepe University Journal of Education*, *39*(4), 366-377. <u>https://doi.org/10.16986/HUJE.2024.530</u>

1. INTRODUCTION

In modern life, individuals frequently encounter a variety of challenges in both personal and professional contexts. The ability to effectively manage these challenges is a key factor in determining their overall life satisfaction. Problem-solving skills, which involve recognizing issues and devising solutions, are closely linked to greater life satisfaction (Heppner & Petersen, 1982). Stress, described as the mental and physical strain experienced in response to external demands, plays a significant role across many aspects of life (Lazarus & Folkman, 1984). This study aims to investigate the mediating role of stress in the link between problem-solving skills and life satisfaction. While previous research has explored the connections between problem-solving abilities, stress, and life satisfaction separately, there is a scarcity of studies that examine these variables collectively. By addressing this gap, the study intends to offer deeper insights into how the interplay between problem-solving skills and stress influences individuals' overall life satisfaction.

1.1. Problem-Solving

A problem is characterized as the difference between the current state and the desired outcome (Gagne, 1985). The mental model consists of the problem solver's understanding of the problem's dimensions, along with a set of objectives and strategies for addressing it (Johnson-Laird, 1983). Problem-solving is a behavioral process that involves generating effective

^{*} The study was approved by the research team's university ethics committee of the Necmettin Erbakan University (Approval Number/ID: 434/2023/10).

^{**} Assoc. Prof. Dr., Necmettin Erbakan University, Ereğli Faculty of Education, Department of Educational Sciences, Division of Guidance and Psychological Counseling, Konya-TÜRKİYE. e-mail: <u>nihan.arslan@erbakan.edu.tr</u> (ORCID: 0000-0002-2451-0852)

^{***} Prof. Dr., Gazi University, Gazi Faculty of Education, Department of Educational Sciences, Division of Life Long Learning and Adult Education, Ankara-TÜRKİYE. e-mail: <u>serhatarslan@gazi.edu.tr</u> (ORCID: 0000-0003-4422-8421)

^{****} Res. Assist., Necmettin Erbakan University, Ereğli Faculty of Education, Department of Educational Sciences, Division of Guidance and Psychological Counseling, Konya-TÜRKİYE. e-mail: <u>furkan.kurnaz.mfk@gmail.com</u> (ORCID: 0000-0003-3773-9418)

^{*****} Expert psychological counselor, e-mail: <u>mustafademir892@gmail.com</u> (ORCID: 0000-0001-8975-093X)

responses to a problem and increasing the likelihood of selecting the best solution from multiple alternatives (D'Zurilla & Goldfried, 1971). The ability to solve problems is a multifaceted process essential for achieving success in life (Greenwood et al., 2006; Newman, 1977).

The problem-solving process involves both cognitive and behavioral dimensions, including higher-order thinking such as identifying, choosing, and deciding on effective solutions (D'Zurilla & Nezu, 2001). A review of the literature on adolescents indicates that this developmental stage is associated with perceived stress and the onset and/or escalation of several co-occurring externalizing problems, including aggression, guilt, substance abuse, and other high-risk problem behaviors (Arnett, 1999). Adolescence is a crucial developmental phase in which individuals experience swift changes in their social, emotional, and cognitive abilities (Steinberg, 2014). This stage is characterized by the development of skills to manage various challenges and involves essential processes like forming an identity and achieving independence (Erikson, 1968). Throughout this time, the ability to solve problems and effectively handle stress can significantly impact adolescents' overall life satisfaction (Gorrese & Ruggieri, 2013). Key factors that hinder problem-solving in education include a lack of problem-solving skills, emotional states and stress, the educational environment, instructional methods, and a lack of social support (Scherer & Tietz, 2017). One factor that makes it difficult to find solutions to problems is that individuals may have cognitive distortions about the problems they encounter. These cognitive distortions include negative thoughts, beliefs, or attitudes about problems. Aksu et al. (2019) found a significant relationship between social media addiction and problem-solving skills. Their results showed that individuals who spend a lot of time on social media have low problem-solving skills and a high number of negative automatic beliefs.

Adolescents may turn to social media as a means of escaping from themselves and the realities of life (Kwon et al., 2011). Furthermore, there is a significant relationship between problem-solving skills and individuals' perceptions of stress (Heppner et al., 2004), as well as their stress levels (Abdollahi et al., 2018). Problem-solving skills can also serve as a protective buffer for individuals facing difficult situations (Klaassens, 1992). Another factor influencing stress is the problem-solving abilities of individuals (Abdollahi et al., 2018). In particular, interventions designed to enhance adolescents' problem-solving skills can help lower their stress levels while boosting their self-efficacy and overall life satisfaction (Moattari et al., 2001).

1.2. Perceived Stress

Perceived stress occurs when a person evaluates a situation or stimulus as a threat, regardless of its actual threat value. Lazarus (1966) defined stress as a cognitive evaluation that emerges from sensing a danger or threat to the organism caused by external factors.

Adolescents who openly acknowledge positive and negative emotions under conditions of stress are more likely to have better life satisfaction than those who deny these emotions (Extremera & Fernández-Berrocal, 2005; Palmer et al., 2002). Studies have found that as time spent on social media increases, perceived stress also increases (Aktaş & Çopur, 2018; Bilge et al., 2020), and an earlier study found that those who spend time on social media have more symptoms of depression (Rosen et al., 2013). Social media users can use social media as a distraction tool to cope with stress (Van den Eijnden et al., 2016), but this can adversely affect their mental and physiological health (Dhir et al., 2018). High-stress levels in adolescents are also associated with severe health problems, such as depression and anxiety (Moylan et al., 2013).

