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Investigating the impact of well-being literacy on psychological adjustment problems, life satisfaction, and psychological well-being in Turkish undergraduate students: the mediating role of optimism

Murat Yıldırım^{1,2*} , Ümit Dilekçi³ , Şeyhmus Aksoy¹  and Abdulmohsen Mohammed Abdullah Alkhulayfi⁴ 

Abstract

Background Well-being literacy is a relatively new construct that refers to an individual's capacity to intentionally use, understand, and communicate language and knowledge to promote and sustain well-being for oneself and others. Although gaining attention in positive psychology, empirical research on its impact and mechanisms remains limited, particularly regarding its mechanisms of influence on well-being and mental health outcomes in non-English-speaking contexts.

Objective This study had two primary aims: (i) to validate the applicability and initial validation of the six-item Well-Being Literacy Scale (Well-Lit 6) among Turkish undergraduate students for the first time, and (ii) to examine whether optimism mediates the relationship between well-being literacy and psychological adjustment problems, life satisfaction, and psychological well-being.

Method The study recruited 893 undergraduate Turkish students (58.90% female; $M = 21.53 \pm 3.99$) from Batman University, representing a non-English-speaking educational context. Participants completed the Well-Lit 6, Optimism and Pessimism Questionnaire (optimism subscale), Brief Adjustment Scale–6, Life Satisfaction Scale and Riverside Eudaimonia Scale using an online survey. To validate the Well-Lit 6, confirmatory factor analysis was performed. The proposed mediation model was tested using the PROCESS macro for SPSS (Model 4), with bootstrapping procedures to assess indirect effects.

Results The findings indicated that the Well-Lit 6 had a single-factor structure with high reliability. Mediation analysis showed that well-being literacy was positively related to optimism, life satisfaction, and psychological well-being, and negatively related to psychological adjustment problems. Optimism partially mediated the positive relationships between well-being literacy and both life satisfaction and psychological well-being, as well as the

*Correspondence:
Murat Yıldırım
muratyildirim@agri.edu.tr

Full list of author information is available at the end of the article



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negative relationship with psychological adjustment problems. All indirect effects were statistically significant based on bootstrapped confidence intervals.

Discussion/conclusion These findings underscore the significance of interventions that promote an optimistic mindset, as such interventions may amplify the positive psychological impact of well-being literacy on life satisfaction and psychological well-being, while also mitigating its negative effects on psychological adjustment difficulties.

Keywords Wellbeing literacy 6-item (Well-Lit 6) scale, Optimism, Psychological adjustment problems, Life satisfaction, Psychological well-being, Undergraduate students

Introduction

Language plays a central role of language in influencing psychological processes. It influences how individuals think, behave, and connect with others. By affecting perceptions, attitudes, and behaviors, the expression of language plays an important role in fostering emotional and psychological well-being [1, 2]. Well-being literacy is the language expression ability to maintain or improve well-being [3]. Building on this understanding, the present study explored the mediating role of optimism in the relationship between well-being literacy and psychological adjustment problems, life satisfaction, and psychological well-being.

Well-being literacy is an emerging construct that refers to an individual's capacity to intentionally use, understand, and communicate language, knowledge, and skills to enhance well-being for oneself and others [3, 4]. By using language consciously, people can support their well-being and contribute to the well-being of those around them [3, 5]. Well-being literacy consists of five interrelated abilities: using vocabulary, understanding ideas, creating messages, adapting to different contexts, and acting intentionally. These abilities work together to help individuals identify, express, and manage emotions, understand psychological concepts, communicate effectively across settings, and apply well-being knowledge in purposeful ways [4]. Individuals use vocabulary to describe well-being strategies and explain ways to improve health. They rely on information to keep their words meaningful and relevant. They interpret well-being communication by recognizing emotions and understanding social cues [6]. Lemon et al. [7] pointed out that well-being literacy is relational. Individuals adapt these messages to different environments by being aware of how the context changes the meaning [8–10]. Finally, they act intentionally to apply these abilities in a way that improves their own lives and the lives of others. Oades et al. [4] point out that literacy requires intentional well-being. By combining these actions, well-being literacy helps people to address challenges in clear and practical ways.

