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PSYCHOLOGICAL CAPITAL AS A PROTECTIVE FACTOR FOR UNIVERSITY STUDENTS' MENTAL WELL-BEING: THE ROLE OF DEPRESSION AND LONELINESS

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Abstract

Background: Given that the demanding university transition often leads to elevated distress and loneliness, impacting student well-being, this study addresses the current research gap by hypothesizing that Psychological Capital (PsyCap) enhances well-being specifically through its buffering effects against these negative emotional states. *Aims:* This study examined the relationships between PsyCap, depression, loneliness, and well-being, accounting for sociodemographic factors (gender, age). A further aim was to investigate whether depression and loneliness mediate the relationship between PsyCap and well-being. *Methods:* The research sample consisted of 213 university students (mean age = 23, 89.2% female). The data were analyzed using hierarchical regression and parallel mediation analysis in JASP and SPSS software. *Results:* The results showed that PsyCap is positively related to well-being, whereas depression and loneliness were negatively related to this construct. Moreover, the mediation analysis revealed that depression and loneliness partially mediated the relationship between PsyCap and mental well-being. *Conclusions:* Overall, these findings support the notion of psychological capital as a protective factor associated with higher well-being, both directly and indirectly through reduced negative emotional states. Strengthening PsyCap among students could therefore represent a promising direction for interventions aimed at enhancing mental health and academic functioning in the university context.

Keywords: *Psychological capital, mental well-being, university students, depression, loneliness.*

1. Introduction

The university period represents a challenging transition (Gale & Parker, 2012) marked by academic, social, and emotional demands. Student well-being extends beyond the absence of illness and includes psychological, social, and cognitive functioning necessary for a fulfilling life (Ben-Arieh, 2006). However, many students experience increased distress, loneliness, and mental health difficulties, highlighting the need to identify protective factors that support well-being (OECD, 2018; Uzman & Telef, 2015). One of the personal resources for navigating these challenges is Psychological Capital (PsyCap) defined by Luthans, Youssef, and Avolio (2007) as a positive psychological state comprising self-efficacy, optimism, hope, and resilience. Research shows that PsyCap is positively related to well-being (Avey, Luthans, Smith, & Palmer, 2010), negatively to stress (Kaur & Sandhu, 2016; Kaur & Amin, 2017) and activates inner positive strength to withstand external challenges (Yang & Yang, 2022). In contrast, depression and loneliness represent major barriers to university students' mental health. Depression is strongly linked to student lower levels of well-being (Othman, Ahmad, Morr, & Ritvo, 2019; Holm-Hadulla et al., 2021), while loneliness, intensified during the transition to university, is negatively associated with well-being and stress management (Bhagchandani, 2017; Stoliker & Lafreniere, 2015). Although the relationship between PsyCap and well-being is well established, the mechanisms underlying this link remain unclear. Therefore, it is hypothesized that PsyCap enhances well-being by buffering against depression and loneliness.

2. Objectives

The aim of this study was: 1) to analyze the relationships between PsyCap, depression, loneliness, and mental well-being, while accounting for sociodemographic factors (gender, age), and 2) to examine whether depression and loneliness mediate the relationship between PsyCap and mental well-being.

3. Methods

3.1. Sample and procedure

A research sample consisted of 213 university students (89.2% of women). The mean age was 23.04 years (minimum = 17, maximum = 53). In terms of education degree, 98 students (46%) were studying at the bachelor's degree level, 95 (44.6%) were studying at the master's or engineering level, 13 (6.1%) students were studying at the joint (bachelor's and master's degree), and 7 (3.3%) were studying at the doctoral level. Students were from the universities in Slovak republic, with the highest percentage (44.6%) studying at the Pavol Jozef Šafárik University in Košice (east of the Slovak republic).

The study utilized a quantitative cross-sectional design to collect data on mental well-being, PsyCap, depression, and loneliness from a sample of university students. University students were selected based on availability and fill in an online questionnaire via social networks from May to June 2024 and from September to October 2024.