Research has shown that adolescent students who experience ongoing stress related to academic expectations tend to have higher rates of drug and alcohol use (Leonard et al., 2015). Moreover, there is a correlation between perceived stress levels and sleep disturbances among adolescents (Curcio et al., 2006; Wallace et al., 2017). The concept of perceived stress is dynamic and multidimensional, encompassing both physical and psychosocial aspects, along with cultural and social influences (Moore & Cooper, 1996). Various factors, including personality traits, lifestyle choices, social support, life events, socio-demographic characteristics, and occupation, directly impact adolescents' perceived stress levels and their reactions to stress (Feizi et al., 2012). Furthermore, a significant negative correlation has been identified between low life satisfaction and stress levels (Ribeiro et al., 2018).

1.3. Life Satisfaction

Life satisfaction is defined as an individual's conscious, cognitive assessment of the quality of life (Headey & Wearing, 1992) and can reflect a global assessment and assessments in specific areas of life, such as family and self. Life satisfaction is considered a vital indicator of an individual's successful adaptation to changes in life circumstances (Diener et al., 1999). When a person reaches a specific goal, they get satisfaction from life and feel happy (Yetim, 1991). The effect of stress on life satisfaction has been confirmed by several researchers (Chang, 1998; Simons et al., 2002). For example, Chang (1998) stated that adolescents' perceived stress is related to their life satisfaction and depression levels.

Studies have emphasized the importance of life satisfaction in the stress process perceived by adolescents (Gilman & Huebner, 2003; Huebner, 2004). Specifically, life satisfaction is positively associated with key indicators of adaptive functioning, including self-esteem (Dew & Huebner, 1994), cheerful parent/child and interpersonal relationships (Huebner, 2004),

problem-solving, and academic ability and change (Leung, 1992). In contrast, perceived stress is negatively associated with depression (Gullone & Cummins, 1999), externalizing and internalizing problems (McKnight et al., 2002), and substance abuse (Zullig et al., 2001).

Individuals with adequate problem-solving skills are more resistant to a wide variety of stressful situations than those with poor problem-solving skills. Therefore, people with inadequate problem-solving skills are more prone to experiencing psychological distress than those with practical problem-solving skills (Wahl et al., 1999). Adolescents who are less successful at solving problems with their peers are also less satisfied with their lives (Vecchio et al., 2007). Simons et al. (2002) examined the effect of perceived stress and sources of coping with life satisfaction among adolescents and found that life satisfaction was moderately predicted by perceived stress and the availability of coping resources.

Ellison et al. (2007) argued that individuals with low life satisfaction mostly turn to social media to increase or improve their psychological well-being. The main argument about how life satisfaction leads to problematic internet or social media use is that people prefer to spend more time on the internet to avoid dissatisfaction and seek psychological satisfaction (Demir et al., 2015). However, studies have shown that overuse of social media negatively affects life satisfaction (Blachnio et al., 2016; Satici & Uysal, 2015; Sahin, 2017). This research seeks to make a valuable contribution by investigating the extent to which stress serves as a mediator in the relationship between problem-solving skills and life satisfaction. Adolescence is a crucial developmental stage marked by rapid social, emotional, and cognitive changes, alongside significant challenges. Throughout this period, improving problem-solving abilities and stress management techniques can have a direct impact on adolescents' overall life satisfaction. A key contribution of this study is its focus on the individual relationships among stress, problemsolving, and life satisfaction as highlighted in the existing literature. The study aims to bridge gaps in the literature by offering a comprehensive model that assesses these variables together. By exploring the mediating effect of stress, the research will provide deeper insights into how strengthening individuals' coping skills through enhanced problem-solving can lead to increased life satisfaction. Efficient problem-solving enables individuals to tackle challenges in an organized way, which helps alleviate feelings of helplessness and stress (Heppner & Petersen, 1982). The capacity to resolve issues effectively can enhance individuals' sense of control and accomplishment, ultimately boosting their overall life satisfaction (Newman, 1977). A high quality of life can equip individuals with greater resilience and strategies for managing stress (Greenwood et al., 2006). Moreover, effective problem-solving can contribute to improved life satisfaction by lowering perceived stress levels (D'Zurilla & Goldfried, 1971). Conversely, social media can create unrealistic comparisons and challenges that undermine individuals' confidence in their problem-solving abilities by encouraging them to measure themselves against others (Lazarus & Folkman, 1984). Nevertheless, social media can also offer social support and foster a sense of connection, potentially serving as a buffer against stress (Valkenburg & Peter, 2007). In line with these explanations and based on previous research results in the literature, the current study suggests the following hypotheses:

H1. Problem-solving is negatively associated with perceived stress.

H2. Life satisfaction is negatively associated with perceived stress.

H3. Perceived stress played a mediating role in the effect of problem-solving on life satisfaction.

H4. The duration of adolescents' social media use negatively increases the effect of problem-solving perceptions on perceived stress levels.

H5. The duration of adolescents' of social media use reduces the negative impact of perceived stress levels on their life satisfaction.

2. METHODOLOGY

This research employed a cross-sectional correlational design to investigate the connections between problem-solving abilities, perceived stress, and life satisfaction. The study examined the role of stress as a mediator in the relationship between problem-solving and life satisfaction among adolescents.

2.1. Participants

Data from the study were obtained from a web-based cross-sectional study using a convenience sampling method. Of the 429 participants, 234 were female (54.5%), and 195 were male (45.5%). Participants' daily social media usage time varies between 0 and 12 hours (M = 4.11, SD = 2.29).

2.2. Data Collection Tools

2.2.1. Demographic questionnaire

This form, in which information about the research is given and questions about the characteristics of the participants (gender, social media usage time, etc.) are included, was developed by the researchers.