Despite growing interest in well-being literacy [3, 11–14], its empirical relationship with optimism and psychological outcomes remains underexplored. While

both constructs are individually linked to psychological outcomes, little is known about how their combination influences psychological outcomes like well-being and mental health outcomes. This gap is partly due to the recent development and limited validation of reliable well-being literacy measures [15]. However, the lack of studies examining their joint mechanisms—such as the mediation effect—and their impact across different populations also limits current understanding. This study addresses these gaps by clarifying how well-being, literacy and optimism contribute to psychological outcomes. In particular, this study aims to address this gap by first adapting the Wellbeing Literacy 6-item (Well-Lit 6) Scale from English to Turkish. Following the adaptation, the study investigates how well-being literacy associates with optimism to influence psychological well-being, life satisfaction, and psychological adjustment problems. By exploring these relationships, the research highlights how purposeful use of language about well-being can enhance individuals' mental health through an optimistic outlook. This focus is especially relevant in the Turkish context, where cultural factors such as collectivist values, educational norms, and mental health stigma may influence how well-being literacy is expressed and experienced. These dynamics suggest the importance of validating the Well-Lit 6 in a non-English-speaking setting and examining optimism as a cognitive mediator, contributing to a more culturally grounded understanding of well-being processes.

Well-being literacy, psychological adjustment problems, life satisfaction, and psychological well-being

Well-being literacy helps people improve their well-being by consciously using language. It teaches people how to use vocabulary, knowledge and language skills to better understand and express their emotions [3, 4]. People use these skills every day to communicate more effectively. These skills enable people to express themselves and adapt their communication to various contexts. For example, writing about emotions helps people manage their emotions and maintain their well-being [1, 2]. By practising these skills, people strengthen their relationships and cope better with social situations. People adapt to stress when they solve problems and continue to

function in everyday life. Those who adjust their psychology will keep their stress level at a minimum and positively function in their daily life [16–18]. Stress, loneliness and burnout make it difficult for people to adjust [19, 20]. Well-being literacy helps people confront these issues by providing them with the tools to describe and rethink their experiences. People who describe their problems constructively can manage their stress more successfully. Barton [21] pointed out that language constructs meaning in experiences, and if individuals use language capability related to well-being, they would construct well-being through language [22]. These actions show how well-being literacy helps people cope with stress and adapt to difficulties.

Well-being literacy helps people use language to improve their well-being and support others. It involves choosing words and phrases to create positive experiences and meaningful stories [4, 5]. By focusing on language choices, people align their communication with principles that support mental health [4]. This use of language helps people to manage their life satisfaction, which refers to an individual's subjective assessment of the quality of their life, based on personal standards and specific criteria they consider important [23]. Well-being literacy improves emotional management by helping people to understand and express their emotions in ways that reflect their values and cultural contexts [6, 8]. These skills enable people to better understand themselves and strengthen their well-being by making meaningful emotional connections.

Using language to make sense of life could improve mental and physical health. Writing about personal events or future goals helps people express their emotions constructively, as shown in studies that associate these practices with better emotional and physical outcomes [2]. Well-being literacy emphasizes the importance of adapting language to different situations and creating meaningful expressions [4]. This use of language helps people cope with difficulties and maintain their positive mental health and well-being, while at the same time strengthening their relationships with others. Language connects people by building stronger bonds and creating social support networks. Lemon et al. [7] highlight the relational aspect of well-being literacy. Open conversations about mental health in schools improve interpersonal skills and self-confidence [24, 25]. Well-being literacy helps individuals with the skills to maintain and improve their mental health [4].

Hypothesis 1

Well-being literacy is expected to be significantly positively associated with optimism, life satisfaction, and psychological well-being, and significantly negatively associated with psychological adjustment difficulties.

Direct and indirect effects of optimism

Having introduced well-being literacy as a key construct in promoting mental health, it is important to consider how optimism might work together with well-being literacy. Including optimism in this framework helps us understand not only its direct role in psychological outcomes, but also how it may strengthen the impact of well-being literacy on well-being and mental health outcomes through optimism. In this section, optimism is introduced as a possible mediator, helping explain how thinking patterns and language use together support better psychological outcomes.