3.2. Measures

Warwick-Edinburgh Mental Well-being Scale (Tennant et al., 2014) consists of 14 items representing hedonic and eudaimonic aspects of well-being (e.g. "I've been feeling useful"). A confirmatory factor analysis conducted by Liptáková (2025) confirmed one-factor model [$\chi 2$ (74; N = 226) = 159.528; TLI = 0.909; CFI = 0.927; RMSEA = 0.072; SRMR = 0.050; KMO = 0.892)]. Cronbach's alpha value indicated good internal consistency ($\alpha = 0.876$). *Compound PsyCap Scale* (Kačmár, Kušnírová, Dudášová, Vaculík, & Procházka, 2022) is the Slovak version of the PsyCap measurement and consists of 12 items (e.g. "Right now, I see myself as being pretty successful"). Cronbach's alpha value indicated good internal consistency for the overall questionnaire ($\alpha = 0.899$). *Depression Scale* (Van de Velde, Bracke, & Levecque, 2010) consists of 8 items and measures depressive symptoms (e.g. "How much of the time during the past week were you happy?"). A confirmatory factor analysis also showed adequate fit indices [$\chi 2$ (20; N = 226) = 68.600; TLI = 0.911; CFI = 0.937; RMSEA = 0.104; SRMR = 0.077; KMO = 0.879] (Liptáková, 2025), with a good internal consistency ($\alpha = 0.862$). *UCLA Loneliness Scale* (Steptoe, Shankar, Demakakos & Wardle, 2013) is a 3-items measurement for loneliness (e.g. "How often do you feel isolated from others?"). In the present research, Cronbach's alpha value indicated good internal consistency for the overall questionnaire ($\alpha = 0.807$).

3.3. Data analysis

Data analysis included Spearman's rho correlation, descriptive statistics, hierarchical linear regression using SPSS software, and parallel mediation analysis using JASP software.

4. Results

4.1. Descriptive statistics

As can be seen from *Table 1*, age showed a small positive correlation with mental well-being (*rho* = .165, $p < .05$) and PsyCap (*rho* = .186, $p < .01$), and a weak negative correlation with loneliness (*rho* = -.174, $p < .05$). Mental well-being was strongly and positively associated with PsyCap (*rho* = .679, $p < .001$) and negatively associated with depression (*rho* = -.426, $p < .001$) and loneliness (*rho* = -.507, $p < .001$). PsyCap was also negatively correlated with depression (*rho* = -.311, $p < .001$) and loneliness (*rho* = -.433, $p < .001$). Finally, depression was positively associated with loneliness (*rho* = .448, $p < .001$), indicating that higher levels of depressive symptoms were related to greater feelings of loneliness. The mean values, standard deviations, minimum, and maximum values are also presented in *Table 1*.

Table 1. Descriptive Statistics.

	1.	2.	3.	4.	5.
1. Age	-				
2. Mental Well-being	0.165*	-			
3. PsyCap	0.186**	0.679***	-		
4. Depression	-0.128	-0.426***	-0.311***	-	
5. Loneliness	-0.174*	-0.507***	-0.433***	0.448***	-
Mean	23.04	47.11	51.22	12.55	6.06
SD	4.79	8.10	8.29	3.35	2.09
Minimum	17	26	29	6	3
Maximum	53	70	72	23	9

Notes: Spearman's rho values are interpreted, $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

4.2. Hierarchical lineal regression

Table 2 summarizes the results of the hierarchical multiple regression analysis. In Step 1, sociodemographic variables (gender, age) were entered and accounted for 2.2% (R^2 = 0.022) of variance in mental well-being. Within this step, age showed a marginal positive association with mental well-being, whereas gender was not significantly related to this variable. In Step 2, psychological capital (PsyCap), depression, and loneliness, were added to the model, explained 56.8% (R^2 = 0.568, F (5, 209) = 53.668, p < .001) of variance in mental well-being. In the final model, PsyCap was strongly and positively associated with mental well-being, while depression and loneliness were negatively associated with this construct.

Table 2. Summary of Hierarchical Multiple Regression Analysis.

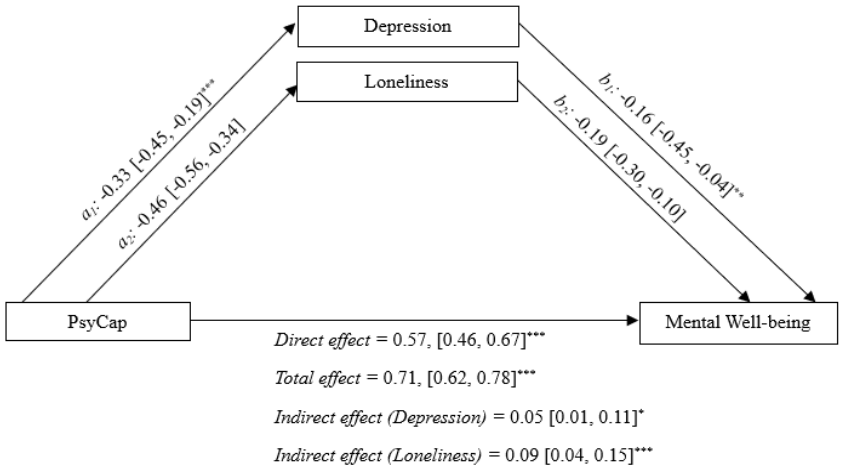
		Mental Well-being			
		B	*SE*	*β*	*p*
Step 1	Gender	1.609	1.755	0.063	0.360
	Age	0.227	0.115	0.136	**0.050**
Step 2	Gender	0.560	1.178	0.022	0.635
	Age	0	0.079	0	0.995
	PsyCap	0.546	0.051	0.560	< **0.001**
	Depression	-0.373	0.124	-0.156	< **0.01**
	Loneliness	-0.786	0.215	-0.204	< **0.001**

