


Research

Spiritual well-being mediates between psychological capital and emotional experiences: evidence from college students at a private residential university in India

Jerin V Philipose¹  · Rajneesh Choubisa¹  · Akash Dubey¹ 

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© The Author(s) 2025 **Abstract**

College students worldwide are encountering significant mental health challenges and positive psychological approaches are effective in addressing these issues. Psychological capital as a construct having origin from organizational psychology plays an important role in young people's education and mental health. The dimensions of psychological capital and spiritual well-being play an important role in manifesting emotional experiences, both positive and negative, among young individuals. In the contemporary scenario, where social and economic factors act as deciding factors in deciphering and influencing emotions, there is a dire need to focus on the positive developmental aspects of human behavior. We, thus, explore the interconnection between psychological capital and spiritual well-being and quantitatively investigate how both of them influence the emotional experiences of college students (N = 214). Results from the regression analysis suggest that psychological capital predicts positive emotions, whereas spiritual well-being mediates this relationship. One of the practical implications of our results suggest that these three variables have good interventional potential for well-being promotion studies.

Keywords Psychological capital · Spiritual well-being · Positive emotions · Negative emotions · Students · Young adults

1 Introduction

The transition from school-going to college-going is a decisive period for young adults. During this period, college students start to form new relationships and develop a sense of autonomy in identity [1]. Students face challenges in their academic coursework, such as keeping deadlines in check and maintaining adequate GPA scores, which are important for job placements. As a consequence, psychological problems come up in the form of stress, anxiety, and depression.

A recent study conducted in nine Indian states encompassing four regions (North, South, East, and North-East) showed that 33.6% of students (out of 8542) reported moderate to severe depression, and 23.2% of students revealed moderate to severe anxiety issues [2]. Moreover, a recent comprehensive literature review identified that 12 overarching categories of mental health challenges, including academic stress, anxiety, depression, internet addiction, loneliness, and low self-esteem, also plagues Indian college students [3]. Another study conducted in a South Indian private college confirmed that a large majority of the students report depression and anxiety issues [4]. The COVID-19 pandemic has made young adults, including college students, more vulnerable to mental health issues due to the aftereffects of stringent lockdowns

✉ Jerin V Philipose, p20200465@pilani.bits-pilani.ac.in | ¹Department of Humanities and Social Sciences, Birla Institute of Technology and Science, 6168-P, New Academic Building, Pilani, Rajasthan, India.



and containment, implemented for a significant period of time [5, 6]. The pandemic also caused a significant rise in internet addiction and digital screen time among college students, causing them to risk their mental health [7, 8]. Recent studies among college students conclude that the upward trend of mental health problems need to be addressed properly [9, 10].

In the face of growing mental health issues among college students, positive psychology promises to fix mental health issues by focusing on human strengths and potential rather than the absence of mental illness [11]. Psychological Capital (PsyCap) is a well-studied construct in positive psychology literature, especially in organizational settings [12]. Psychological capital is a positive state of development that helps one manage difficult situations, which consists of four components: hope, self-efficacy, resilience, and optimism (acronym 'HERO') [13]. PsyCap is a personal resource that guides students' behaviors and thoughts, keeping them engaged in their academic endeavors [14]. PsyCap helps to increase intrinsic motivation among college students, enabling them to pursue academic targets. In academic settings, optimism is essential for investing effort and perseverance to succeed. Self-efficacy helps students believe in their abilities, hope maintains determination, and resilience is important for learning and growing from challenges [15]. PsyCap facilitates the development of diverse strategies for overcoming obstacles and recovering from setbacks [14]. Previous studies reveal that PsyCap is a critical component in beneficial outcomes, including academic achievement, academic engagement, and improvement in quality of life [14, 16]. Al-Sultan et al. [10] found that PsyCap is a significant predictor of well-being among Saudi Arabian undergraduate students. Similarly, among Iranian nursing students, Parviniannasab et al. [17] concluded that PsyCap and mental health have a positive relationship. Although studies on the influence of PsyCap in education are gaining momentum, there is a dearth of studies in Indian context. Most research on PsyCap in educational settings pertain to academic achievement or learning outcomes [1, 14, 18]. More importantly, Datu et al. [19] had observed that PsyCap has received "limited attention" in student settings. Additionally, Carmona-Halty et al. [20] note that PsyCap has recently started to be evaluated in academic settings.

Emotional experiences involve complex psychological processes of cognitive appraisals, subjective feelings, and physiological responses [21, 22]. Emotional experiences are triggered by events or situations that influence our thoughts and behaviors. Emotional experiences can vary and may be multifaceted based on cultural norms, complexity and subjectivity [23]. Nevertheless, emotions are generally classified as positive and negative experiences. Positive emotions refer to pleasant feelings that enhance well-being [21, 22]. Positive emotions include feelings of joy, happiness, serenity, contentment, gratitude, love, etc. [24]. Experiences of positive emotions are important for psychological well-being and buffering depression and anxiety. Positive emotions also enhance cognitive functions, creativity, and effective decision-making [25]. On the other hand, negative emotions are characterized by unpleasant or undesirable feelings that can lead to impaired functioning [21, 22]. Negative experiences predominantly comprise anger, sadness, fear, disgust, envy, etc. [24]. Constant and unmitigated negative feelings lead to mental health problems like depression and anxiety and physiological problems like cardiovascular diseases [26]. There is a dearth of literature on the impact of PsyCap on emotional experiences, which is very important to nurture positive feelings and getting rid of the negative feelings that ultimately lead to significant mental health problems. Since higher PsyCap makes individuals more capable of coping with negative emotions [27], there is a dire need for higher educational institutions to promote psychological capital interventions (PCI) [28] among college students.

1.1 Psychological capital and emotional experiences

PsyCap, as a positive resource, helps to enhance positive emotional experiences. Conservation of Resources (COR) theory is an appropriate theoretical framework that fits the study propositions [29]. According to COR, the attainment and preservation of resources are important to maintain mental health [29]. When these resources are threatened or lost in the face of adverse circumstances, mental well-being is compromised. For e.g., the loss of social support during the COVID-19 restrictions adversely impacted college students' mental health [30]. The concept of resource caravan in COR theory states that resources cannot be kept as an individual entity but travel as packs or caravans emerging from supportive social conditions [29]. This view is perfectly suited for PsyCap, which consists of multiple dimensions synergistically leading to psychological well-being. Additionally, the facets of PsyCap are malleable and develop according to the changes in the social environment. So, an enlightening and supportive campus atmosphere provided by healthy relationships with friends and faculty on campus is important for academic and career growth. Previous literature suggests that PsyCap as a positive resource caravan is beneficial to academic performance [15]. Apart from the relation to academic endeavors, no further progress in research is visible on the impact of PsyCap as a positive resource for college students' emotional experiences. Previous literature also suggests the advantages of PsyCap that improve subjective well-being is facilitated