Optimistic people perceive positive events as the results of their efforts and stable reasons, which motivates them to stay resilient and take action [26, 27]. They encourage persistence and belief in better results by focusing on the future [28]. Optimism also helps individuals to participate in daily life by identifying their strengths and pursuing their goals [29]. From a well-being literacy perspective, optimism may enhance individuals' ability to use language intentionally to support well-being. Optimistic cognitions—such as expecting positive change or interpreting setbacks as temporary—can influence the vocabulary people use, the way they frame experiences, and the messages they construct about themselves and others.

Individuals with an optimistic outlook tend to manage stress more effectively during their academic life [30]. They are more resilient when facing challenges [31]. Research shows that optimism reduces the harmful effects of negative events such as childhood trauma or pandemic-related stress [32, 33]. In addition, optimism improves mental and physical health by shaping positive emotions and thoughts, helping individuals adopt healthier habits and reducing depression symptoms [29, 34–36]. Optimism supports positive actions and strengthens relationships, helps individuals cope with difficulties and achieves emotional stability. By improving mental and physical health and social functioning, optimism creates a foundation for healthier and more fulfilling lives [27, 29, 37, 38].

Hypothesis 2

Optimism is expected to be significantly negatively associated with psychological adjustment problems and significantly positively associated with life satisfaction and psychological well-being.

Optimistic individuals also take constructive steps, focus on the positive aspects of life and believe in their ability to overcome difficulties [39]. They remain motivated even in difficult situations, which strengthens their emotional stability and supports their psychological health [40]. Using language intentionally may help people to better understand their experiences and manage

psychological adjustment problems. People use language to create psychological perspectives [21] and social construction [41] that support mental health [22]. Well-being literacy provides people with tools to expand their understanding of well-being [22], which would strengthen their optimism and help them adapt to emotional difficulties. An optimistic mindset helps people manage difficulties more effectively and maintain emotional balance. Optimists adopt healthy habits and practical coping strategies [42]. These actions allow people to better cope with stress and maintain their well-being. Optimism increases life satisfaction by encouraging positive emotions and reducing negative ones. Life satisfaction reflects how people view their circumstances and emotional experiences [23]. Well-being literacy supports this by teaching people to tell positive stories, rethink negative experiences, and make strong connections with others [4]. These skills would strengthen relationships and increase life satisfaction. Optimism also strengthens psychological well-being by reducing stress and encouraging positive coping methods. Well-being literacy complements this by helping people to use language purposefully and create meaningful expressions that support mental health [22]. Optimism and wellbeing literacy together provide powerful support for mental health. By promoting language usage ability on well-being, optimism would increase the benefits of well-being literacy and promote better mental health and well-being. These patterns of thought and action reveal the basic role of optimism in achieving positive psychological results.

Hypothesis 3

Optimism is expected to mediate the relationship between well-being literacy and psychological adjustment problems, life satisfaction, and psychological well-being.

Method

Research design

This study employed a cross-sectional survey design.

Participants and sampling

Data were collected from a total of 893 undergraduate Turkish students enrolled in various academic programs at Batman University, Türkiye. This population was selected for its relevance in validating the Well-Lit 6 scale within a non-English-speaking context. Participants were selected using purposive sampling to ensure representation across different faculties and disciplines. Inclusion criteria required students to be actively enrolled in a degree program during the data collection period. The age of participants ranged between 18 and 45 years, with a mean age of 21.53 ($SD = 3.99$). There were 58.90% females and 41.10% males. The students were

predominantly freshmen (42.89%), followed by juniors (28.44%), seniors (17.13%), and sophomores (11.53%).

