

The influence of college students' sense of life meaning on psychological well-being: The mediating roles of positive emotions and life adaptation

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ABSTRACT

Purpose: This study aims to investigate the factors influencing the sense of life meaning and psychological well-being among college students and to understand and explore the mediating roles of positive emotions and life adaptation.

Design/Methodology/Approach: This study used a quantitative approach for testing. A total of 1,152 college students were randomly selected from nine higher education institutions located in Shanxi Province, China.

Findings: There is a positive relationship between college students' sense of life meaning and psychological well-being. Positive emotions and life adaptation play a mediating role in the relationship between college students' sense of life meaning and psychological well-being.

Conclusion: College students' sense of life meaning exerts a mediating effect on psychological well-being through life adaptation. Positive emotions and life adaptation also mediate the effects of a sense of life meaning on psychological well-being.

Research Limitations/Implications: The sample in this study was exclusively drawn from various higher education institutions in Shanxi Province, China. Therefore, the conclusion may not be universally applicable to all levels of education and teaching situations.

Practical Implications: This study provides valuable insights for schools and society to formulate targeted measures for promoting psychological health thereby enhancing college students' life satisfaction and happiness.

Contribution to the Literature: This research establishes a structural framework for understanding the relationship between positive emotions, life adaptation and psychological well-being providing an important reference for future studies in this area.

Keywords: College students, Life adaptation, Mediating roles, Positive emotions, Psychological well-being, Sense of life meaning.

1. INTRODUCTION

Humans must confront the finite nature of life and the unavoidable question of death. People's desire for a better life extends beyond worldly pursuits; it encompasses a drive for higher levels of satisfaction, meaningful interpersonal relationships, spiritual fulfilment and a profound understanding of the meaning of life (Zhang, 2023). Positive psychology considers life as a way to strive for a higher quality of psychological existence (Shi, 2016). However, in-depth research is needed to answer the question of why some teenagers decide to take their own lives as well as what influences their poor understanding of life's purpose and goals. William Damon from Stanford University has long been researching the growth of adolescents and has found that today's adolescents generally face the "youth drifting phenomenon". They are generally unwilling to take on responsibilities and obligations due to a lack of clear life goals which in turn lead to a lack of motivation. On the other hand, individuals with clear life goals have a stronger sense of control over themselves and are able to actively pursue and achieve their planned life goals (Bao, 2013).

Maintaining a good psychological attitude is fundamental to this concept as challenges of various kinds are frequently experienced in every aspect of human life. This positive mindset provides supportive solutions for

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dealing with challenges in life (Larsen, 2017). Positive emotions significantly affect an individual's ability for emotion and processing particularly in a rapidly changing social environment. Therefore, the application of positive emotions in daily life is particularly important. Different types of positive emotions can stimulate the accumulation of resources at the physiological, psychological and social levels and thus they have different effects on individuals (Chang, Hong, Zeng, & Huang, 2017). Using one's distinctive skills to show one's superior abilities and self-realization throughout life are the main goals of positive psychology. One of the core issues is exploring how to achieve a meaningful and fulfilling life and encouraging individuals to become outstanding individuals with fulfilling lives. In this process, positive emotions play a crucial role (Seligman, 2002). In daily life, individuals can cultivate and generate positive emotions by adopting a positive way of thinking towards others and dealing with tasks. Positive emotions guide individuals to approach life's problems with a positive and proactive attitude. Humans have continually attempted to engage with the environment, live comfortably and fulfil their personal goals throughout human history. The desire for happiness and health is universal and individual adaptation and happiness have become important parts of life (Larsen, 2017). Research indicates a relationship between college students' academic engagement, motivation, achievement and happiness (Jia & Zhu, 2023). Adolescent mental health issues are a concern for health, and adolescent adaptation requires more attention (Li, 2023). Individuals at different stages of development face specific developmental tasks and the completion of these tasks affects their adaptability. Failure to complete them may lead to psychological conflicts affecting happiness. Developmental psychology views a university education as a period of independence, self-identity and autonomy marking the passage from youth to adulthood. College students must manage intellectual, interpersonal and emotional demands and effective psychological adaptation is essential (Dyson & Renk, 2006). College students are in a phase of transition from adolescence to adulthood pursuing self-understanding and development. They must learn to adjust to a new environment and deal with stress. Seligman (2002) pointed out that adversity can stimulate psychological resilience and prevent mental illness. Decision-making during the university period is crucial and if adaptation is poor, it can affect physical and mental health (Xie, Hong, & Chen, 2023). College students have multiple meanings such as completing developmental tasks and adapting to diverse university life. In addition to academics, adaptation issues are common and if not addressed, they may transform into psychological problems affecting development. The negative cycle of psychology and life has a significant impact on the development of college students.