by positive emotions [31]. Prior research also identified the positive relationship between PsyCap and positive emotions [32]. The promotion of PsyCap in educational settings is instrumental in building positive emotions [20, 33]. In fact, Carmona-Halty et al. [33] focused on the limited research linking positive emotions to higher-order PsyCap, emphasizing the need to differentiate between its individual HERO components and the overall PsyCap construct. Cao et al. [9], among Chinese doctoral students, found a significant positive correlation between PsyCap constructs and positive emotions. Negative emotions exhibited an inverse relationship with PsyCap constructs, indicating that PsyCap enhances positive emotions while diminishing negative emotions. According to Li et al. [27], PsyCap helps students to cope much better with stressful circumstances and adapt to outside, while lower PsyCap leads to negative consequences and is highly susceptible to emotional problems. Due to lack of positive emotions, college students may succumb to 'languishing,' which is regarded as a condition characterized by extremely low well-being [34]. Selvaraj and Bhat [11] explain that PsyCap interventions on college campuses can significantly alleviate mental health issues. However, very scant literature has been found in the Indian context regarding the efficacy of PsyCap for improving mental health in college campuses. The only exception being a study by Paul and Sahoo [35] among MBA students at a private university in Bhubaneswar, India, which found that PsyCap has a direct positive relationship with positive emotions, while negative emotions are negatively related to PsyCap. Our study therefore aims to examine the effects of PsyCap on positive and negative emotions of students from a private residential university campus in North India. Hence, we hypothesize:

H₁: PsyCap predicts positive and negative emotional experiences among college students.

1.2 Mediation of spiritual well-being

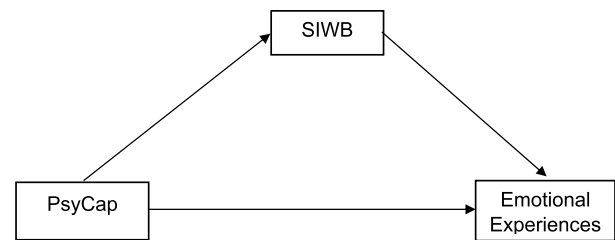
Spiritual well-being (SIWB) is the affirmation of life in a relationship with God, self, community, and an environment that nurtures and celebrates wholeness [36]. Spiritual well-being is demonstrated through meaningful life schemes and the development of self-efficacy beliefs, which fosters personal empowerment [37]. These agency beliefs refer to the individual's perception as an active participant who shapes their life course through their choices and actions, considering the opportunities and constraints of their circumstances [38, 39]. The spiritual framework emphasizes that self-efficacy beliefs are crucial for overcoming challenges and achieving optimal functioning [40].

Literature confirms that SIWB impacts young adults' mental health in various contexts. SIWB is found to be positively related to positive emotions and negatively to negative emotions among college students from Arunachal Pradesh in India [41]. Leung and Pong [42], found that SIWB negatively relates to negative emotions among Chinese college students. Maazallahi et al. [43] suggests that improving SIWB could produce positive changes among college students due to transitional challenges from adolescence to youth. Pong [44], among Chinese students, found that SIWB enhances the experiences of positive emotions facilitated by engagement in prayer and meditation. These studies emphasize a strong connection between SIWB and emotional experiences while substantiating the importance of positive mental health. Though it seems apparent that SIWB at work has been explored from an interventional perspective [45], more conclusive evidence is required to support its implications in educational and other settings.

As PsyCap is considered a crucial factor in deciphering positive emotions, there is a high chance that SIWB will intervene in their relationship. Previous literature sheds light on the link between PsyCap and SIWB. Kalhori et al. [46] found that SIWB and PsyCap are positively related among Iranian college students. Similarly, Parviniannasab et al. [17], among Iranian nursing students, found a positive link between PsyCap-SIWB, where PsyCap partially mediated the relationship between SIWB and mental health. Literature also provides evidence on the mediating role of SIWB. Another study by Nooripour et al. [47] found that SIWB, along with two facets of PsyCap viz. hope and resilience, predicted the stress of COVID-19 among Iranian adults using a machine learning model. From all the previous literature, the potential of SIWB as a positive resource to enhance positive experiences becomes evident. There has been no prior research on Indian college students regarding the mediating effect of SIWB between PsyCap and emotional experiences.

Based on the premises of COR theory, SIWB can intervene between PsyCap and emotional experiences. The presence of PsyCap as a resource caravan may facilitate the enhancement of SIWB. According to COR, a psychological resource can facilitate the building of another resource through resource 'gain spirals' [48]. COR approach posits that when the levels of personal resources exceed the environmental demands, well-being increases, and distress decreases [29]. Through this, our model assumes that the PsyCap is positively related to the SIWB, and SIWB is positively related to positive experiences and negatively to negative experiences. Based on this, an indirect mediating effect of SIWB can explain the relationship between PsyCap and emotional experiences. Besides, previous literature also confirms that PsyCap factors are beneficial for developing SIWB [17, 46]. In addition to PsyCap, SIWB can also be nurtured across contexts, eventually leading to

Fig. 1 Research model depicting the associative relationship of PsyCap on emotional experiences and the mediating role of SIWB



higher psychological well-being [35]. The enhanced SIWB gives an additional effect with PsyCap in experiencing more positive emotions and facing difficult situations more easily. Therefore, we also analyze the mediating effect of SIWB between PsyCap and emotional experiences (see Fig. 1).

H₂: SIWB mediates the relationship between PsyCap and Emotional experiences.

2 Method

2.1 Participants and research design

We employed a cross-sectional survey design for this study and adopted a convenient non-probability sampling approach. We selected students enrolled in two courses from a few departments and distributed the questionnaires in two separate class hours to ensure maximum participation. A total of 237 questionnaire forms were distributed for data collection to students, and all responded to it. After carefully pruning the dataset, we removed incomplete entries and outliers and finally had a sample of $N = 214$. Using G-Power software, with 80% power, with an alpha (α) of 0.05 and a small effect size of 0.05, the required sample size came out to be $n = 196$, which is appropriate for the current study [49, 50]. Small effect size helps to ensure a large sample size and to detect the significant relationships between variables [51]. The participants were a diverse group of students from a reputed private residential university in Rajasthan, India, aged between 18 and 23 years. For convenience, we divided the sample into two age groups as: 18–20 ($n = 130$, Mean age = 19.4, $SD = 0.65$) and 21–23 ($n = 84$, Mean age = 21.48, $SD = 0.64$). Of the participants, 82.24% were males ($n = 176$), and 17.76% ($n = 38$) were females.

2.2 Data collection procedure

We resorted to the old school method and collected data via the paper and pencil approach. We obtained informed consent before administering the measurement tools and adhered to the guidelines of the Helsinki Declaration [52]. We distributed English versions of all scales, which were already standardized per necessary criteria and procedures. A booklet of three self-reported questionnaires was distributed to the young participants who agreed to participate. Participants were informed that joining the study was voluntary and that their identities would remain anonymous and confidential. No specific time limit was prescribed for filling out the form, though students were requested to complete it within 15–20 min. This data collection procedure was conducted in two sessions during August 2024.