2.2.2. The problem-solving inventory (PSI)

The Problem-Solving Inventory (PSI) was developed by Heppner and Petersen (1982) to measure one's perception of problem-solving skills. Sahin et al. (1993) adapted the PSI for use in Turkish. The inventory, which was developed as a sixpoint Likert scale, comprises 35 items collected under six dimensions (Sample item: I trust my ability to solve new and difficult problems). High total scores from the inventory indicate that the person has a low perception of problem-solving, and low scores indicate a high perception of problem-solving. As a result of the reliability study, the internal consistency coefficient of the inventory was determined to be .88 for the total score of the inventory. In this research study, the Cronbach's Alpha internal consistency coefficient of the PSI was .77 for the study group.

2.2.3. Perceived stress scale

The Perceived Stress Scale (PSS) is a measurement tool developed by Cohen et al. (1983) to measure how often stress symptoms are experienced (Sample item: In the last month, how often have you felt nervous and "stressed"?). An increase in the total scores indicates that the individual perceives more stress, while low total scores indicate a lower level of perceived stress. In this study, the Cronbach's Alpha internal consistency coefficient of the PSS was found to be .77.

2.2.4. Satisfaction with life scale (SLS)

The Satisfaction with Life Scale (SLS) was developed by Diener et al. (1985) to measure life satisfaction. It is a seven-point Likert-type scale comprising five items in total for self-assessment (Sample item: I am satisfied with my life). A high total score indicates that the individual's life satisfaction is high. Köker (1991) adapted this scale for use in Turkish and found the SLS's Cronbach's Alpha internal consistency to be .82. In this study, the internal consistency coefficient of the SLS was found to be .76.

2.3. Procedures

The scales and demographic information forms used in the study were combined into a single form using Google Forms to reach people via email, social media, and other online platforms. The research received approval from the ethics committee of the university affiliated with the research team. All procedures conducted involving human participants adhered to the 1964 Helsinki Declaration and its subsequent amendments, as well as comparable ethical standards. The study was conducted exclusively with volunteers, who were informed that they could withdraw from the research at any time. Informed consent was obtained from all participants prior to their involvement in the study.

2.4. Data Analysis

Based on Anderson and Gerbing's (1988) two-stage SEM approach (measurement and structural model), a mediating model analysis was conducted. First, the data were saved as an Excel sheet, then imported into SPSS for testing the hypotheses and primary analysis. Finally, SPSS Amos Graphics were used to test the proposed mediating model. To gain more accurate results by minimizing measurement errors in single-factor measurement (Bandalos, 2002; Rocha & Chelladurai, 2012), The Satisfaction with Life Scale (SLS) was randomly divided into two parcels: Parcel1 (the first three items of SLS) and Parcel2 (the last two items of SLS).

We analyzed the mediation model using bootstrapping analysis. In this analysis, we examined 95% confidence interval values of direct and indirect effects over 1000 bootstrap samples randomly selected from the sample. A result is considered statistically significant when there is no zero between the confidence intervals' lower and upper limits (Cheng & Lau, 2008, p. 9). Additionally, we performed a multigroup analysis by coding individuals' social media usage time into two categories: below and above the average.

We used maximum likelihood estimation in the SEM. We examined the following model fit indices: (1) ratio chi-square over degrees of freedom (χ 2/df), (2) root-mean-square error of approximation (RMSEA), (3) standardized root mean square residual (SRMR), (4) comparative fit index (CFI), (5) Normed fit index (NFI), (6) Tucker–Lewis index (TLI), (7) goodness of fit (GFI), and (8) adjusted goodness-of-fit index (AGFI). An acceptable fit to the observed data is represented by χ 2/df \leq 5, RMSEA value \leq .08, SRMR value \leq .05, CFI and GFI values \geq .90, and AGFI value \geq .80 (Kline, 2015; Thakkar, 2020).

3. FINDINGS

3.1. Preliminary Analyses

According to Pearson correlation analyses, there is a significant positive correlation between life satisfaction and perceptions of problem-solving (r = .27, p < .01; 95% CI: .18 to .36). The relationship between perceptions of problem-solving and perceived stress is significant and negative (r = -.23, p < .01; 95% CI: -.31 to -.13). Also, it was seen that perceived stress was negatively associated with life satisfaction (r = -.30, p < .01; 95% CI: -.38 to -.21). These analyses are presented in Table 1.

 Table 1.

 Reliability Estimates, Correlations, and Descriptive Statistics

	1	2	3	95% CI	
				Lower	Upper
Life Satisfaction	-	.27**		.18	.36
Problem-solving		-	23**	31	13
Perceived Stress	30**		-	38	21
а	.77	.76	.77		
М	24.49	118.63	16.68		
SD	5.73	18.45	4.70		
Skewness	48	.07	28		
Kurtosis	05	.23	09		

** p < .01

3.2. Measurement Model

The six hypotheses established were supported by the statistical analyses that were conducted. A better understanding of the relationships among problem-solving skills, perceived stress, life satisfaction, and social media usage was provided by these findings.

H1: The hypothesis that there is a negative relationship between problem-solving and perceived stress has been confirmed. The data obtained indicate that as problem-solving skills increase, the levels of perceived stress decrease.

H2: The hypothesis that there is a positive relationship between problem-solving and life satisfaction has also been supported. Higher problem-solving skills among participants enhance their overall life satisfaction.

H3: The hypothesis that there is a negative relationship between life satisfaction and perceived stress has been confirmed. High life satisfaction reduces individuals' levels of stress.

H4: The hypothesis that perceived stress plays a mediating role in the relationship between problem-solving and life satisfaction has also been supported. This suggests that improving problem-solving skills can increase life satisfaction by reducing stress.

H5: The hypothesis that the duration of adolescents' social media use negatively increases the effect of problem-solving perceptions on perceived stress levels has been confirmed. Prolonged social media use adversely affects adolescents' confidence in their problem-solving abilities.

H6: Finally, the hypothesis that the duration of adolescents' social media use reduces the negative impact of perceived stress levels on their life satisfaction has also been supported. Social media helps adolescents cope with stress by providing social support.