The main points and objectives of this study are to explore the factors influencing the sense of life meaning on the psychological well-being of college students and to understand and investigate the mediating role between positive emotions and life adaptation. The research structure comprises four parts: the introduction, literature review, research framework, participants, tools and procedures in the first three parts and conclusions and recommendations in the fourth part. The study included 1,152 randomly selected college students from nine higher education institutions in Shanxi Province. The following research hypotheses were proposed for validation:

H1: The sense of life meaning has a positive impact on psychological well-being.

H2: The sense of life meaning positively influences positive emotions and life adaptation.

H3: Positive emotions and life adaptation positively impact psychological well-being.

H4: Positive emotions and life adaptation in college students play a mediating role between the sense of life meaning and psychological well-being.

2. LITERATURE REVIEW

College students with positive psychological qualities not only contribute to enhancing learning efficiency and life quality but also foster national development and progress (Yao, 2023). Life adaptation refers to an individual's self-regulation in the external environment to meet internal needs (Cheng et al., 2023). Psychological well-being is a unified state of subjective and objective elements, happiness and meaning, development and enjoyment. It represents an individual's positive and healthy psychological state filled with joy, altruistic behavior and vibrant living while engaging in activities that bring personal delight (Wang & Fang, 2023).

This study emphasizes the relationship between the sense of life meaning and psychological well-being exploring the mediating role of positive emotions and life adaptation in the impact of life meaning on psychological well-being. The following outlines the definitions of life meaning, psychological well-being, positive emotions and life adaptation.

2.1. The Connotation and Meaning of Life

The meaning of life is the subject of living in a suitable way (Eagleton, 2007). This means that the individual's state in physical, psychological and social aspects as well as the roles played and transitions between roles make the meaning of life vary from person to person and change over time. The value of life is indeed unique arising from the inner spiritual level of the individual's holistic life view in physical, mental and spiritual aspects as well as the self-awareness of the degree of meaning and goals in life. This encompasses multiple levels including personal beliefs, values, religious faith, etc. (Frankl, 2014). Frankl (1963) views life as unique with each individual having their own unique traits. Individuals cannot choose the changes in their environment; they can choose their own growth and existence. The sense of meaning of life refers to the degree to which an individual senses the essence of life and the important things including two dimensions of meaning experience and meaning seeking. The former is the individual's evaluation of current life while the latter shows the individual's effort to pursue the meaning of life (Hu & Wang, 2023).

2.2. The Connotation of Positive Emotions

When people experience positive emotions, they react to emotional stimuli in a pleasant and cheerful way and express favourable feelings towards their surroundings. People can learn to deal with adversity by becoming more tolerant and continuing to love and care for life (Chang et al., 2017).

2.3. The Connotation of Life Adaptation

Life adaptation refers to the individual's self-regulation in the external environment to meet internal needs and at the same time, it involves a continuous and dynamic interactive process with the environment. In this process, individuals not only adapt to the environment but also use self-regulation to make the environment adapt to them and may even change themselves or the environment to adapt to changes in the environment.

Individuals can establish harmonious and cordial interpersonal relationships through such adjustments and interactions. Therefore, this psychologically healthy adaptation implies that individuals adapt well in their lives (Zhang & Zhang, 2018).

2.4. The Connotation of Psychological Well-Being

An individual's good and healthy mental state marked by joyful feelings, selfless actions and a dynamic engagement in high-quality life activities that make them happy is referred to as psychological well-being. The emergence of well-being is influenced by various factors such as different contexts, cultures and cognitive processes making it a complex psychological construct primarily focused on the reflection of positive emotions. Positive experiences are associated with psychological well-being because they include elements such as excitement, resilience, motivation, determination and vigour. This perspective is supported by numerous studies (Song & Wang, 2023).