2.3 Measures

Psychological Capital-Student Version (PsyCap-S). This scale was developed by Matos and Andrade [53] to measure PsyCap among the student population based on the theoretical foundations of Luthans et al. [13], which presented a simplified version of the PsyCap scale designed to assess the work environment. A total of 12 items were included in the questionnaire, with 3 items each measuring the four factors: Hope, Efficacy, Resilience, and Optimism (HERO) with a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The sample item included: “I can find many ways to fulfill my dreams through my studies.” The reliability coefficient, namely MacDonald’s omega ($\omega = 0.83$), met the cut-off criteria for our sample [33, 54]. Scores ranged from 12 as the lowest to 60, where scores above 45 meant high psychological capital.

The Spirituality Index of Well-Being (SIWB). This scale was developed by Daaleman and Frey [55] to measure spiritual well-being. It is a 12-item tool that assesses individuals’ views of their spiritual quality of life. The scale consists of

self-efficacy and life scheme subscales, each containing six items rated on a five-point scale (1 = strongly disagree to 5 = strongly agree). Sample items include, “*There is not much I can do to help myself.*” The reliability coefficient, calculated through Macdonald’s omega ($\omega = 0.90$), was satisfactory. The scoring of the SIWB ranges from 12, representing the lowest level of spiritual well-being, to 60, indicating the highest level of spiritual well-being.

Scale of Positive and Negative Experiences (SPANE). Diener et al. [56] developed this scale consisting of 12 items with six items each for measuring positive and negative experiences. Sample items included (“*Pleasant and Happy*” for Positive experiences and “*Unpleasant and Sad*” for Negative experiences). Participants assessed the frequency of feelings listed over the past four weeks and were rated from 1 = very rarely or never to 5 = very often or always. The internal consistency reliability calculated by estimating Macdonald’s omega was found to be satisfactory for Positive experiences ($\omega = 0.87$) and Negative experiences ($\omega = 0.83$). The scores range from 6 (the lowest) to 30 (the highest) for positive and negative experiences.

2.4 Data analysis

We analyzed data using Jamovi version 2.6.13 software. We first examined the presence of common method bias to ensure the integrity of measures. We performed Confirmatory Factor Analysis (CFA) to test the model fitness of the measures utilized. Descriptive statistics were computed for each scale and the subscales of PsyCap-S and its sub-factors (hope, self-efficacy, resilience, and optimism), SIWB and its sub-factors (self-efficacy and life scheme), and SPANE and its sub-factors (positive and negative emotional experiences). We ran Pearson correlations to evaluate all variables’ relationships and determine their direction. Since none of the PsyCap and SIWB dimensions were correlated with negative experiences, we discarded them from further data analyses. Linear regression analysis was employed to determine if PsyCap predicted positive experiences, both as an individual factor and a collective one [57, 58]. Finally, we ran mediation analysis to examine the intervening effect of SIWB between PsyCap and Positive Experiences.

3 Results

3.1 Analysis of common method bias

We utilized questionnaires that employed five-point Likert scales, which raised the concern of participants responding uniformly across items. This may result in Common Method Bias (CMB) [59], primarily due to the same response anchors for the PsyCap and SIWB scales. We examined the possibility of CMB through a common latent factor test using CFA [59]. Utilizing CFA is considered a more robust method because the differences between single factor versus multifactor models can be tested using the chi-square difference test [60, 61]. The results from the CFA indices (chi-square/degrees of freedom (χ^2/df) = 7.61, comparative fit index (CFI) = 0.42, goodness-of-fit index (GFI) = 0.73, normed fit index (NFI) = 0.36 and root mean square error of approximation (RMSEA) = 0.13) revealed a poor model fit, showing the low threat of CMB in our sample dataset.

3.2 Confirmatory factor analysis

We conducted Confirmatory Factor Analysis using Jamovi software (see Table 1). This study combined 36 items, 12 items from each of the three scales. Byrne [62], suggests maintaining a 10:1 ratio for indicators to samples, indicating that a sample size of 360 is necessary for our study to conduct Confirmatory Factor Analysis (CFA). We only had 214 data points, which may increase Type-1 error [63]. We utilized the item parceling technique to capture a significant portion of the actual score variance [64]. We randomly created parcels by grouping all the items within each scale: for the Hope subfactor in PsyCap, we created two parcels—one containing two items and the other containing 1 item. Similarly, we parcelled the items for the other three factors of PsyCap: Self-Efficacy, Optimism, and Resilience. Items in SIWB were parcelled based on its Self-Efficacy and Life Scheme subfactors, randomly taking two parcels and dividing three items each for both. Finally, the SPANE scale was parcelled by dividing the Positive and Negative sub dimensions into two parcels containing three items each. 16 indicators were used to conduct our CFA models to maintain a 10:1 ratio. We initially conducted the eight-factor model that included all subfactors of the scales independently, and the results were significant. We ran till one-factor model combining all scales including subfactors of PsyCap and SIWB. Out of all models, eight, seven and six-factor models showed excellent fit indices (Chi-square/df (χ^2/df), CFI (Comparative Fit Index), TLI

Table 1 Summary of confirmatory factor analyses for measurement variables (N = 214)

Models	χ^2	df	CFI	TLI	RMSEA	SRMR
8-Factor Model (HO, SE, RE, OP, SE-SIWB, LS, PE, and NE)	768***	559	0.94	0.93	0.04	0.06
7-Factor Model (HO, and SE Combined; RE, OP, SE-SIWB, LS, PE and NE)	780***	565	0.93	0.93	0.04	0.06
6-Factor Model (HO, SE and RE combined; OP, SE-SIWB, LS, PE and NE)	830***	573	0.92	0.91	0.05	0.06
5-Factor Model (HO, SE, RE and OP combined; SE-SIWB, LS, PE and NE)	845***	575	0.92	0.91	0.05	0.07
4-Factor Model (HO, SE, RE, OP and SE-SIWB combined; LS, PE and NE)	870***	569	0.91	0.90	0.05	0.07
3-Factor Model (HO, SE, RE, OP, SE-SIWB and LS combined; PE and NE)	944***	569	0.89	0.87	0.05	0.07
2-Factor Model (HO, SE, RE, OP, SE-SIWB, LS and PE combined; NE)	1005***	559	0.86	0.85	0.06	0.08
Single Factor Model (All combined)	1061***	553	0.84	0.82	0.06	0.09

HO- Hope, SE Self-Efficacy, OP- Optimism, RE- Resilience, SE-SIWB- Self-Efficacy Spirituality Index of Well-Being, LS- Life Scheme, PE- Positive Experiences, NE- Negative Experiences

*** $p < 0.001$

(Tucker-Lewis Index), and RMSEA (Root Mean Squared Error of Approximation) where five to one-factor models revealed fit indices in an acceptable range of values [65].