Notes: all the VIF values < 1.50; R^2 = 0.022 for Step 1, ΔR^2 = 0.558 for Step 2 (p < .001)

4.3. Parallel mediation analysis

To further specify and clarify the relationships among the study variables, parallel mediation analysis was conducted. A significant total effect of PsyCap on mental well-being was found (*SE* = 0.042, *CI* [0.617, 0.783], p < 0.001). When depression and loneliness were included in the model, the direct association between PsyCap and mental well-being remained significant (*SE* = 0.052, *CI* [0.461, 0.667], p < 0.001). The results of parallel mediation analysis are presented in Figure 1, indicating significant indirect associations via depression (*SE* = 0.023, *CI* [0.013, 0.106], p = 0.027) and loneliness (*SE* = 0.026, *CI* [0.044, 0.147], p < 0.001). Taken together, these findings are consistent with partial mediation, suggesting that depression and loneliness partially account for the association between PsyCap and mental well-being among university students.

Figure 1. Parallel Mediation Model of Mental Well-being, Mediated by Depression and Loneliness.



5. Discussion and conclusions

The study examined relationships between psychological capital (PsyCap), depression, loneliness, and mental well-being in university students, supporting PsyCap as a key protective factor that is related to well-being both directly and indirectly through negative emotional states.

Consistent with previous research (Avey et al., 2010; Selvaraj & Bhat, 2018) the results revealed a strong positive relationship between PsyCap and mental well-being. This supports the conceptualization of PsyCap as a positive psychological state of development that mobilizes internal resources such as hope, optimism, self-efficacy and resilience, enabling individuals to cope more effectively with academic and psychosocial demands (Luthans et al., 2007). In line with prior research evidence, depression and loneliness were significantly negatively associated with well-being. These findings corroborate earlier studies indicating that depressive symptoms and perceived social isolation substantially undermine psychological functioning and quality of life among students (Bhagchandani, 2017; Holm-Hadulla et al., 2021). The positive association between depression and loneliness observed in this study supports the view that these constructs are closely intertwined during university years. Importantly, regression analysis demonstrated that when PsyCap, depression, and loneliness were included in the model, sociodemographic variable (age) was no longer associated with well-being, suggesting that internal psychological resources may be more important for students' well-being than demographic characteristics. This highlights the importance of focusing on modifiable psychological factors when designing interventions. A key contribution of this study is clarifying the mechanisms linking PsyCap to mental well-being. The parallel mediation analysis showed that depression and loneliness partially mediated the relationship between PsyCap and well-being, indicating that PsyCap enhances well-being both directly and indirectly by reducing depressive symptoms and loneliness. These findings align with the conservation of resources theory (Hobfoll, 2011), which posits that individuals with greater psychological resources are better protected against stress-related losses, as well as with previous empirical work highlighting the buffering role of PsyCap in the context of psychological distress (Riolli, Savicki, & Richards, 2012).

From an applied perspective, the results suggest that strengthening psychological capital may represent a promising avenue for preventive and supportive interventions in higher education settings. Programs aimed at enhancing hope, optimism, resilience, and self-efficacy could help students mitigate the negative effects of loneliness and depression, particularly in increasingly digitalized and socially fragmented academic environments (Przybylski, Murayama, DeHaan, & Gladwell, 2013).

Several limitations of the present study should be noted. The cross-sectional design limits causal interpretations, and self-reported measures may have introduced response biases. Additionally, the sample characteristics may restrict generalizability. Future research should use longitudinal or experimental designs, multi-method approaches, and more diverse samples to better clarify the mechanisms linking psychological capital to mental well-being.

In conclusion, this study highlights psychological capital as a protective factor for university students' mental well-being. PsyCap appears to support positive functioning both directly and indirectly by reducing depression and loneliness, underscoring the importance of fostering positive psychological resources within university mental health promotion strategies.

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