3. RESEARCH FRAMEWORK, OBJECTS, TOOLS AND PROCEDURES

3.1. Research Framework

This study takes the sense of life meaning as the independent variable and psychological well-being as the dependent variable (Li, Zhang, Zhu, Yan, & Yang, 2020).

A research framework as illustrated in Figure 1 has been constructed.

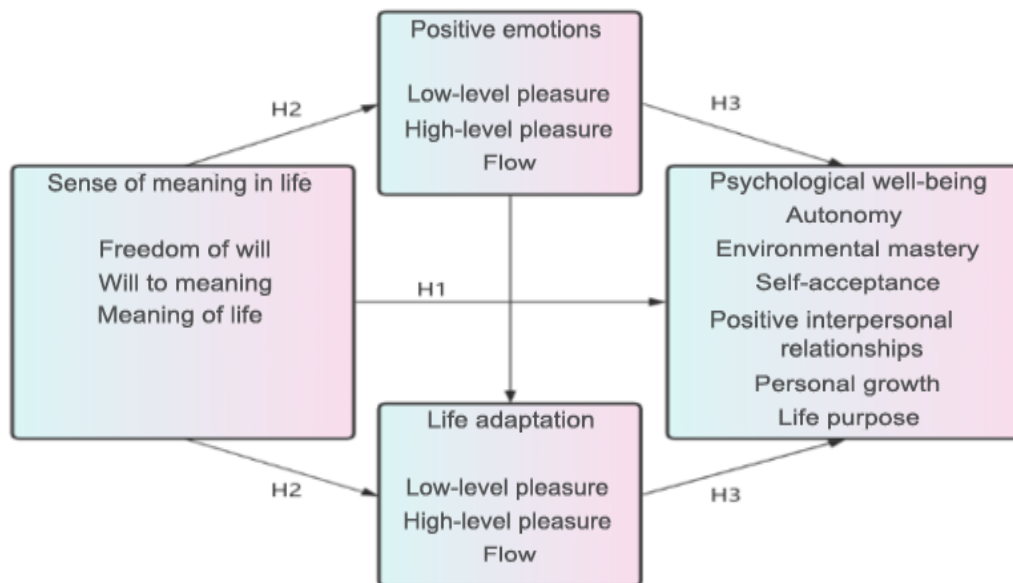


Figure 1. Research framework diagram.

Hypothesis 1 (H1): The sense of life meaning has a positive impact on psychological well-being.

Hypothesis 2 (H2): The sense of life meaning has a positive impact on positive emotions and life adaptation.

Hypothesis 3 (H3): Positive emotions and life adaptation have a positive impact on psychological well-being.

3.2. Research Subjects

The research participants consist of 1152 college students from nine higher education institutions in Shanxi Province, China. The sample encompasses students from various universities, disciplines and regions across the nation ensuring a degree of representativeness.

3.3. Research Assumptions

Chen and Wu (2007) discovered in their research that various background variables can lead to partial, yet significant differences in the life meaning perceived by students. They identified notable connections between life stress, the meaning of life and suicidal ideation. Suicidal thoughts are predictably associated with life stress and life purpose. Additionally, substantial variations exist in the sense of the meaning of life. College students show a higher degree of positive emotions during their freshman year compared to sophomores. Furthermore, there are discernible differences in positive emotions among college students from different schools. Existing literature highlights the mutual effects and influences between positive emotions and life adaptation. Positive emotions among college students significantly impact life adaptation indicating a positive effect on overall life adaptation.

After a thorough examination of the research objectives, research questions, literature review and their integration with the research framework, this study posits the following hypotheses for validation:

H1: The sense of meaning in life positively influences psychological well-being.

H2: The sense of meaning in life has a positive impact on positive emotions and life adaptation.

H3: Positive emotions and life adaptation positively influence psychological well-being.

H4: Positive emotions and life adaptation among college students act as mediators between the sense of meaning in life and psychological well-being.

3.4. Research Tools

3.4.1. Scale of Sense of Life Meaning

Experts and scholars from China and other countries have different interpretations of the dimension structure of sense of life meaning in existing research ranging from a single dimension to a multidimensional structure. The psychological perception of college students is a dynamic process influenced by the environment.