3.3 Descriptive and correlational analysis

The descriptive and correlational statistics of factors and dimensions of each of the three constructs have been tabulated (see Table 2). The correlation matrix shows that PsyCap positively correlates with all of its constituent dimensions, furthering the internal validity of the scale. Similarly, spiritual well-being (SIWB) positively correlates with dimensions of self-efficacy and life scheme. Of all the correlations between the scale dimensions, most of the dimensions are positively and significantly correlating (see Table 2). Negative experiences showed no significant correlations with PsyCap or SIWB factors and their dimensions.

3.4 Regression analysis

For our H₁, we ran a linear regression to analyze the prediction of psychological capital on positive experiences (see Table 3). Regression results suggested that PsyCap positively predicts positive experiences ($\beta = 0.26$, $p < 0.001$), with

Table 2 Descriptive statistics and Pearson correlation coefficients for the measurement variables (N = 214)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. PsyCap	45.50	6.38	1									
2. Hope (PsyCap)	11.60	1.96	0.81**	1								
3. SE (PsyCap)	11.20	2.00	0.68**	0.44**	1							
4. Resilience (PsyCap)	10.90	2.24	0.72**	0.40**	0.35**	1						
5. Optimism (PsyCap)	11.90	2.29	0.78**	0.63**	0.31**	0.38**	1					
6. SIWB	41.20	9.31	0.41**	0.34**	0.26**	0.28**	0.34**	1				
7. SE-(SIWB)	21.10	5.10	0.42**	0.33**	0.26**	0.35**	0.30**	0.88**	1			
8. LS-(SIWB)	20.00	5.41	0.31**	0.27**	0.20*	0.16*	0.29**	0.89**	0.57**	1		
9. PE	21.10	4.14	0.26**	0.20*	0.18**	0.25**	0.16*	0.42**	0.37**	0.36**	1	
10. NE	18.50	4.63	0.01	0.01	0.08	-0.05	-0.01	-0.13	-0.11	-0.12	-0.06	1

PS: SE is a sub-scale component for PsyCap and SIWB. While reporting, we segregate them by writing “SE-PsyCap” and “SE-SIWB”

PsyCap: Psychological Capital, SE: Self-Efficacy, SIWB: Spirituality Index of Well-Being, SE-SIWB: Self-Efficacy of SIWB, LS: Life Scheme of SIWB, PE: Positive Experiences, NE: Negative Experiences

** $p < 0.01$; * $p < 0.05$

7% of variance explained. As the initial check of regression analysis was necessary for checking mediation, we ran partial and indirect regressions using mediation analyses.

3.5 Mediation analysis

To understand the mediating effects of variables, we ran a mediation analysis through the medmod module of Jamovi 2.6.13 software. Bootstrapping was used for mediation with a resampling value of $n = 5000$. Bootstrapping produces precise outcome that aligns with the model's original input and output [66]. Direct, indirect, and component effects were analyzed, resulting in the total effects for each model.

We analyzed the combination where PsyCap is the predictor and positive experiences as the outcome variable, with spiritual well-being as a mediator. According to Table 4, the direct effect of the PsyCap-PE path shows an estimate of 0.07 with a β value of 0.11, coming out to be non-significant ($p = 0.10$). The path estimates between PsyCap-SIWB with a β value of 0.41 ($p < 0.001$) lies within a positive confidence interval range (0.40 and 0.79) and SIWB-PE with a β value of 0.37 ($p < 0.001$) lies within a positive range of (0.10 and 0.23) also came out significant. The indirect effect of the PsyCap-SIWB-PE path shows an estimate of 0.10 with a β value of 0.15 ($p < 0.001$) within a positive range of lower and upper confidence intervals (0.05 and 0.15). Finally, the total impact of the PsyCap-PE path shows an estimate of 0.17 with a β value of 0.26 ($p < 0.001$) lying within a positive range of lower and upper confidence intervals (0.08 and 0.26). The overall results conclude the presence of full mediation of spiritual well-being because the indirect and component path estimates came out significant and direct effect was non-significant (see Fig. 2). Thus, we accept hypothesis H_2 and conclude that SIWB mediates between PsyCap and positive experiences.

Table 3 Regression analysis of Positive Experiences (PE) with PsyCap

Predictor	B	SE	β	t	R ²	F
Constant	13.35	1.98		6.76	0.07***	15.7***
PsyCap	0.17	0.04	0.26***	3.96		

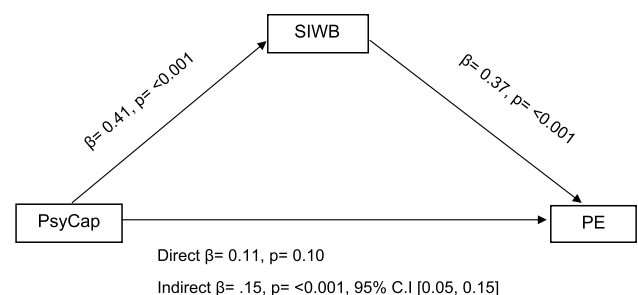
*** $p < 0.001$

Table 4 Mediation estimates of SIWB between PsyCap and PE (N = 214)

Types	Effect	Estimate	SE	95% C. I		β	z
				LL	UL		
Direct	PsyCap \Rightarrow PE	0.07	0.04	-0.01	0.16	0.11	1.65
Component	PsyCap \Rightarrow SIWB	0.59	0.09	0.40	0.79	0.41***	6.50
	SIWB \Rightarrow PE	0.16	0.03	0.10	0.23	0.37***	5.51
Indirect	PsyCap \Rightarrow SIWB \Rightarrow PE	0.10	0.02	0.05	0.15	0.15***	4.20
Total	PsyCap \Rightarrow PE	0.17	0.04	0.08	0.26	0.26***	3.97

*** $p < 0.001$

Fig. 2 Standardized results of mediation model when SIWB mediates between PsyCap and PE



4 Discussion

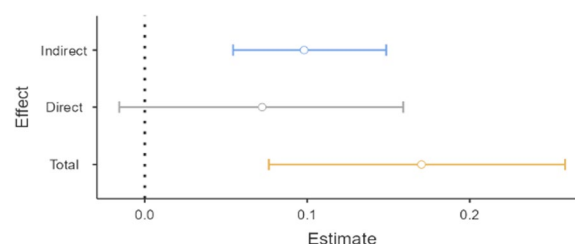
The present study examined the mediation of spiritual well-being between psychological capital and emotional experiences. The results support the hypothesis that SIWB mediates between PsyCap and positive emotional experiences. In contrast, no significant predictive relationship existed between PsyCap, SIWB, and negative experiences.