Measures

Wellbeing literacy 6-item (Well-Lit 6) scale

We translated the Well-Lit 6 Scale into Turkish within this study. The original version of the scale was developed by Hou et al. [15]. Well-Lit 6 is a unidimensional six-item self-report measure to evaluate well-being literacy, focusing on vocabulary, knowledge, and language skills that can be purposefully applied to enhance or sustain the well-being of oneself or others. Each item reflects a core dimension of wellbeing literacy, including the ability to express wellbeing-related concepts, understand wellbeing information, and communicate effectively across different contexts and modalities. Although the scale does not explicitly measure intentionality, this concept underpins its design. The Well-Lit 6 was developed for use in educational settings and has demonstrated strong internal reliability across diverse samples and has been shown to be distinct from related constructs such as resilience and emotion regulation [15]. Each item on the scale is answered on a 7-point Likert scale, where 1 represents “strongly disagree” and 7 signifies “strongly agree.” A sample item is, “*I have many words I can think of to communicate about well-being.*” During the adaptation of the Well-Lit 6 scale into Turkish, a standard forward and back-translation [43] procedure was employed. Four bilingual experts with doctoral qualifications translated the scale from English to Turkish, followed by an independent PhD researcher who conducted the back-translation into English. To ensure cultural and linguistic equivalence, the process included consultation with a cultural expert familiar with wellbeing terminology in Turkish academic contexts. Feedback from this expert informed refinements to item wording and contextual relevance. Discrepancies between versions were addressed through iterative revisions and expert panel discussions, ensuring semantic accuracy and cultural appropriateness. In the final stage, the research team reviewed all items and resolved remaining minor discrepancies through consensus, enhancing the validity and replicability of the Turkish adaptation. Higher scores on the Well-Lit 6 refer to a greater level of well-being literacy. The Cronbach's alpha coefficient for the scale was 0.89. The complete list of items in Turkish is provided in the Appendix.

The optimism and pessimism questionnaire (OPQ)

We used the optimism dimension of the OPQ to measure the optimism of undergraduate students. The scale was developed by Arslan and Yıldırım [44]. Each item is rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). An example item is: “*I'm always optimistic about my future.*” Higher scores

indicate greater levels of optimism. In this study, the OPQ demonstrated a Cronbach's alpha of 0.77.

The brief adjustment scale-6

Psychological adjustment problems were assessed by the Brief Adjustment Scale-6, developed by Cruz et al. [17]. Turkish validation of the scale was conducted by Yıldırım and Solmaz [45]. The scale involves six items. Sample item of scale is: *To what extent have you felt irritable, angry, and/or resentful this week?* Each item is rated on a 7-point scale, ranging from 1 (not at all) to 7 (extremely), with higher scores reflecting greater psychological maladjustment. In the present study, the scale demonstrated a Cronbach's alpha of 0.89.

The Satisfaction With Life Scale (SWLS)

Diener et al. [46]'s SWLS was used to measure life satisfaction. Durak et al. [47] adapted this scale into Turkish. This unidimensional scale has seven items, with a sample item: *I am satisfied with my life.* We found Cronbach's alpha value as 0.79 in our study. Participants responded to items using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores reflecting greater life satisfaction.

The Riverside Eudaimonia Scale (RES)

We employed RES to measure psychological well-being. RES was originally developed by Margolis et al. [48]. It contains five items and is answered on a 7-point Likert scale, with response options ranging from 1 (strongly disagree) to 7 (strongly agree). This scale was adapted into Turkish by Yıldırım and Çağış [49]. In the present study, Cronbach's alpha was 0.82 for the RES.

Procedure

The data collection period spanned from November to December 2023. An online questionnaire was created using Google Forms, a secure platform to protect participant data. The questionnaire included an invitation text that explained the study and an informed consent form. Participants received a survey link via university email, social networking sites and student networks, along with an explanation of the study's purpose, estimated completion time, and confidentiality assurance. The inclusion criteria consisted of undergraduate students enrolled at Turkish universities who were able to understand and communicate in Turkish. Before starting the survey, participants were required to provide informed consent electronically on the first page of the survey. To reduce response bias, the questionnaire was anonymous, no identifying information was collected, and participants were encouraged to answer honestly. No participation incentives were offered. The study was conducted according to the ethical principles of the Declaration

of Helsinki. The Batman University Ethics Committee approved this research on 08.11.2023 (protocol number: 2023/06–06).