This study used the "Scale of Sense of Life Meaning for College Students" developed by [Wu et al. \(2015a\)](#) as the research tool in compliance with the research objectives. It is worth noting that the construction framework of this scale of sense of life meaning is based on Frank's meaning therapy theory. This theory encompasses three closely related fundamental beliefs: freedom of will, will to meaning and meaning of life providing a basis and dimension for exploration and analysis in this study.

The scale in this study consists of three dimensions, comprising a total of 18 positive items which are as follows: 1. Freedom of will (5 items). 2. Will to meaning (7 items). 3. Meaning of Life (6 items). Empirical research by experts and scholars has shown strong reliability with a Cronbach's alpha value exceeding 0.8. The scale uses a 5-point scoring system ranging from "completely inconsistent" to "completely consistent." Therefore, the following questions about purpose in life are addressed in this study (see [Table 1](#)).

Table 1. Scale of sense of life meaning.

Variable question	Number	Scale item
Freedom of will	1	Crises can become opportunities if one changes their perspective.
	2	I view setbacks as chances for refinement, leading to greater resilience and personal growth.
	3	I choose to be optimistic about life despite all the obstacles.
	4	I take responsibility for my life choices and their consequences.
	5	After experiencing pain, I learned from it to avoid similar setbacks in the future.
Will to meaning	6	I continually seek things that make life more meaningful.
	7	I never give up when faced with challenges in life, academics or emotions. Instead, I seek the challenges and meanings within them.
	8	I believe a positive attitude can change my destiny.
	9	I know exactly what kind of life I want to lead.
	10	I am very attentive to living a meaningful life.
	11	I strive to develop and actualize my potential.
Meaning of life	12	I actively explore myself, always searching for new life goals.
	13	I work hard towards my future life goals such as pursuing postgraduate studies, the civil service or working for a state-owned enterprise.
	14	Through the experiences of others and myself.
	15	When faced with someone in need, I am willing to offer care and assistance.
	16	I have gained a deeper understanding and affirmation of my abilities through my daily life and work.
	17	I dedicate myself to pursuing and embodying the ideals of life giving my existence purpose and direction.
	18	I find affirmation and joy in being true to myself through this commitment.

Source: Based on the research results of scholars such as [Wu et al. \(2015a\)](#).

3.4.2. Positive Emotion Scale

In this study, the "Positive Emotion Scale for College Students" compiled by [Hou \(2012\)](#) was used as a research tool. The Positive Emotion Scale encompasses three dimensions: low-level pleasure, high-level pleasure and flow. It consists of three constructs, totaling 15 items, all of which are positively framed. These are categorized as follows: 1. Low-level pleasure (2 items). 2. High-level pleasure (4 items). 3. Flow (9 items). It was concluded that the Cronbach's alpha value of the positive emotion scale exceeds 0.8 indicating high reliability through empirical research conducted by experts and scholars. A 5-point rating system was employed with 1 representing "completely disagree," 2 indicating "somewhat disagree," 3 signifying "uncertain," 4 denoting "somewhat agree" and 5 reflecting "completely agree." Positive emotion scales are given in [Table 2](#).

Table 2. Positive emotion scale.

Variable question	Number	Scale item
Low-level pleasure	1	I find happiness in indulging in delicious food.
	2	I invest a lot of time in doing things that I find meaningful.
High-level pleasure	3	I use various methods to achieve mental relaxation.
	4	I take pride in myself.
	5	The scent of freshly baked bread, blooming flowers and sun-dried clothes brings me joy.
	6	My life is pleasant.
Flow	7	When the problem is unfinished, I will think about it everywhere.
	8	I am passionate about solving problems that interest me and to which I am committed.
	9	I don't give up easily when faced with difficult issues that I find interesting and I am devoted to solving issues.
	10	I discuss with others potential solutions when I'm working on issues that I find interesting and that I'm passionate about.
	11	I carefully follow the guidelines when addressing issues that I find interesting and that I am passionate about.
	12	I don't care about rewards or recognition for things that fascinate me and to which I am committed.
	13	I can vividly recall all the steps involved in solving problems that fascinate me and to which I am committed.
	14	I relish the sense of accomplishment in the process of problem-solving.
	15	When I've solved issues that I find interesting and am dedicated to, I realise time has passed by without my noticing.

Source: The research results are from Hou (2012).