First of all, correlational analysis indicates that negative experiences show no significant relationship between PsyCap and SIWB. This contradicts previous literature, which states that PsyCap and SIWB are inversely related to negative experiences [9, 41, 67]. PsyCap and SIWB do not impact negative experiences to any magnitude, positive or negative, among college students in this sample. The mean scores of negative experiences are also lesser than positive experiences showing that students experience more positive emotions in academic settings. The constituent factors of both PsyCap and SIWB also did not show any significant correlation with negative experiences. From these, we can conclude that positive resources like PsyCap or SIWB do not influence deciphering negative emotions among these chosen participants. PsyCap and SIWB showed a significant positive relationship with positive experiences, whereas PsyCap and SIWB factors also showed significant positive relationships. Upon a closer look, it is evident that SIWB and its constituents better manifest while experiencing positive emotions. PsyCap and its factors showed weaker correlations with Positive emotions than SIWB and its dimensions. The positive relationship of PsyCap and SIWB in positive experiences is justified in previous literature [9, 41, 67]. However, the lack of impact of negative experiences (even in the inverse direction) needs to be analyzed carefully. Here, we can assume that college students in this sample are generally happier than those in distress. Other factors might contribute to the negative emotional experiences, like loneliness, stress, or academic burnout, but this constitutes a separate line of research. Due to the non-significance of negative emotions, we have not taken up this sub-dimension for further data analysis and hypotheses testing.

Secondly, we tested the first hypothesis (H_1) by analyzing the predictive relationship of PsyCap on positive experiences. PsyCap predicts positive experiences among college students. However, when four PsyCap dimensions were included as predictors instead of a single PsyCap, none of them predicted positive experiences, which is contradictory to the previous study conducted in the Indian context, where resilience, hope, and optimism were found to be significant predictors [35]. This finding gives the impression that PsyCap as a single higher-order factor is more beneficial than individual factors among college students [33]. This also proves the theoretical standpoint of COR theory as resource caravans exist as group of resources acting synergistically for well-being [29]. Previous literature also shows evidence and applicability of COR theory among college students [68, 69]. PsyCap fosters positive experiences among college students in this sample. Although the presence of external, objective resources like laptops, finance, online resources, stable internet, etc., are important for academic objectives, during adverse circumstances, internal resources like PsyCap are important for college students to be able to maintain their mental health in check [69]. As per the COR theory, Psychological Capital (PsyCap) is a protective factor and a valuable personal resource for enhancing students' positive emotional experiences. When we analyzed the reciprocal relation of H_1 where PsyCap as an outcome, positive experiences became a significant predictor. According to Carmona-Halty et al. [20], PsyCap and positive emotions exhibited a reciprocal relationship. Positive affect also builds PsyCap as a positive resource by seeking more productive opportunities and making healthy relationships with peers and teachers. Positive experiences also encourage coping with academic setbacks by improving PsyCap in accordance with the encouraging academic environment. Our study proves that this relationship is also applicable to college students, which can fuel future research in academic settings. Previous literature in the Indian context proves that positive traits as resources are favorable for positive mental health among college students and young adults [41, 70–72]. Research also shows that better family and institutional support, healthy interpersonal relationships, and productive leisure activities are pertinent to the well-being of Indian college students [72, 73]. From this study, we identified that PsyCap is also important for nurturing well-being among college students. A recent Indian study indicated that colleges with robust mental health initiatives reported higher well-being among students compared to those lacking such programs [72].

And finally, we analyzed spiritual well-being's mediating role between psychological capital (PsyCap) and positive experiences (see Fig. 3). Spiritual well-being fully mediates between PsyCap and positive experiences. There is no direct relation between PsyCap and positive experiences without spiritual well-being. PsyCap showed a positive relationship with SIWB, and SIWB showed a positive relationship with positive experiences (indirect effect). This is

Fig. 3 Mediation estimate plot when SIWB mediates between PsyCap and PE



the first study to analyze the intervening effect of spiritual well-being between PsyCap and positive experiences among college students. Our study proves that PsyCap needs to be nurtured strongly with SIWB to experience positive emotions among Indian college students. Kalhori et al. [46], among Iranian college students, found a positive relationship between PsyCap and SIWB, which suggests that the SIWB is vital to enhancing PsyCap. Similarly, Parviniannasab et al. [17] found that SIWB is a positive indicator for PsyCap among Nursing students in Iran.

Spiritual coping through cognitive or behavioral efforts to maintain meaning and purpose while connecting with a higher power (God) helps mitigate challenges arising from difficult situations. PsyCap fosters SIWB by promoting deeper connections, meaning, and purpose [17]. According to the COR theory, the accumulation of resources encourages the generation and activation of other resources [29]. From the positive pathway of PsyCap to SIWB, it is true that PsyCap encourages the enhancement of SIWB among college students with an upward spiralling of witnessing positive experiences. Cultural psychology provides evidence that collective belonging within a group, particularly in an academic setting, fosters an interdependent model of the self. In this model, individuals feel deeply connected to others and are mindful of how their emotions may affect those around them [74]. In contrast, individualism represents an independent view of the self, where individuals perceive themselves as separate from others, and the group does not influence their emotional expressions [74]. The academic environment significantly fosters this collectivistic tendency, leading to better appraisal of positive experiences.

4.1 Practical implications

Based on the findings from this study, PsyCap and SIWB play a prominent role in enhancing positive experiences, suggesting an interventional potential. As both PsyCap and SIWB are mental states that are open to change according to the environment [28], one can use these variables to conceive potential interventions that can certainly produce positive changes on campuses. PsyCap interventions have been utilized successfully in educational settings. Finch et al. [75] used PsyCap interventions among final-year female high school students in Australia to reduce distress and increase levels of psychological well-being. Solms et al. [76] have utilized PsyCap intervention alongside self-compassion (which could lead to SIWB). PsyCap-only intervention among doctoral students in the Netherlands reduced work pressure and increased well-being outcomes, including positive affect. These studies provide support to the idea of adopting an interventional framework to impart PsyCap interventions when considering the contextual factors suited for Indian settings.

Interventions utilizing SIWB have also been utilized to enhance psychological well-being. Singh and Bandyopadhyay [77] successfully utilized a psycho-spiritual well-being intervention among Indian college students. Paul and Sahoo [35] observed that spiritual practices, including meditation, listening to spiritual music, and reading spiritual literature, have significantly helped increase PsyCap among management students on an Indian campus. Park et al. [78] showed that Yoga and Mindfulness interventions increased positive emotions among 18 years or older adults in the USA. Spiritual interventions like yoga and meditation do not require religious orientation, which can be applied on college campuses. Even without these sophisticated interventions, giving constructive and positive feedback, supporting autonomy, and providing a clear roadmap for academic achievement by teachers also significantly enhances PsyCap and SIWB [9, 33]. This study calls for future extensions in Indian college campuses wherein variables such as, PsyCap and SIWB can be used effectively owing to their interventional potential.

4.2 Limitations & recommendations for future research

In spite of the capability of this study to understand the impact of PsyCap and SIWB on positive and negative experiences, it is not immune to limitations. *First*, this study was restricted to a specific residential university campus where the gender distribution was somewhat skewed. The sample size and gender differences may plausibly hamper the generalization of

the results. Larger samples drawn from diverse contexts and heterogeneous representations of the same will naturally produce meaningful results. *Second*, the study's cross-sectional nature may be misleading because the error arising from the response bias could not be avoided. The mediation effect of spiritual well-being needed to be tested through a longitudinal study since the cross-sectional approach may not detect the true mediation effect. Future research that takes a prospectively different approach with multiple sampling timeframes may discover more factors to overcome representation biases, measurement invariance, and interpretation. *Third*, more variables or constructs, including in-depth qualitative analysis, should be considered to check the interconnection between the variables adequately. This would reduce the time, effort, and resources needed to conduct interventional research. *Fourth*, the non-significant effect of negative experiences must be verified in the future, so it could be exciting to further explore any theoretical advancements or deviations from what is currently reported.