Data analysis

The dataset was complete, with no missing responses recorded. AMOS version 27 for Windows was used to conduct Confirmatory Factor Analysis (CFA) to test the factor structure of the Well-Lit 6 scale. The model fit of the CFA was assessed by checking established goodness-of-fit indices, including the Incremental Fit Index (IFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Squared Residual (SRMR) for model fit. IFI and CFI values needed to exceed 0.90, while SRMR and RMSEA values were required to stay below 0.06 and 0.08 for goodness of fit [50]. Descriptive statistics, including means and standard deviations, were reported. Normality was assessed by examining skewness and kurtosis values for each variable. Values of skewness and kurtosis falling within ± 1 represent the acceptable range for normal distribution [51]. Pearson correlation coefficients examined relationships among variables. Mediation analyses were conducted using the SPSS PROCESS macro (Model 4), with bootstrapping procedures (5,000 resamples) to estimate indirect effects and generate 95% confidence intervals [52, 53].

Results

Factor structure of the Well-Lit 6

A CFA was conducted to test the hypothesis that the Well-Lit 6 items have a single-factor structure. The results presented acceptable model indices, indicating a model fit, [$\chi^2(9) = 181.490, p < 0.001, IFI = 0.939, CFI = 0.939, SRMR = 0.043, RMSEA = 0.147$], with standardized factor loadings, [item 1 = 0.74; item 2 = 0.77; item 3 = 0.78; item 4 = 0.79; item 5 = 0.80; item 6 = 0.66]. The RMSEA value surpassed 0.10. A model possessing a small degree of freedom can yield an inflated RMSEA, suggesting an apparent poor fit [54]. Despite the RMSEA finding, the results showed that the one-factor model captured the observed data adequately.

Descriptive statistics and correlation analysis

The distribution of the variables showed that all study variables produced a normal distribution pattern, with skewness (range = -0.70 and 0.08) and kurtosis (range = -0.70 and 0.58). For this study, the internal consistency reliability coefficients for the variables were satisfactory, varying from $\alpha = 0.77$ to 0.89 (see Table 1). As for correlation analysis, findings revealed significant relationships among variables (see Table 1).

The results of correlation analysis revealed that well-being literacy had a significant positive correlation with

Table 1 Summary of descriptive statistics, internal consistency reliability and correlation analysis results

Variable	Descriptive statistics				Reliability α	Correlations				
	Mean	SD	Skewness	Kurtosis		1.	2.	3.	4.	5.
1. Well-being literacy	28.32	7.47	-0.63	0.58	0.89	1	0.43**	-0.12**	0.27**	0.59**
2. Optimism	10.34	2.78	-0.70	0.37	0.77		1	-0.25**	0.47**	0.46**
3. Psychological adjustment problems	23.68	9.39	0.06	-0.70	0.89			1	-0.26**	-0.13**
4. Life satisfaction	17.70	6.67	0.08	-0.57	0.79				1	0.31**
5. Psychological well-being	24.00	6.56	-0.45	-0.06	0.82					1

** Correlation is significant at the 0.01 level (2-tailed)

Table 2 Unstandardized coefficients for the proposed mediation model

Antecedent	Consequent			
	M (Optimism)			
	Coeff.	SE	t	p
X (Well-being literacy)	0.16	0.01	14.15	<00.001
Constant	5.83	0.33	17.65	<00.001
$R^2=0.18$ $F=200.09; p<0.001$				
Antecedent	Y ₁ (Psychological adjustment problems)			
	Coeff.	SE	t	p
X (Well-being literacy)	-0.03	0.05	-0.56	=0.573
M (Optimism)	-0.80	0.12	-6.62	<0.001
Constant	32.70	1.39	23.55	<0.001
$R^2=0.06$ $F=28.98; p<0.001$				
Antecedent	Y ₂ (Life satisfaction)			
	Coeff.	SE	t	p
X (Well-being literacy)	0.07	0.03	2.45	<0.05
M (Optimism)	1.05	0.08	13.40	<0.001
Constant	4.85	0.90	5.41	<0.001
$R^2=0.23$ $F=130.74; p<0.001$				
Antecedent	Y ₃ (Psychological well-being)			
	Coeff.	SE	t	p
X (Well-being literacy)	0.42	0.03	16.92	<0.001
M (Optimism)	0.60	0.07	8.94	<0.001
Constant	5.74	0.77	7.43	<0.001
$R^2=0.41$ $F=303.63; p<0.001$				

Number of bootstrap samples for percentile bootstrap confidence intervals: 5,000

SE standard error, Coeff unstandardized coefficient, X independent variable, M mediator variable, Y outcome variable

life satisfaction and psychological well-being, whereas it inversely correlated with psychological adjustment problems. Also, optimism was significantly negatively correlated with psychological adjustment problems, while it showed a significant positive correlation with life satisfaction and psychological well-being. Additionally, psychological adjustment problems demonstrated a significant negative correlation with life satisfaction and psychological well-being. Furthermore, a significant positive relationship emerged between life satisfaction and psychological well-being.