3.4.3. The Life Adaptation Scale

The "life adaptation scale" which was developed by Huang and Lin (2014) was used for this study and appropriately modified to satisfy its particular requirements. The structure of the life adaptation scale includes three dimensions: peer relationships, learning adaptation and time management. These dimensions serve as the foundation and research focus of the analysis. The scale consists of three dimensions totaling 10 positively framed items. The dimensions and corresponding items are as follows: "Peer relationships" includes items 1 to 4 learning adaptation includes items 5 to 7 and "time management" includes items 8 to 10. Empirical research conducted by experts and scholars demonstrated strong reliability with a Cronbach's alpha value exceeding 0.8. The scale uses a 5-point rating system ranging from "completely disagree" to "completely agree" (see Table 3).

Table 3. The life adaptation scale.

Variable question	Number	Scale item
Peer relationships	1	I have good relationships with my peers.
	2	We encourage and support each other.
	3	I am happy to study with my classmates.
	4	They help me when I face difficulties.
Learning adaptation	5	I am usually very focused in class.
	6	I make an effort to keep up with the pace of the curriculum.
	7	I tend to actively seek answers to questions.
Time management	8	I have a regular schedule in my university life.
	9	I don't find university life boring.
	10	I have time to participate in leisure activities.

Source: The research results from Huang and Lin (2014).

3.4.4. Psychological Well-being Scale

In this study, the "Psychological Well-being Scale for College Students" developed by Wu, Wu, and Wu (2015b) was used to achieve the research aims. The basis and direction for the research and investigation were based on the six essential components outlined by Ryff and Keyes (1995): autonomy, environmental mastery, self-acceptance, positive relationships with others, personal progress and purpose of life. Comprising a total of 19 positively framed items, the psychological well-being scale encompasses the following six dimensions: 1. Autonomy (3 items). 2. Environmental mastery (3 items). 3. Self-acceptance (4 items). 4. Positive relationship with others (3 items). 5. Personal growth (3 items). 6. Purpose of life (3 items). Detailed information is available in Table 4.

Table 4. Psychological well-being scale.

Variable question	Number	Scale item
Autonomy	1	I maintain my opinions even in the face of my peers' differing views regarding my strategy and demeanor.
	2	I strive to express my opinions in class even when they conflict with those of the majority.
	3	I am able to make my own decisions on the importance of things in life and in my studies without any external factors.
Environmental mastery	4	I can manage things well even in situations where there is a tight deadline for turning in assignments at the end of the term.
	5	I live the way I like.
	6	I can manage my personal finances (such as living expenses) appropriately.
Self-acceptance	7	I am satisfied with my performance at school.
	8	I am confident in myself.
	9	I maintain a positive and optimistic attitude towards everything.
	10	I can accept the flaws in my personality.
Positive relationships with others	11	There is mutual trust between me and my classmates.
	12	I trust my fellow students.
	13	My classmates find me easy to get along with.
Personal growth	14	I feel that I am constantly improving my learning skills and strategies.
	15	I am becoming more proficient in dealing with classmates.
	16	I get wiser and more skilled at handling situations as I get older along with my attitude.
Purpose of life	17	I have already decided on the future career I want to pursue.
	18	The goals I have set have all been achieved.
	19	University life makes me feel that my days are very meaningful.

Source: The research results are from Wu et al. (2015b).

3.5. Research Procedures

This survey employed an online questionnaire reaching out to 1,400 individuals through the internet. We obtained 1,152 valid questionnaire samples, yielding a usability rate of 90.07%. We conducted the statistical analysis for testing the mediating effect using SPSS version 22.0. SPSS is a statistical software package that is widely used for statistical analysis in various fields including social sciences, health sciences and business. It provides a user-friendly interface and a range of statistical procedures for data analysis. Users can input data, perform statistical analyses and generate reports or graphs to interpret the results.