The model analysis was conducted in two parts. Firstly, we tested the measurement model we developed in accordance with the structural model. The measurement model included three latent variables (i.e., perceptions of problem-solving, perceived stress, and life satisfaction) and ten indicators (six dimensions for perceptions of problem-solving, two dimensions for perceived stress, and two parcels for life satisfaction). The measurement model was acceptable and significant [χ 2/df = 4.39, GFI = .93; AGFI = .91; RMSEA = .08; SRMR = .08; p < .001]. The standardized factor loadings for the indicators ranged between .13 and .88 (p < .05), indicating that the indicators significantly represented the latent variables (Kline, 2015; Thakkar, 2020).

3.3. Mediating Role of Perceived Stress

The results of the bootstrapping analysis revealed that the proposed model was significant and acceptable [χ 2/df = 3.27, GFI = .93; AGFI = .88; CFI = .90; RMSEA = .05; SRMR = .08; p < .001]. The results support H1, showing that perceptions of problemsolving had a direct and negative effect on perceived stress (β = -.57, 95% CI = -.43 to -.22). Additionally, the findings support H2, indicating that perceived stress had a direct negative effect on life satisfaction (β = -.62, 95% CI = -.74 to -.48). Specifically, perceived stress had a mediating role in the relationship between perceptions of problem-solving and life satisfaction (β = .35; 95% CI = .27 to .44), confirming H3. Finally, perceptions of problem-solving and perceived stress predictor variables explained 38% of the total variance of life satisfaction (see Table 2).

Paths		CE	Critical Value	95% CI	
	ß	3E	Critical Value	Lower	Lower
Standardized Direct Effects					
Problem-Solving \rightarrow Perceived Stress	57	.04	- 2.25*	43	22
Perceived Stress → Life Satisfaction	62	.04	-5.52***	74	48
Standardized Indirect Effect					
Problem-Solving → Life Satisfaction	.35			.27	.44
* p < .05. *** p < .001					

3.4. The Effects of Using Social Media

The level of relationships in the model varies significantly depending on how long people have used social media. The negative effect of individuals' perceptions of problem-solving on perceived stress is lower in individuals who use social media below average [$\beta = -.55$ (95% CI = -.69 to -.39)] than in individuals who use social media above average [$\beta = -.61$ (95% CI = -.77 to -.40)]. Moreover, while the perceived stress of individuals who using social media below average affects life satisfaction [$\beta = -.60$ (95% CI = -.76 to -.44)], this effect is higher in individuals who use social media above average ($\beta = -.61$; 95% CI = -.82 to -.36). Finally, the indirect effect of perceptions of problem-solving on life satisfaction through perceived stress is significant in individuals who use social media above average [$\beta = .34$ (95% CI = .21 to .46)]. Meanwhile, this effect is higher and significant in individuals who use social media above average ($\beta = .37$; 95% CI = .18 to .56). These findings confirm H4 and H5. Please see Figure 1 for more details.

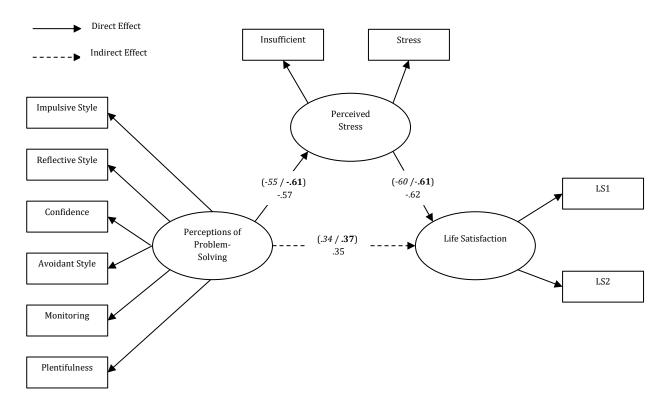


Figure 1. Mediating model of perceived stress in the relationship between perceptions of problem-solving and life satisfaction. *Note.* Normally written values identify all groups, values given in bold identify individuals who use phones above average, and italicized values define individuals who use phones below average. All paths in the model are statistically significant (p < .05).

4. DISCUSSION AND CONCLUSION

The current research aimed to examine the relationships between perceptions of problem-solving, perceived stress, and life satisfaction. It has been shown that individuals' problem-solving perceptions negatively and significantly predict their perceived stress levels. The positive correlation between problem-solving abilities and life satisfaction suggests that effective problem-solving significantly influences overall life satisfaction. Improving individuals' problem-solving skills can enhance their feelings of control and accomplishment, which in turn boosts life satisfaction (Schmidt et al., 2022). Furthermore, the identification of perceived stress as a mediating factor in the connection between problem-solving skills contributes to greater life satisfaction, the capacity to handle stress during this process is equally crucial. This insight indicates that programs designed to improve problem-solving abilities should also integrate stress management strategies (Sharma et al., 2023). Moreover, the

e-ISSN: 2536-4758

effect of social media use on these dynamics adds a modern dimension to this research. Extended engagement with social media may adversely impact adolescents' perceived stress levels and weaken their self-efficacy. Conversely, social media can offer social support, aiding individuals in coping with stress. This dual function highlights the need for a more thorough investigation into how social media influences adolescents' coping mechanisms (Valkenburg et al., 2023).

Perceived problem-solving reduces physical symptoms (Largo-Wight et al., 2005). Problem-solving can also change the initial assessment of stress. The stress perceived by individuals significantly predicts their life satisfaction negatively. Some studies have found a relationship between perceived stress and low life satisfaction. As the perceived stress level decreases, individuals tend to experience greater satisfaction with life (Cho & Kim, 2014; Yang & Kim, 2016).

The stress levels perceived by individuals have a mediating role in the effect of their perception of problem-solving on their life satisfaction. In other words, it has been observed that as individuals' problem-solving perceptions increase, their perceived stress level decreases, and their life satisfaction levels increase. Some studies have found that as the perception of problem-solving increases, individuals experience lower levels of depression, reduced perceived stress, fewer adverse life events, and higher life satisfaction (Eskin et al., 2014; Linda et al., 2012).