5 Conclusions

The current study showed that spiritual well-being is mediated by psychological capital and positive experiences. Research indicates that interventions focusing on spiritual well-being and psychological capital are crucial for promoting positive mental health among college students. Negative experiences do not influence this sample's explanation of psychological capital and spiritual well-being. From a conservation of resources perspective, spiritual well-being plays a more prominent role in building positive experiences than psychological capital. Interventions based on spiritual activities with psychological capital might certainly benefit college students. Future research from other parts of the country is important for advancing positive psychology in higher education and checking the potential of psychological capital and spiritual well-being on young adult population and college students.

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Data availability The data supporting the results will be available upon request to the first author.

Declarations

Ethics approval and consent to participate This study was approved by the Institutional Human Ethics Committee BITS-Pilani, Pilani Campus with approval number IHEC/BITS/A/23/2022. All the respondents were oriented, and informed consent was obtained before the start of the survey.

Clinical trial number Not Applicable.

Competing interests The authors declare no competing interests.

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References

1. Chen PL, Lin CH, Lin IH, Lo CO. The mediating effects of psychological capital and academic self-efficacy on learning outcomes of college freshmen. *Psychol Rep.* 2023;126(5):2489–510. <https://doi.org/10.1177/00332941221077026>.

2. Cherian A, Armstrong G, Sobhana H, Haregu T, Deuri S, Bhat SU, et al. Mental health, suicidality, health, and social indicators among college students across nine states in India. *Indian J Psychol Med.* 2024;11:02537176241244775. <https://doi.org/10.1177/02537176241244775>.
3. Gull M, Kaur N, Abubhasan WMF, Kandi S, Nair SMA. Comprehensive review of psychosocial, academic, and psychological issues faced by university students in India. *Ann Neurosci.* 2025;09727531241306571. Advanced online publication. <https://doi.org/10.1177/09727531241306571>.
4. Raja S, Balasubramanian G, Jamuna RR. Prevalence of depression, anxiety and stress among private medical college students in South India: a cross-sectional study. *J Educ Health Promot.* 2022;11:373. https://doi.org/10.4103/jehp.jehp_393_22.
5. Vaidya R, Kaza SK, Gupta P, Weine SM, Nooyi SC, Chaudhury N. Depression, anxiety, and stress among Indian youth during the COVID-19 lockdown—a cross-sectional survey. *J Ment Health Hum Behav.* 2021;26(2):153–60. https://doi.org/10.4103/jmhbb.jmhbb_65_21.
6. Chaudhary AP, Sonar NS, Tr J, Banerjee M, Yadav S. Impact of the COVID-19 pandemic on the mental health of college students in India: cross-sectional Web-Based Study. *JMIRx Med.* 2021;2(3):e28158. <https://doi.org/10.2196/28158>.
7. Ganesh R, Singh S, Bhargava R, Balhara YPS. Screen time and mental well-being of students during the COVID-19 pandemic: findings from a survey among medical and engineering students. *Indian J Soc Psychiatry.* 2022;38(1):26–31. https://doi.org/10.4103/ijsp.ijsp_365_21.
8. Mangalesh S, Dudani S, Dave ND. Assessment of mental health in Indian medical students during the coronavirus disease-2019 pandemic. *Indian J Soc Psychiatry.* 2021;37:105–10. https://doi.org/10.4103/ijsp.ijsp_166_20.
9. Cao F, Zhang LF, Li M, Xie Z. Subjective well-being among PhD students in mainland China: the roles of psychological capital and academic engagement. *Front Psychol.* 2024;15:1354451. <https://doi.org/10.3389/fpsyg.2024.1354451>.
10. Al Sultan A, Alharbi A, Mahmoud S, Elsharkasy A. The mediating role of psychological capital between academic stress and well-being among university students. *Pegem J Educ Instruct.* 2023;13(2):335–44. <https://doi.org/10.47750/pegegog.13.02.37>.
11. Selvaraj PR, Bhat CS. Predicting the mental health of college students with psychological capital. *J Ment Health.* 2018;27(3):279–87. <https://doi.org/10.1080/09638237.2018.1469738>.
12. Luthans KW, Luthans BC, Chaffin TD. Refining grit in academic performance: the mediational role of psychological capital. *J Manag Educ.* 2019;43(1):35–61. <https://doi.org/10.1177/1052562918804282>.
13. Luthans F, Youssef CM, Avolio BJ. Psychological capital: developing the human competitive edge. Oxford: Oxford University Press; 2007.
14. Li R, Che Hassan N, Saharuddin N. Psychological capital related to academic outcomes among university students: a systematic literature review. *Psychol Res Behav Manag.* 2023;16:3739–63. <https://doi.org/10.2147/PRBM.S421549>.
15. Martinez IM, Youssef-Morgan CM, Chambel MJ, Marques-Pinto A. Antecedents of academic performance of university students: academic engagement and psychological capital resources. *Educ Psychol.* 2019;39(8):1047–67. <https://doi.org/10.1080/01443410.2019.1623382>.
16. Slåtten T, Lien G, Evenstad SBN, Onshus T. Supportive study climate and academic performance among university students: the role of psychological capital, positive emotions and study engagement. *Int J Qual Serv Sci.* 2021;13(4):585–600. <https://doi.org/10.1108/IJQSS-03-2020-0045>.
17. Parviniannasab AM, Bijani M, Dehghani A. The mediating role of psychological capital in relations between spiritual well-being and mental health among nursing students. *BMC Psychol.* 2022;10(1):230. <https://doi.org/10.1186/s40359-022-00935-0>.
18. Chaffin D, Luthans BC, Luthans KW. Integrity, positive psychological capital and academic performance. *J Manag Dev.* 2023;42(2):93–105. <https://doi.org/10.1108/JMD-07-2022-0162>.
19. Datu JAD, King RB, Valdez JPM. Psychological capital bolsters motivation, engagement, and achievement: cross-sectional and longitudinal studies. *J Posit Psychol.* 2018;13(3):260–70. <https://doi.org/10.1080/17439760.2016.1257056>.
20. Carmona-Halty M, Salanova M, Llorens S, Schaufeli WB. How psychological capital mediates between study-related positive emotions and academic performance. *J Happiness Stud.* 2019;20:605–17. <https://doi.org/10.1007/s10902-018-9963-5>.
21. Martinez-Tejada LA, Puertas-González A, Yoshimura N, Koike Y. Exploring EEG characteristics to identify emotional reactions under videogame scenarios. *Brain Sci.* 2021;11(3):378. <https://doi.org/10.3390/brainsci11030378>.
22. Israelashvili J. More positive emotions during the COVID-19 pandemic are associated with better resilience, especially for those experiencing more negative emotions. *Front Psychol.* 2021;12:648112. <https://doi.org/10.3389/fpsyg.2021.648112>.
23. Grossmann I, Huynh AC, Ellsworth PC. Emotional complexity: clarifying definitions and cultural correlates. *J Pers Soc Psychol.* 2016;111(6):895–916. <https://doi.org/10.1037/pspp0000084>.
24. Fredrickson BL. The broaden-and-build theory of positive emotions. *Philos Trans R Soc Lond B Biol Sci.* 2004;359(1449):1367–78. <https://doi.org/10.1098/rstb.2004.1512>.
25. Li L, Gow ADI, Zhou J. The role of positive emotions in education: a neuroscience perspective. *Mind Brain Educ.* 2020;14:220–34. <https://doi.org/10.1111/mbe.12244>.
26. Heshmati S, DavyRomano E, Chow C, Doan SN, Reynolds KD. Negative emotion diversity is associated with emotional eating in adolescents: an examination of emotion dynamics in daily life. *J Adolesc.* 2023;95(1):115–30. <https://doi.org/10.1002/jad.12103>.
27. Li B, Ma H, Guo Y, Xu F, Yu F, Zhou Z. Positive psychological capital: a new approach to social support and subjective well-being. *Soc Behav Personal Int J.* 2014;42(1):135–44. <https://doi.org/10.2224/sbp.2014.42.1.135>.
28. Luthans F, Youssef-Morgan CM. Psychological capital: an evidence-based positive approach. *Annu Rev Organ Psych Organ Behav.* 2017;4:339–66. <https://doi.org/10.1146/annurev-orgpsych-032516-113324>.
29. Hobfoll SE, Halbesleben J, Neveu JP, Westman M. Conservation of resources in the organizational context: the reality of resources and their consequences. *Annu Rev Organ Psych Organ Behav.* 2018;5:103–28. <https://doi.org/10.1146/annurev-orgpsych-032117-104640>.
30. Gong Z, Lv Y, Jiao X, Liu J, Sun Y, Qu Q. The relationship between COVID-19-related restrictions and fear of missing out, problematic smartphone use, and mental health in college students: the moderated moderation effect of resilience and social support. *Front Public Health.* 2022;10:986498. <https://doi.org/10.3389/fpubh.2022.986498>.
31. Afzal A, Atta M, Malik NI. Role of positive psychological capital in prediction of emotions and subjective well-being among adolescents. *J Indian Acad Appl Psychol.* 2016;42(1):72–81.
32. Hazan Liran B, Miller P. The role of psychological capital in academic adjustment among university students. *J Happiness Stud.* 2019;20(1):51–65. <https://doi.org/10.1007/s10902-017-9933-3>.
33. Carmona-Halty M, Salanova M, Llorens S, Schaufeli WB. Linking positive emotions and academic performance: the mediated role of academic psychological capital and academic engagement. *Curr Psychol.* 2021;40:2938–47. <https://doi.org/10.1007/s12144-019-00227-8>.