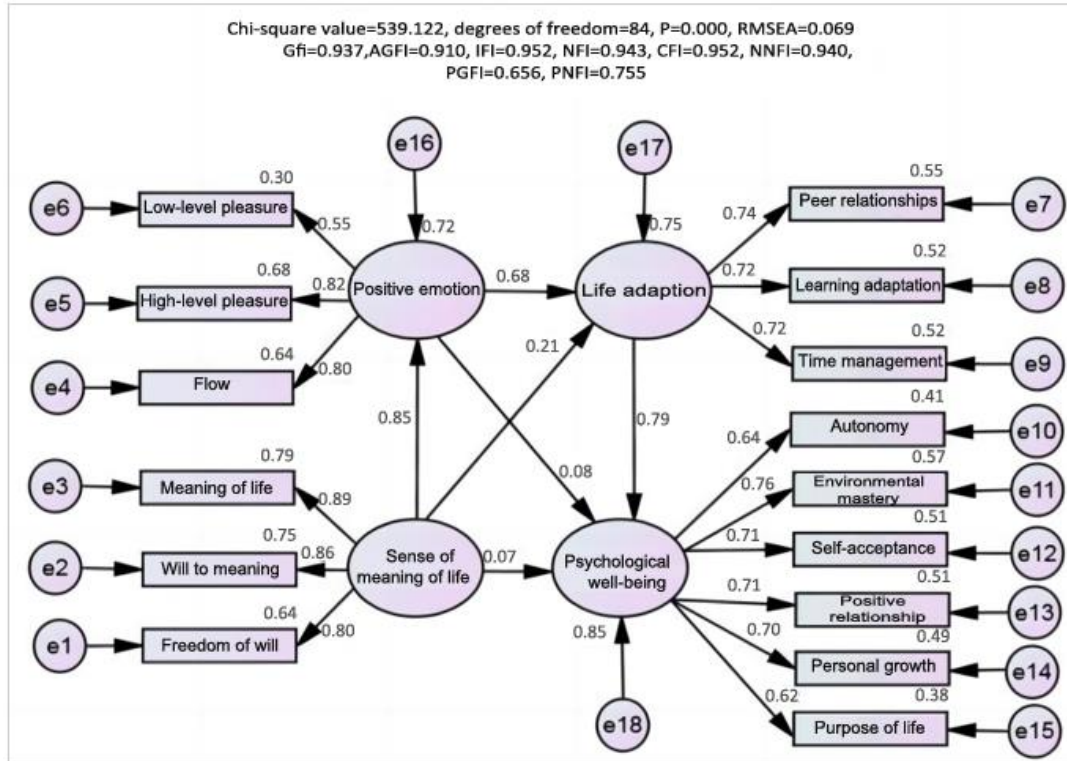


Figure 2. A standardized estimated model of the relationship between sense of life meaning, positive emotions, life adaption and psychological well-being

Based on the analysis of **Figure 2**, the following path coefficients are observed: The standardized path coefficient from college students' sense of life meaning to positive emotions is 0.85 ($t=24.09, p<.001$), from positive emotions to life adaption is 0.68 ($t=9.30, p<.001$) and from life adaption to psychological well-being is 0.79 ($t=9.37, p<.001$) whereas the standardized path coefficient from sense of life meaning to psychological well-being is 0.07 ($t=1.28, p>.05$) which did not reach significance. The path coefficient from sense of life meaning to psychological well-being decreases to 0.07 and is not significant in the mediation model. Therefore, it can be concluded that positive emotions and life adaption have a fully mediating effect on connecting a sense of life meaning and psychological well-being.

The comprehensive analysis above shows that positive emotions and life adaption have a fully mediating effect on connecting sense of life meaning and psychological well-being. Therefore, it can be concluded that this study supports the following hypothesis: positive emotions and life adaption mediate the relationship between sense of life meaning and psychological well-being.

3.6. Research and Analysis of Results

3.6.1. Analysis of Direct Effects, Indirect Effects and Total Effects

In this study, through the aforementioned statistical analysis, the direct, indirect and total effects of the three paths were integrated and presented in **Table 5**. The detailed analysis results are listed in order as follows:

3.6.1.1. Direct Effects

From the statistical results in **Table 5**, it can be observed that in the research model, the direct impact coefficient of the sense of life meaning on positive emotions is 0.85 and it is significant. The direct effect coefficient of positive emotions on life adaption is 0.68 which is also significant. The direct effect coefficient of life adaption on psychological well-being is 0.79 which is likewise significant. However, the direct effect coefficient from sense of life meaning to psychological well-being is 0.00 not reaching significance. The direct effect coefficient of sense of

life meaning on life adaptation is 0.21 and it is significant. On the other hand, the direct effect coefficient of positive emotions on psychological well-being is 0.00 not reaching significance.