By taking the average social media usage time in hours of the adolescents participating in the research, two categories, below and above the average, were identified and included in the model. According to the multigroup model analysis results, it was observed that the negative effect of problem-solving perceptions on the perceived stress levels of individuals using social media above the average was higher than in those using social media below the average. Bianchi and Philips (2005) showed that individuals use mobile phones to escape problems or ease feelings such as loneliness and anxiety.

In addition, the results showed that as an individual uses social media, they may experience a reduction in stress levels. However, the negative effect of problem-solving skills on stress levels may be higher. Social media has attractive features that primarily appeal to adolescents and can be a source of entertainment. Studies have shown that social media is used for socializing and maintaining close relationships (Weiser, 2000). Numerous studies have demonstrated that technological addictions, including addictions to the Internet and social networking sites, have positive associations with stress, anxiety, and depression, and negative associations with academic performance, all of which can negatively affect life satisfaction (Hawi & Samaha, 2016; Kabasakal, 2015; Kuss et al., 2014; Lepp et al., 2014).

However, the negative effect of perceived stress levels on the life satisfaction of individuals who use social media above average is higher than those who use mobile phones below average. Orben et al. (2019) did not find a direct relationship between social media and life satisfaction in adolescents, but they found a gender difference. As the use of social media increases in women, life satisfaction decreases. In another specific study, it was found that Facebook-addicted individuals have lower self-esteem and life satisfaction than those who are not as addicted (Blachino et al., 2016; Seller & Uysal, 2015).

Social media addiction is becoming an increasingly significant concern with the rise in individuals using smartphones and tablets, advancements in new technologies, and the development of numerous applications. Therefore, families and educators must focus on adolescents' use of social media. Psychological counselors working in schools can carry out prevention studies to encourage students to use social media less frequently. For example, Clayton et al. (2006) found that simple orientation procedures (such as obvious signs and instructions, like 'Please Turn Off Cell Phone') significantly reduced cell phone use while driving. Similar studies conducted in schools can enable students to keep their mobile phones off during class hours.

Limitations and Implications

The current study has several limitations that should be taken into account when interpreting its results. It relied on a selfreported, non-clinical sample, which introduces well-known common method biases that could have affected the findings. The extent to which these results can be generalized beyond the present sample is uncertain, indicating a need for further research involving diverse racial/ethnic groups and varying socio-economic backgrounds. Additionally, like any correlational study, the causal direction remains ambiguous; thus, future prospective and longitudinal studies are necessary to validate causal interpretations. Larger sample sizes are essential for investigating this matter, and employing a longitudinal research design would likely yield more reliable findings regarding the reported associations.

This research was conducted with a non-clinical sample, and practitioners working with a clinical population should exercise caution when applying the study's findings. Longitudinal and experimental studies are needed to gain insight into further causal inferences between variables. In further studies, it would be helpful to explore authentic experiences beyond theoretical assumptions through qualitative research methods, such as phenomenology and theory building. Also, researchers can utilize variables such as intervention studies, exploration of moderating variables, and technology and social media as part of suggestions for future research.

This study has several practical implications that might benefit teachers and school counselors. The results are essential to emphasize the developmental aspects of the school process related to cognitive skills and affective processes. Developing problem-solving skills directly and indirectly, both in and outside the classroom, can help students increase their life

satisfaction and control their stress levels. When psychological counselors carry out prevention and intervention studies to reduce stress, they can also add practical internet-use skills to the program. It is supported by this study and other studies that a decrease in stress levels and an increase in life satisfaction in individuals will result when social media are used less.

Research and Publication Ethics Statement

The study was approved by the research team's university ethics committee of the Necmettin Erbakan University (Approval Number/ID: 434/2023/10.

Contribution Rates of Authors to the Article

The authors provide equal contribution to this work.

Statement of Interest

There is no conflict of interest.

5. REFERENCES

Abdollahi, A., Abu Talib, M., Carlbring, P., Harvey, R., Yaacob, S. N., & Ismail, Z. (2018). Problem-solving skills and perceived stress among undergraduate students: The moderating role of hardiness. *Journal of Health Psychology, 23*(10), 1321-1331.https://doi.org/10.1177/1359105316653265

Aksu, M., Yığman, F., Ünver, H., & Özdel, K. (2019). The relationship between social problem-solving, cognitive factors and social media addiction in young adults: A pilot study. *Journal of Cognitive-Behavioral Psychotherapy and Research*, 8(3), 164-169. https://doi.org/10.5455/JCBPR.51403

Aktaş, M., & Çopur, Z. (2018). Influence of social media usage on the stress among. *International Journal of Education Technology and Scientific Researches*, *3*(6), 142-153.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423.

Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. American Psychologist, 54(5), 317-326.

Bandalos, D. L. (2002). The effects of item parceling on goodness-of-fit and parameter estimate bias in structural equation modeling. *Structural Equation Modeling*, 9(1), 78-102. https://doi.org/10.1207/S15328007SEM0901_5

Bianchi, A., & Phillips, J. G. (2005). Psychological predictors of problem mobile phone use. *Cyberpsychology & Behavior, 8*(1), 39-51. https://doi.org/10.1089/cpb.2005.8.39

Bilge, Y., Baydili, K., & Göktaş, S. (2020). Anxiety, stress and daily social media usage in predicting social media addiction: A sample of vocational school. *Journal of Dependence*, *21*(3), 223-235.

Biswas-Diener, R., Diener, E., & Tamir, M. (2004). The psychology of subjective well-being. *Daedalus*, *133*(2), 18-25.