34. Westerhof GJ, Keyes CLM. Mental illness and mental health: the two continua model across the lifespan. *J Adult Dev.* 2010;17(2):110–9. <https://doi.org/10.1007/s10804-009-9082-y>.
35. Paul M, Sahoo K. Role of spirituality as a positive psychological capital tool in prediction of emotions and subjective well-being among management students. In: Bhatt P, Jaiswal P, Majumdar B, Verma S, editors. *Riding the new tides: navigating the future through effective people management*. New Delhi: Emerald Group Publishing (India) Private Limited; 2017. p. 224–33.
36. National Interfaith Coalition on Aging (NICA). *Spiritual well-being: a definition*. 1975; Athens: NICA.
37. Frey BB, Daaleman TP, Peyton V. Measuring a dimension of spirituality for health research: validity of the spirituality index of well-being. *Res Aging.* 2005;27(5):556–77. <https://doi.org/10.1177/0164027505277847>.
38. Code J. Agency for learning: intention, motivation, self-efficacy, and self-regulation. *Front Educ.* 2020;5:19. <https://doi.org/10.3389/educ.2020.00019>.
39. Chu JJ, Khan MH, Jahn HJ, et al. Sense of coherence and associated factors among university students in China: cross-sectional evidence. *BMC Public Health.* 2016;16:336. <https://doi.org/10.1186/s12889-016-3003-3>.
40. Ryff CD. Spirituality and well-being: theory, science, and the nature connection. *Religions.* 2021;12(11):914. <https://doi.org/10.3390/rel12110914>.
41. Lourembam D, Ete L. Spiritual well-being: a protective resource among youth of Arunachal Pradesh. *Def Life Sci J.* 2021;6(1):30–36. <https://doi.org/10.14429/dlsj.6.16658>.
42. Leung CH, Pong HK. Cross-sectional study of the relationship between spiritual well-being and psychological health among university students. *PLoS ONE.* 2021;16(4):e0249702. <https://doi.org/10.1371/journal.pone.0249702>.
43. Maazallahi M, Ghonchepour A, Sohrabi M, Golestani Z, Parandeh Afshar P, Malakoutikhah A, et al. Spiritual well-being among medical and nonmedical science students. *Scientifica.* 2021;2021:1–6. <https://doi.org/10.1155/2021/6614961>.
44. Pong HK. Contributions of religious beliefs on the development of university students' spiritual well-being. *Int J Children's Spirit.* 2018;23(4):429–55. <https://doi.org/10.1080/1364436X.2018.1502164>.
45. de Diego-Cordero R, Zurrón Pérez MP, Vargas-Martínez AM, Lucchetti G, Vega-Escano J. The effectiveness of spiritual interventions in the workplace for work-related health outcomes: a systematic review and meta-analysis. *J Nurs Manag.* 2021;29(6):1703–12. <https://doi.org/10.1111/jonm.13315>.
46. Kalhori RP, Mohammadzadeh H, Foroughinia A, Kianipour N. Correlation of spiritual well-being psychological capital among university students in Iran. *Int J Eng Technol.* 2018;7(4.7):141–44. <https://doi.org/10.14419/ijet.v7i4.7.20530>.
47. Nooripour R, Hosseini S, Hussain AJ, Annabestani M, Maadal A, Radwin LE, et al. How resiliency and hope can predict stress of covid-19 by mediating role of spiritual well-being based on machine learning. *J Relig Health.* 2021;60(4):2306–21. <https://doi.org/10.1007/s10943-020-01151-z>.
48. Hobfoll SE, Shirom A. Conservation of resources theory: applications to stress and management in the workplace. In: Golembiewski RT, editor. *Handbook of organization behavior*. 2nd ed. New York: Marcel Dekker; 2001. p. 57–80.
49. Soper DS. A-priori sample size calculator for multiple regression [Software]. 2024 [cited 2024 Oct 16]. <https://www.danielsoper.com/statcalc/default.aspx>
50. Faul F, Erdfelder E, Buchner A, Lang AG. Statistical power analyses using G*Power 3.1: tests for correlation and regression analyses. *Behav Res Methods.* 2009;41(4):1149–60. <https://doi.org/10.3758/BRM.41.4.1149>.
51. Labrague LJ, de los Santos J. Fear of COVID-19, psychological distress, work satisfaction, and turnover intention among frontline nurses. *J Nurs Manag.* 2021;29(3):395–403. <https://doi.org/10.1111/jonm.13168>.
52. Holm, S. Declaration of Helsinki. *International encyclopedia of ethics*. Oxford, UK: Wiley. 2013:1–4. <https://doi.org/10.1002/9781444367072.wbiee230.pub2>.
53. Matos FR, De Andrade AL. Psychometric properties of the psychological capital scale in the student context (PsyCap-S). *Paidéia.* 2021;31:e3123. <https://doi.org/10.1590/1982-4327e3123>.
54. Sijtsma K. On the use, the misuse, and the very limited usefulness of Cronbach's alpha. *Psychometrika.* 2009;74(1):107–20. <https://doi.org/10.1007/s11336-008-9101-0>.
55. Daaleman TP, Frey BB. The spirituality index of well-being: a new instrument for health-related quality-of-life research. *Ann Fam Med.* 2004;2(5):499–503. <https://doi.org/10.1370/afm.89>.
56. Diener E, Wirtz D, Tov W, Kim-Prieto C, Choi D, Oishi S, et al. New well-being measures: short scales to assess flourishing and positive and negative feelings. *Soc Indic Res.* 2010;97:143–56. <https://doi.org/10.1007/s11205-009-9493-y>.
57. Cohen J. A power primer. *Psychol Bull.* 1992;112(1):155–9. <https://doi.org/10.1037/0033-2909.112.1.155>.
58. Field A. *Discovering statistics using IBM SPSS statistics*. 4th ed. London: Sage Publications; 2013.
59. Podsakoff PM, MacKenzie SB, Podsakoff NP. Sources of method bias in social science research and recommendations on how to control it. *Annu Rev Psychol.* 2012;63:539–69. <https://doi.org/10.1146/annurev-psych-120710-100452>.
60. Craighead CW, Ketchen DJ, Dunn KS, Hult GTM. Addressing common method variance: guidelines for survey research on information technology, operations, and supply chain management. *IEEE Trans Eng Manage.* 2011;58(3):578–88. <https://doi.org/10.1109/TEM.2011.2136437>.
61. Pradhan RK, Jandu K, Hati L, Panda M. Does grit foster employee well-being? Role of basic need satisfaction and psychological empowerment—a moderated mediation study. *Int J Organiz Theory Behav.* 2025;1–15. <https://doi.org/10.1108/IJOTB-02-2024-0033>.
62. Byrne BM. *Structural equation modeling with EQS: basic concepts, applications, and programming*. 2nd ed. New York: Routledge; 2006.
63. Nevitt J, Hancock GR. Evaluating small sample approaches for model test statistics in structural equation modeling. *Multivar Behav Res.* 2004;39:439–78. https://doi.org/10.1207/S15327906MBR3903_3.
64. Little TD, Rhemtulla M, Gibson K, Schoemann AM. Why the items versus parcels controversy needn't be one. *Psychol Methods.* 2013;18(3):285–300. <https://doi.org/10.1037/a0033266>.
65. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Struct Equ Model.* 1999;6(1):1–55. <https://doi.org/10.1080/10705519909540118>.
66. Ding Z, Wang Z, Nie W, Wu Z. Stakeholders' purchase intention of products with recycled content: a combination of SEM and BPNN approach. *Environ Sci Pollut Res Int.* 2023;30(29):7335–48. <https://doi.org/10.1007/s11356-023-27382-7>.