Table 3 The results concerning completely standardized indirect effects

Paths	Effect	SE	BootLLCI	BootULCI
Well-being literacy->Optimism->Psychological adjustment problems	-0.10	0.02	-0.14	-0.07
Well-being literacy->Optimism->Life satisfaction	0.19	0.02	0.15	0.23
Well-being literacy->Optimism->Psychological well-being	0.11	0.02	0.08	0.14

Mediation analysis

The results of the mediation analysis, conducted using the SPSS PROCESS macro (Model 4), are presented in Tables 2 and 3, as well as illustrated in Fig. 1. Direct effects (see Table 2) showed that while well-being literacy significantly predicted life satisfaction ($\beta=0.08, p<0.001$) and psychological well-being ($\beta=0.48, p<0.001$), no significant direct effect occurred for psychological adjustment problems ($\beta=-0.02, p>0.05$). Higher levels of well-being literacy was associated with greater optimism ($\beta=0.43, p<0.001$), and greater optimism was related to reduced psychological adjustment problems ($\beta=-0.24, p<0.001$), higher life satisfaction ($\beta=0.44, p<0.001$) and psychological well-being ($\beta=0.26, p<0.001$).

In terms of indirect effects, mediation analysis revealed that standardized indirect effects fell outside intervals crossing zero. The pathways from well-being literacy to psychological adjustment problems [effect = -0.10, 95% CI (-0.14, -0.07)], life satisfaction [effect=0.19, 95% CI (0.15, 0.23)], and psychological well-being [effect=0.11, 95% CI (0.08, 0.14)]—mediated by optimism—yielded significant results. The results of this analysis are reported in Table 3. These results highlight optimism as a mechanism linking well-being literacy and well-being and mental health outcomes. Well-being literacy influenced optimism, which in turn affected psychological adjustment problems, life satisfaction, and psychological well-being.