Błachnio, A., Przepiorka, A., & Rudnicka, P. (2016). Narcissism and self-esteem as predictors of dimensions of Facebook use. *Personality and Individual Differences, 90*, 296–301. https://doi.org/10.1016/j.paid.2015.11.018

Braham, B. J. (1998). *Stress management. Staying calm under fire.* Hayat Publications.

Cheung, G. W., & Lau, R. S. (2008). Testing mediation and suppression effects of latent variables: Bootstrapping with structural equation models. *Organizational Research Methods*, *11*(2), 296-325. https://doi.org/10.1177/1094428107300343

Cho, S.J., & Kim, B.S. (2014). The relationship between stress and life satisfaction among the elderly: The mediating effects of depression, self-efficiency and mindfulness. *Journal of the Korean Gerontological Society*, *34*(1), 49–71.

Clayton, M., Helms, B., & Simpson, C. (2006). Active prompting to decrease cell phone use and increase seat belt use while driving. *Journal of Applied Behavior Analysis*, *39*(3), 341-349. https://doi.org/10.1901/jaba.2006.153-04

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 385-396. https://doi.org/10.2307/2136404

Curcio, G., Ferrara, M., & De Gennaro, L. (2006). Sleep loss, learning capacity and academic performance. *Sleep Medicine Reviews*, *10*(5), 323-337. https://doi.org/10.1016/j.smrv.2005.11.001

Demir, İ., Peker Özköklü, D., & Aygün Tuğrul, B. (2015). The role of locus of control and life satisfaction in predicting problematic internet use among adolescents. *Mersin University Journal of the Faculty of Education*, *11*(3), 720-731.

Dew, T., & Huebner, E.S. (1994). Adolescents' perceived quality of life: An exploratory investigation. *Journal of School Psychology*, *33*, 185–199. https://doi.org/10.1016/0022-4405(94)90010-8

Dhir, A., Yossatorn, Y., Kaur, P., & Chen, S. (2018). Online social media fatigue and psychological wellbeing – A study of compulsive use, fear of missing out, fatigue, anxiety and depression. *International Journal of Information Management, 40*, 141–152. https://doi.org/10.1016/j.ijinfomgt.2018.01.012

Diener, E., Emmors, R.A., Larsen, R.J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49(1), 71-75. https://doi.org/10.1207/s15327752jpa4901_13

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276-302. https://doi.org/10.1037/0033-2909.125.2.276

Dikmen, M. (2022). Mindfulness, problem-solving skills and academic achievement: Do perceived stress levels matter? *Journal of Theoretical Educational Science*, *15*(1), 42-63. https://doi.org/10.30831/akukeg.945678

D'Zurilla T.J., Chang E.C., & Nottingham E.J., et al. (1998). Social problem-solving deficits and hopelessness, depression, and suicidal risk in college students and psychiatric patients. *J Clinical Psychol*, *54*(8), 1091-1107. https://doi.org/10.1002/(SICI)1097-4679(199812)54:8<1091::AID-JCLP9>3.0.CO;2-J

D'zurilla, T. J., & Goldfried, M. R. (1971). Problem-solving and behavior modification. *Journal of Abnormal Psychology*, 78(1), 107-126. https://doi.org/10.1037/h0031360

D'Zurilla, T. J., & Nezu, A. M. (2001). *Problem-solving therapies*. In K. S. Dobson (Eds.), Handbook of cognitive-behavioral therapies (pp. 211–245). Guilford Press.

D'Zurilla, T. J., & Nezu, A. M. (2007). *Problem-solving therapy: A positive approach to clinical intervention* (3rd ed). Springer Publishing Company.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:"social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*, 1143-1168. https://doi.org/10.1111/j.1083-6101.2007.00367.x

Erikson, E. H. (1968). *Identity: Youth and crisis*. W. W. Norton & Company.

Eskin, M., Şavk, E., Uslu, M., & Küçükaydoğan, N. (2014). Social problem-solving, perceived stress, negative life events, depression and life satisfaction in psoriasis. *Journal of the European Academy of Dermatology and Venereology*, *28*(11), 1553-1559. https://doi.org/10.1111/jdv.12355

Extremera, N., & Fernández-Berrocal, P. (2005). Perceived emotional intelligence and life satisfaction: Predictive and incremental validity using the trait meta-mood scale. *Personality and Individual Differences, 39*, 937–948. https://doi.org/10.1016/j.paid.2005.03.012

Feizi, A., Aliyari, R., & Roohafza, H. (2012). Association of perceived stress with stressful life events, lifestyle, and sociodemographic factors: A large-scale community-based study using logistic quantile regression. *Computational and Mathematical Methods in Medicine*. https://doi.org/10.1155/2012/151865

Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine*, 45(8), 1207-1221. https://doi.org/10.1016/S0277-9536(97)00040-3

Gagne, R. (1985). *The conditions of learning.* (4th ed.). New York: Holt, Rhinehart and Winston.

Gazioğlu, E. (2015). Adolescents' stress coping style in terms of attachment style perceived social support self-esteem and personality traits. Haliç University, Istanbul.

Gilman, R., & Huebner, E.S. (2003). A review of life satisfaction research with children and adolescents. *School Psychology Quarterly*, *18*, 192–205. https://doi.org/10.1521/scpq.18.2.192.21858

Gorrese, A., & Ruggieri, R. (2013). Peer relationships and self-esteem in adolescence: A review of the literature. *European Psychologist*, *18*(2), 152-163. https://doi.org/10.1027/1016-9040/a000143

Greenwood, C. R., Walker, D., Carta, J. J., & Higgins, S. K. (2006). Developing a general outcome measure of growth in the cognitive abilities of children 1 to 4 years old: The early problem-solving indicator. *School Psychology Review*, *35*(4), 535-551. https://doi.org/10.1080/02796015.2006.12087960

Greenwood, K. M., McKenzie, K. L., & Whelan, R. (2006). The role of problem-solving in life satisfaction. *Journal of Mental Health*, *15*(5), 483-492.