67. Yoo J, You S, Lee J. Relationship between neuroticism, spiritual well-being, and subjective well-being in Korean University students. *Religions*. 2022;13(6):505. <https://doi.org/10.3390/rel13060505>.
68. Donald WE, Jackson D. Subjective wellbeing among university students and recent graduates: evidence from the United Kingdom. *Int J Environ Res Public Health*. 2022;19(11):6911. <https://doi.org/10.3390/ijerph19116911>.
69. Plakhotnik MS, Volkova NV, Jiang C, Yahiaoui D, Pheiffer G, McKay K, et al. The perceived impact of COVID-19 on student well-being and the mediating role of the university support: evidence from France, Germany, Russia, and the UK. *Front Psychol*. 2021;12:642689. <https://doi.org/10.3389/fpsyg.2021.642689>.
70. Pradhan RK, Anand P, Jandu K, Sabu S, Ahmad A. Embracing quiet ego for flourishing: mediating role of authenticity and voluntary simplicity. *Cogent Psychology*. 2025;12(1):2460322. <https://doi.org/10.1080/23311908.2025.2460322>.
71. Pradhan RK, Jandu K. Evaluating the impact of conscientiousness on flourishing in Indian higher education context: mediating role of emotional intelligence. *Psychol Stud*. 2023;68(2):223–35. <https://doi.org/10.1007/s12646-022-00712-4>.
72. Reddy NY. Perceived wellbeing, happiness, and related challenges among indian college students. *Psychol Stud*. 2023;68(1):70–81. <https://doi.org/10.1007/s12646-022-00705-3>.
73. Chaudhry S, Tandon A, Shinde S, Bhattacharya A. Student psychological well-being in higher education: the role of internal team environment, institutional, friends and family support and academic engagement. *PLoS ONE*. 2024;19(1):e0297508. <https://doi.org/10.1371/journal.pone.0297508>.
74. van Cappellen P, Edwards ME, Fredrickson BL. Upward spirals of positive emotions and religious behaviors. *Curr Opin Psychol*. 2021;40:92–8. <https://doi.org/10.1016/j.copsyc.2020.09.004>.
75. Finch J, Waters AM, Farrell LJ. Developing the HERO within: evaluation of a brief intervention for increasing Psychological Capital (PsyCap) in Australian female students during the final year of school in the first year of COVID-19. *J Affect Disord*. 2023;324:616–23. <https://doi.org/10.1016/j.jad.2022.12.169>.
76. Solms L, van den Heuvel M, Nevicka B, Homan AC. Be a hero, be your own best friend: a self-compassion-based PsyCap intervention improves PhD students' well-being. *High Educ*. 2024;89:969–99. <https://doi.org/10.1007/s10734-024-01257-3>.
77. Singh K, Bandyopadhyay S. Enhancing college students' well-being: the psycho-spiritual well-being intervention. *J Hum Behav Soc Environ*. 2021;31(7):867–88. <https://doi.org/10.1080/10911359.2020.1823294>.
78. Park CL, Finkelstein-Fox L, Groessl EJ, Elwy AR, Lee SY. Exploring how different types of yoga change psychological resources and emotional well-being across a single session. *Complement Ther Med*. 2020;49:102354. <https://doi.org/10.1016/j.ctim.2020.102354>.

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