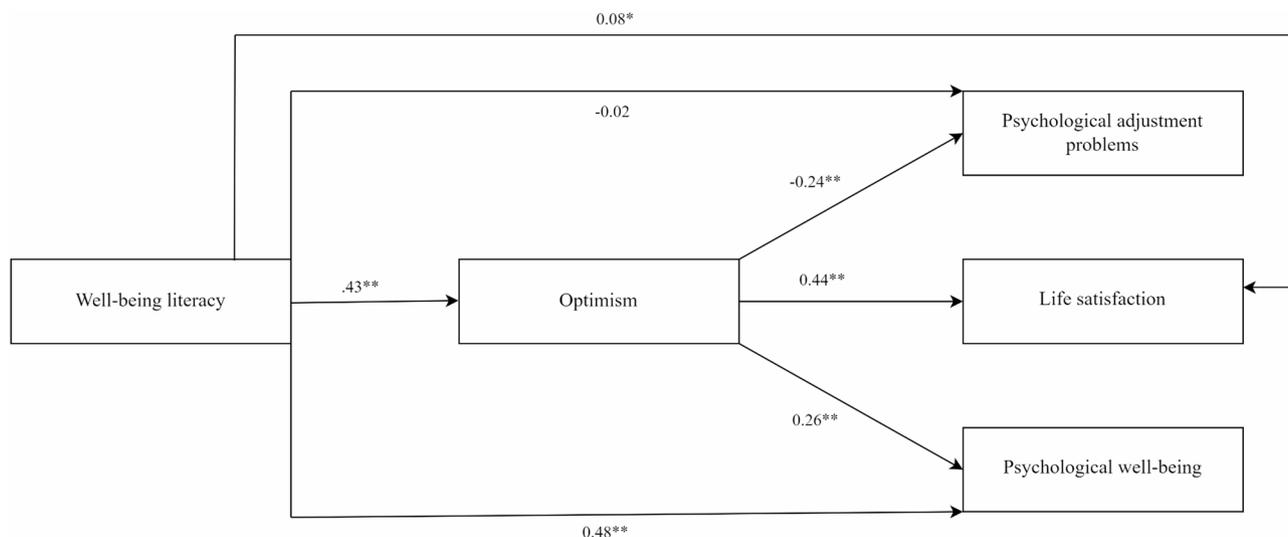


Fig. 1 The proposed hypothesized model. ** $p < 0.001$; * $p < 0.05$

Discussion

This study aimed to investigate the mediating role of optimism in the relationship between well-being literacy, psychological adjustment problems, life satisfaction and psychological well-being among Turkish undergraduate students. It also sought to validate the Well-Lit 6 among Turkish undergraduates. The emerging findings support the hypotheses of this study.

The first hypothesis suggested that well-being literacy, a language-based ability that helps individuals navigate psychological and social realities effectively, will be positively related to optimism, life satisfaction and psychological well-being, and negatively related to psychological adjustment problems. The results partially supported our hypothesis that well-being literacy positively predicted optimism, life satisfaction and psychological well-being. These results are consistent with the idea that language critically affects emotional and cognitive states; by intentionally using language, individuals can improve their well-being [3, 5]. The predictive relationship between well-being literacy and positive outcomes such as life satisfaction and psychological well-being may be explained by the nature of well-being literacy itself, which emphasizes constructive language use, self-reflection, and meaning-making. Furthermore, while well-being literacy did not predict psychological adjustment problems in our model, the negative relationship between well-being literacy and psychological adjustment problems highlights how intentional language use can reduce the negative effects of stressors by promoting emotional regulation and adaptive coping strategies [1, 2, 22]. Its weaker or non-significant direct link with psychological adjustment problems suggests that language-based well-being strategies may be more effective in contributing to positive states than directly reducing negative symptoms. By

recognizing the role of language in influencing thought and emotion, these findings expand the existing literature and show that well-being literacy is a vital determinant of both subjective and psychological well-being.

The second hypothesis suggested that optimism would be an important determinant of psychological adjustment problems, life satisfaction and psychological well-being. The data obtained from the study strongly supported this idea: optimism positively predicted life satisfaction and psychological well-being, while negatively predicting psychological adjustment problems. Research has shown that optimism functions as a protective factor and protects individuals against the harmful effects of negativity [32, 33]. As a result, the findings suggest that individuals who possess positive psychological resources—such as optimism and hope—are more likely to report fewer adjustment difficulties and greater life satisfaction and psychological well-being [55–59]. This utility model may be due to constructive coping strategies and a positive mindset that facilitates more effective responses to difficulties [30, 40]. Furthermore, the observed link between optimism and greater life satisfaction highlights how optimism fosters coping and thus strengthens overall well-being [37, 38].

The third hypothesis suggested that optimism would mediate the relationship between well-being literacy, psychological adjustment problems, life satisfaction and psychological well-being. The mediation analysis confirmed this idea by revealing that optimism partially mediates these relationships. Well-being literacy positively affected optimism, which in turn reduced psychological adjustment problems and increased life satisfaction and psychological well-being. These results are in line with theoretical frameworks that emphasize the association between language and positive well-being outcomes [4].

By developing optimism, well-being literacy provides individuals with the necessary tools to reinterpret negative experiences, maintain goal-oriented behaviors, and strengthen resilience in the face of stress factors. This perspective is echoed by social constructivist views that emphasize the power of language in shaping psychological realities and supporting adaptive functioning [21, 41]. The important indirect effects observed in this study emphasize the importance of promoting well-being literacy to support optimism and thus improve life satisfaction and psychological well-being while reducing adjustment difficulties.

Contributions

The findings of this study align with and extend broader literature in positive psychology and mental health, particularly theories emphasizing the role of language and cognition in wellbeing. The observed associations between well-being literacy, optimism, and psychological outcomes support the broaden-and-build theory, which posits that positive emotions and cognitive resources expand individuals' adaptive capacities. Additionally, the results resonate with principles of narrative therapy, highlighting how intentional language use can influence wellbeing trajectories.