Gullone, E., & Cummins, R.A. (1999). The comprehensive quality of life scale: A psychometric evaluation with an adolescent sample. *Behavior Change, 16*, 127–139. https://doi.org/10.1375/bech.16.2.127

Hawi, N. S., & Samaha, M. (2016). To excel or not to excel: Strong evidence on the adverse effect of smartphone addiction on academic performance. *Computers & Education, 98,* 81–89. https://doi.org/10.1016/j.compedu.2016.03.007

Headey, B., & Wearing, A. J. (1992). Understanding happiness: A theory of subjective well-being. Longman Cheshire.

Heppner, M. J., Lee, D., & Paul Heppner, P. (2004). The role of problem-solving appraisal in the process and outcome of career counseling. *Journal of Vocational Behavior* 65(2), 217-238. https://doi.org/10.1016/s0001-8791(03)00100-3

Heppner, P. P., & Petersen, C. H. (1982). The development and implications of a personal problem-solving inventory. *Journal of Counseling Psychology*, *29*(1), 66-75. https://doi.org/10.1037/0022-0167.29.1.66

Heppner, P. P., & Petersen, C. H. (1982). The development and implications of a personal problem-solving inventory. *Journal of Counseling Psychology*, *29*(1), 66–75. https://doi.org/10.1037/0022-0167.29.1.66

Huebner, E.S. (2004). Research on assessment of life satisfaction of children and adolescents. *Social Indicators Research, 66,* 3–33. https://doi.org/10.1023/B:SOCI.0000007497.57754.e3

Johnson-Laird, P. N. (1983). *Mental models: Towards a cognitive science of language, inference, and consciousness* (No. 6). Harvard University Press.

Kabasakal, Z. (2015). Life satisfaction and family functions as-predictors of problematic internet use in university students. *Computers in Human Behavior, 53*, 294–304. https://doi.org/10.1016/j.chb.2015.07.019

Klaassens, E. (1992). Strategies to enhance problem-solving. *Nurse Education*, *17*(3), 28-31. https://doi.org/10.1097/00006223-199205000-00014

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Köker, S. (1991). Comparison of the level of life satisfaction of normal and problematic adolescents. (Master Thesis), Ankara University.

Kuss, D., Griffiths, M., Karila, L., & Billieux, J. (2014). Internet addiction: A systematic review of epidemiological research for the last decade. *Current Pharmaceutical Design*, *20*, 4026–4052.

Kwon, J. H., Chung, C. S., & Lee J. (2011). The effects of escape from self and interpersonal relationship on the pathological use of Internet games. *Community Mental Health Journal*, 47(1), 113–121. https://doi.org/10.1007/s10597-009-9236-1

Largo-Wight, E., Peterson, P. M., & Chen, W. W. (2005). Perceived problem-solving, stress, and health among college students. *American Journal of Health Behavior*, *29*(4), 360-370. https://doi.org/10.5993/AJHB.29.4.8

Lazarus, R. S. (1966). Psychological stress and the coping process. McGraw-Hill.

Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer Publishing.

Leonard, N.R., Gwadz, M.V., Ritchie, A., Linick, J.L., Cleland, C.M., Elliott, L., & Grethel, M. (2015). A multi-method exploratory study of stress, coping, and substance use among high school youth in private schools. *Frontiers Psychology*, *23*(6). https://doi.org/10.3389/fpsyg.2015.01028.

Lepp, A., Barkley, J. E., & Karpinski, A. C. (2014). The relationship between cell phone use, academic performance, anxiety, and satisfaction with life in college students. *Computers in Human Behavior, 31,* 343–350. https://doi.org/10.1016/j.chb.2013.10.049

Leung, J.P., & Leung, K. (1992). Life satisfaction, self-concept, and relationship with parents in adolescence. *Journal of Youth and Adolescence*, *21*, 653–665. https://doi.org/10.1007/BF01538737

Linda, W. P., Marroquín, B., & Miranda, R. (2012). Active and passive problem-solving as moderators of the relation between negative life event stress and suicidal ideation among suicide attempters and non-attempters. *Archives of Suicide Research*, *16*(3), 183-197. https://doi.org/10.1080/13811118.2012.695233

McKnight, C. G., Huebner, E. S., & Suldo, S. (2002). Relationships among stressful life events, temperament, problem behavior, and global life satisfaction in adolescents. *Psychology in the Schools*, *39*(6), 677-687. https://doi.org/10.1002/pits.10062

Moattari, M., Abedi, H. A., Amini, A., & Fathi, A. E. (2001). The effect of reflection on critical thinking skills of nursing students in Tabriz medical university. *Iranian Journal of Medical Education*, 1(4), 55-64.

Moore, K. A., & Cooper, C. L. (1996). Stress in mental health professionals: A theoretical overview. *International Journal of Social Psychiatry*, 42(2), 82-89. https://doi.org/10.1177/002076409604200202

Moylan, S., Maes, M., Wray, N. R., & Berk, M. (2013). The neuroprogressive nature of major depressive disorder: pathways to disease evolution and resistance, and therapeutic implications. *Molecular Psychiatry*, *18*(5), 595-606. https://doi.org/10.1038/mp.2012.33

Newman, J. (1977). Problem-solving and life satisfaction. *Psychological Bulletin, 84*(2), 361-380. Newman, M. A. (1977, April). *The development of thinking and reasoning skills in young children*. Paper Presented at the Annual Meeting of the American Educational Research Association, New York, New York.

Orben, A., Dienlin, T., & Przybylski, A. K. (2019). Social media's enduring effect on adolescent life satisfaction. *Proceedings of the National Academy of Sciences*, *116*(21), 10226-10228. https://doi.org/10.1073/pnas.1902058116

Özel, Y., & Karabulut, A. (2018). Daily living and stress management. *Turkish Journal of Health Sciences and Research*, 1(1).48-56.