3.6.1.2. Indirect Effects

Secondly, in the research model, pathways involving life adaptation, positive emotions and life adaptation as mediating variables were used. The results show that the indirect effect values of sense of life meaning on psychological well-being are 0.18 and 0.46 respectively.

3.6.1.3. Total Effects

Furthermore, the findings of the total effect values demonstrate that when life adaptation is the mediating variable, the total effect value for the impact of sense of life meaning on psychological well-being is 0.25. When the mediating variable is positive emotions and life adaptation, the total effect value is 0.53. In the initial path coefficients of the research model, the effect of sense of life on psychological well-being was initially 0.07, not reaching significance, thus the total effect value is zero. Similarly, the path coefficient of positive emotions on psychological well-being did not reach significance resulting in a total effect value of zero. The path coefficient exceeded significance when pleasant emotions were the mediating variable showing no mediating effect and a zero overall effect value for the impact of sense of life purpose on psychological well-being. These summarized effect values are presented in Table 5. This study found that positive emotions and life adaptation play a fully mediating role between sense of life meaning and psychological well-being based on a comprehensive analysis.

Table 5: Summary of effect values between sense of life meaning, positive emotions, life adaptation and psychological well-being.

Path	Direct effect	Indirect effect	Total effect
Meaning in life to positive emotions	0.85	0.00	0.85
Meaning in life to life adaptation	0.21	0.00	0.21
Meaning in life to psychological well-being	0.00	0.00	0
Positive emotions and life adaptation	0.68	0.00	0.68
Positive emotions contribute to psychological well-being.	0.00	0.00	0
Life adaptation to psychological well-being	0.79	0.00	0.79
Meaning in life to psychological well-being (mediating variable: positive emotions)	0.00	0.00	0
Meaning in life to psychological well-being (mediating variable: life adaptation)	0.07	0.18	0.25
Meaning in life to psychological well-being (mediating variables: positive emotions, life adaptation)	0.07	0.46	0.53

3.6.2. Statistical Testing of Mediation Effects

In this study, the mediation effects of the model "meaning in life, positive emotion, life adaptation and psychological wellbeing" on college students were examined. Three mediation effects were tested in total. According to the test results, two paths showed significant mediation effects. To confirm these effects, the built-in Bootstrap method in Amos 21.0 was used for testing with a two-tailed significance level (bias-corrected 95% CI) as follows: LL = .72, UL = .80. This interval does not include 0 indicating that the mediation effects are significant with statistical meaning.

4. CONCLUSION AND RECOMMENDATIONS

This study found results consistent with a similar study by Zhang, Lin, and Huang (2013). Positive emotions significantly influence life adaptation. Life adaptation has a notable impact on psychological well-being. Additionally, the overall mediating effect in the pathway between life adaptation and psychological well-being is significantly greater than the direct effect between the sense of life meaning and psychological well-being.

4.1. Conclusion

4.1.1. Relationship between Meaning in Life and Psychological Well-Being in College Students

Previous research indicates that many scholars have dedicated efforts to explore the essence of psychological well-being, and there is a significant relationship between a sense of life meaning and psychological well-being (Wang, Kang, Jia, & Jiang, 2023). Furthermore, positive emotions play an intermediary role between a sense of life meaning and psychological well-being while life adaptation also functions as an intermediary between these two aspects. Some researchers have found a positive relationship between the manifestation of life satisfaction and happiness which is connected to the creation of life meaning. A sense of life meaning emphasizes individuals seeking positive meaning in the face of challenges such as death, isolation and meaninglessness. Psychological well-being, on the other hand, focuses on individuals realizing happiness by unleashing their potential and pursuing personal meaning and self-fulfillment. Individuals with a sense of life meaning are more inclined to use positive psychological functions and happiness and a sense of life meaning complement each other mutually promoting one another.

This study found that college students' cognitive perception of meaning in life is influenced by their cognitive perception of life adaptation which in turn affects their influence on psychological well-being. The total effect value is 0.25. In other words, college students are influenced by their cognitive perception of life adaptation which affects their psychological well-being.