The present study advances the understanding of the association between well-being literacy and psychological outcomes, namely psychological maladjustment, life satisfaction, and psychological well-being, by demonstrating that optimism partially mediates this relationship. The findings suggest the pivotal role of optimism in enhancing students' well-being and promoting positive mental health during their academic journey. These findings highlight the importance of integrating well-being literacy into university life as a strategic approach to promote optimism and enhance students' mental health. Specifically, universities can develop structured workshops or seminar series focused on building optimism through cognitive reframing, goal-setting, and strengths-based reflection. Orientation programs for first-year students could include modules on well-being literacy to help them navigate academic and social transitions more effectively. Additionally, academic advising and counseling services can incorporate the Well-Lit 6 scale to identify students who may benefit from targeted support. Faculty members might also embed well-being literacy principles into course content, particularly in psychology, education, and health-related disciplines, to foster a culture of emotional resilience and proactive mental health care. These initiatives not only support individual student outcomes but also contribute to a more supportive and psychologically healthy campus environment.

Limitations

This study has some limitations that should be considered when interpreting the results. First, the current unidimensional well-being literacy scale is designed to assess large, education-based populations; however, future research should aim to develop more comprehensive measures that capture multiple dimensions of well-being literacy. Besides, the cross-sectional design, while commonly used in research, limits our ability to conclude causal relationships or directional effects. Although the theoretical framework provides some support for the findings, a longitudinal study would help confirm the results over time. Additionally, the use of a relatively young and highly educated sample limits the generalizability of the findings to the broader population. Future research should aim to include more diverse samples in terms of age, educational background, and other sociodemographic characteristics, as well as larger sample sizes, to enhance the external validity and applicability of the findings across different life stages. Moreover, the reliance on self-reported data introduces potential biases; incorporating external assessments or objective measures of behavior would enhance the validity of future studies. Lastly, in this study, the RMSEA value was 0.147, which exceeds the commonly accepted threshold of 0.10, indicating suboptimal model fit. Although the standardized item loadings were all equal to or above 0.66, future studies may consider excluding items with relatively lower loadings to enhance model fit. Additionally, while the sample size of 893 was sufficient to test the factor structure of the scale, increasing the sample size further could contribute to more stable parameter estimates and potentially improve the RMSEA value.

Conclusion

This study contributes to the literature by validating the Turkish version of the Well-Lit 6 and demonstrating that optimism partially mediates its relationship with life satisfaction, psychological well-being, and psychological adjustment problems. These findings highlight the importance of language-based well-being strategies and optimism in promoting mental health and well-being among university students in non-English-speaking contexts. To build on this evidence, researchers are encouraged to conduct longitudinal and experimental studies to confirm the mediating role of optimism and explore additional psychological mechanisms. Educators should consider integrating wellbeing literacy and optimism-focused content into university curricula through workshops, seminars, or targeted interventions. Policymakers are urged to support funding for mental health initiatives that prioritize culturally adapted wellbeing programs, especially for student populations in linguistically diverse settings. Such efforts can enhance the reach and impact

of wellbeing literacy across educational and cultural boundaries.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s40359-025-03618-8>.

Supplementary Material 1.

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Authors' contributions

Study conception/design: MY & ÜD; Methodology: MY; Data collection: ÜD; Formal analysis: MY; Writing—original draft preparation: MY, ŞA, & ÜD; Review and editing: MY, ŞA, ÜD, & AMAA. All authors have read and agreed to the published version of the manuscript.

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Data availability

The data supporting this study's findings are available from the corresponding author, [MY], upon reasonable request.

Declarations

Ethics approval and consent to participate

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The study received ethical approval from the Batman University Ethics Committee (date 08.11.2023 and number 2023/06-06).

Consent was obtained from all participants included in the study.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

¹Department of Psychology, Faculty of Science and Letters, Agri Ibrahim Cecen University, Fırat Mahallesi Yeni Üniversite Caddesi No: 2 AE/1, Merkez, Ağrı 04100, Türkiye

²Psychology Research Center, Khazar University, Baku, Azerbaijan

³Department of Child Development, Batman University, Batman, Türkiye

⁴Department of Business Administration, Faculty of Economics and Administration, King Abdulaziz University, Jeddah, Saudi Arabia

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