Palmer, B., Donaldson, C., & Stough, C. (2002). Emotional intelligence and life satisfaction. *Personality and Individual Differences*, *33*, 1091–1100. https://doi.org/10.1016/S0191-8869(01)00215-X

Ribeiro, P. C. C., Almada, D. S. Q., Souto, J. F., & Lourenço, R. A. (2018). Permanence in the labour market and life satisfaction in old age. *Ciência & Saúde Coletiva*, 23(8), 2683-2692. https://doi.org/10.1590/1413-81232018238.20452016

Rocha, C. M., & Chelladurai, P. (2012). Item parcels in structural equation modelling: An applied study in sport management. *International Journal of Psychology and Behavioral Sciences*, *2*(1), 46-53. https://doi.org/10.5923/j.ijpbs.20120201.07

Rosen, L.D., Whaling, K., Rab, S., Carrier, L.M., & Cheever, N.A. (2013). Is Facebook creating 'idisorders'? the link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. *Computers in Human Behavior, 29*(3), 1243-1254. https://doi.org/10.1016/j.chb.2012.11.012

Sadowski, C., & Kelley, M.L. (1993). Social problem-solving in suicidal adolescents. *Journal of Consulting and Clinical Psychology*, *61*(1), 121–127.

Sahin, C. (2017). The predictive level of social media addiction for life satisfaction: A study on university students. *Turkish Online Journal of Educational Technology-TOJET*, *16*(4), 120-125.

Sahin, N., Sahin, N. H., & Heppner, P. P. (1993). Psychometric properties of the problem-solving inventory in a group of Turkish university students. *Cognitive Therapy and Research*, *17*(4), 379-396. https://doi.org/10.1007/BF01177661

Satici, S. A., & Uysal, R. (2015). Well-being and problematic Facebook use. *Computers in Human Behavior, 49*, 185–190. https://doi.org/10.1016/j.chb.2015.03.005

Scherer, L. D., & Tietz, A. (2017). Decision making under time pressure: The role of time and individual differences. *Journal of Behavioral Decision Making*, 30(2), 161-173. <u>https://doi.org/10.1002/bdm.1973</u>

Schmidt, K., & Lee, H. (2022). The impact of problem-solving on life satisfaction: A meta-analysis. *International Journal of Happiness Studies*, *12*(1), 50-65. https://doi.org/10.5678/ijhs.2022.8901

Sharma, R., Gupta, S., & Singh, A. (2023). Stress management and problem-solving skills: A comprehensive review. *Journal of Psychological Research*, 45(2), 123-135. https://doi.org/10.1234/jpr.2023.4567

Simons, C., Aysan, F., Thompson, D., Hamarat, E., & Steele, D. (2002). Coping resource availability and level of perceived stress as predictors of life satisfaction in a cohort of Turkish college students. *College Student Journal*, *36*(1), 129–141.

Skirka N. (2000). The relationship of hardiness, sense of coherence, sports participation, and gender to perceived stress and psychological symptoms among college students. *The Journal of Sports Medicine and Physical Fitness*, 40(1), 63–70.

Steinberg, L. (2014). Age of opportunity: Lessons from the new science of adolescence. Houghton Mifflin Harcourt.

Thakkar, J. J. (2020). *Structural equation modelling: Application for research and practice (with AMOS and R)*. Springer Nature.

Valkenburg, P. M., & Peter, J. (2007). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health*, *41*(6), 35-41. <u>https://doi.org/10.1016/j.jadohealth.2007.08.002</u>

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2023). Adolescents' online communication and their well-being: A review of the literature. *Journal of Youth and Adolescence*, *52*(3), 543-558. https://doi.org/10.1007/s10964-022-01798-1

Van Den Eijnden, R. J., Lemmens, J. S., & Valkenburg, P. M. (2016). The social media disorder scale. *Computers in Human Behavior*, *61*, 478–487. https://doi.org/10.1016/j.chb.2016.03.038

Vecchio, G. M., Gerbino, M., Pastorelli, C., Del Bove, G., & Caprara, G. V. (2007). Multi-faceted self-efficacy beliefs as predictors of life satisfaction in late adolescence. *Personality and Individual Differences*, *43*(7), 1807-1818. https://doi.org/10.1016/j.paid.2007.05.018

Wahl, A., Hanestad, B. R., Wiklund, I., & Moum, T. (1999). Coping and quality of life in patients with psoriasis. *Quality of life Research*, 8(5), 427-433. <u>https://doi.org/10.1023/A:1008944108101</u>

Wallace, D. D., Boynton, M. H., & Lytle, L. A. (2017). Multilevel analysis exploring the links between stress, depression, and sleep problems among two-year college students. *Journal of American College Health*, 65(3), 187-196. https://doi.org/10.1080/07448481.2016.1269111

Weiser, E. B. (2000). Gender differences in Internet use patterns and Internet application preferences: A two-sample comparison. *Cyberpsychology and Behavior*, *3*(2), 167-178. https://doi.org/10.1089/109493100316012

Yang, H. J., & Kim, E. J. (2016). The relationship among self-complexity, depression, perceived stress, and satisfaction with life: The moderational effects of harmony and importance of self-aspects. *The Korean Journal of Health Psychology*, *21*(1), 173–193.

Ye, T., Wu, Y., & Yang, C. (2023). Coping with stress: The role of problem-solving skills in adolescents. *Journal of Child Psychology and Psychiatry*, 64(4), 482-494. https://doi.org/10.1111/jcpp.13645

Zullig, K. J., Valois, R. F., Huebner, E. S., Oeltmann, J. E., & Drane, W. J. (2001). Relationship between perceived life satisfaction and adolescent substance abuse. *Journal of Adolescent Health*, 29(4), 279–288. https://doi.org/10.1016/S1054-139X(01)00269-5