4.1.2. Relationship between Meaning in Life, Positive Emotions and Life Adaptation in College Students

Research indicates a positive relationship between a sense of life meaning and a sense of responsibility in the study conducted by Liu and Niu (2021). According to Ju (2023), life education courses are found to stimulate students to contemplate the substantial meaning and core values of their existence enabling them to face death with a positive mindset, cherish happiness and cultivate a sense of gratitude. Additionally, individuals with a positive emotional disposition can affirm the value of their existence (Góngora-Coronado & Vásquez-Velázquez, 2018). A sense of life meaning has a direct impact on positive emotions and it is also influenced directly by positive emotions.

This study found that college students' cognitive perception of meaning in life is influenced by their cognitive perception of positive emotions which then influences their cognitive perception of life adaptation. It further affects their cognitive perception of psychological well-being through the influence of life adaptation. The external variable of meaning in life under the mediating effects of positive emotions and life adaptation changes its influence on the internal variable of psychological well-being with a total effect value of 0.53. In other words, cultivating positive emotions in college students and enhancing their adaptability to life will contribute to improving their psychological well-being. In college, students have a stronger sense of meaning in life; they tend to have a better cognitive perception of psychological well-being. At the same time, they possess more positive emotions and adaptability; they also have a better cognitive perception of psychological well-being.

4.1.3. The relationship between positive emotions and life adaptation to psychological well-being

Fredrickson's (2004) study results indicate that positive emotions and life adaptation contribute to promoting individual psychological well-being. Individuals can enhance their coping with negative emotions by fostering positive experiences. Wood, Joseph, and Maltby's (2008) research found that gratitude can effectively predict psychological well-being and positive emotions aid individuals in adopting approaches or sustained behaviors.

The findings of this study suggest a significant positive relationship between positive emotions, life adaptation and the psychological well-being of college students. Positive emotions and life adaptation encompass the advantages of positive psychological states in college students and share the same theoretical foundation and research focus as psychological well-being. Positive emotions and life adaptation can enhance and promote the psychological well-being of college students. This study concludes that positive emotions and life adaptation have a positive impact on psychological well-being.

4.1.4. Influence of the Relationship between Positive Emotions, Life Adaptation and Psychological Well-Being

Pan, Wang, Xu, Zhang, and Tian (2009) found that there are mutual effects and influences between positive emotions and life adaptation. Positive emotions significantly impact the life adaptation of college students

indicating a positive effect of positive emotions on overall life adaptation. Positive emotions have a direct influence on life adaptation and there is a significant direct relationship between positive emotions and life adaptation. Positive emotions have predictive power for life adaptation. Therefore, there are significant levels of effects and influences between positive emotions and life adaptation.

The research results indicate that meaning in life is a latent external variable and psychological well-being is a latent internal variable with positive emotions and life adaptation serving as mediators. These four latent variables construct an effective mediating model. The sense of meaning in the lives of college students has a mediating effect on psychological well-being through life adaptation. Additionally, positive emotions and life adaptation also mediate the effect of meaning in life on psychological well-being. In college students in the Shanxi region of China, their perceived levels of positive emotions and life adaptation together influence their sense of meaning in life and psychological well-being. Furthermore, the cognitive perception of life adaptation also influences their sense of meaning in life and psychological well-being. However, having only a cognitive perception of positive emotions does not independently influence their sense of meaning in life and psychological well-being. It is necessary to jointly form a mediating path with the cognitive perception of life adaptation to affect the sense of meaning in life and psychological well-being. Therefore, it can be further inferred that for college students in the Shanxi region of China, if they only have a cognitive perception of life adaptation without a cognitive perception of positive emotions and their psychological well-being will not be affected.

4.2. Recommendations and Implications

It is recommended that college students maintain an open mindset, actively engage in interactions with others and integrate methods applicable to cultivating a sense of meaning in life, positive emotions and life adaptation in a balanced way. Additionally, it is advised to strengthen interpersonal networks, expand the influence of positive emotions and strive to cultivate skills for positive psychological well-being such as nurturing core values for a meaningful life, establishing positive social emotions to cultivate positive emotions, promoting healthy interpersonal communication to enhance social support, etc. This will help enhance the psychological health development of college students making them individuals with a positive mindset, vitality, strong adaptability and psychological well-being capable of actively facing various challenges in life.

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INSTITUTIONAL REVIEW BOARD STATEMENT

The Ethical Committee of the International College, Kirk University, Thailand has granted approval for this study on 16 May 2022 (Ref. No. 2022-0516).

TRANSPARENCY

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

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