



# Mental Health for Vocational Education Model in Zhengzhou City, Henan Province of China

**Chenbo Huang**

*Faculty of Education, Shinawatra University, Thailand*

*E-mail: r.phomdee@gmail.com ORCID ID: <https://orcid.org/0009-0008-7749-1537>*

**Samrerng Onsarpant**

*Faculty of Education, Shinawatra University, Thailand*

*E-mail: samrerng.o@siu.ac.th ORCID ID: <https://orcid.org/0009-0004-2031-9091>*

**Dech Boonprajak**

*Faculty of Education, Shinawatra University, Thailand*

*E-mail: dech.b@siu.ac.th ORCID ID: <https://orcid.org/0009-0007-7721-9501>*

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## Abstract

**Background and Aim:** Vocational college students in Zhengzhou, Henan Province of China, face significant mental health challenges impacting their learning and future. This study aimed to systematically investigate their mental health status, develop a scientifically sound and feasible intervention model, and evaluate its practical relevance through expert input to improve student well-being.

**Materials and Methods:** A mixed-methods design was employed. Quantitative data from 381 vocational students via online questionnaires assessed mental health dimensions, using stratified random sampling. Qualitative insights were gathered through 12 semi-structured interviews with psychology teachers and a focus group discussion by 9 experts using purposive sampling for the model's confirmation. Instrument validation involved expert review and pilot testing. Data analysis combined descriptive and inferential statistics with thematic analysis, followed by expert focus group discussions for validation and refinement.

**Results:** The findings revealed that student mental health mapping revealed moderate, widespread challenges, including obsessive-compulsive symptoms, sleep/diet problems, interpersonal sensitivity, anxiety, and depression. Subgroup analyses showed higher stress in sophomores and distinct tendencies in urban students. In response, a five-dimensional model (assessment, literacy, prevention, counseling, ecological support) was developed. Expert evaluation yielded high approval ratings (exceeding 70% across utility, feasibility, suitability, and accuracy), confirming the model's scientific and operational viability. This validates its potential to address identified service gaps and align with holistic mental health approaches.

**Conclusion:** The study successfully developed a theoretically sound and practical mental health education model. This model, validated by expert feedback, addresses the critical need for a systematic, culturally appropriate, and implementable mental health system for vocational college students. The findings provide a clear and empirically supported pathway for institutions to adopt and advance mental health care, ultimately enhancing student well-being and contributing to the field in China.

**Keywords:** Mental Health, Vocational Education, Administrator, Zhengzhou City, Henan Province

## Introduction

The 21<sup>st</sup> century has ushered in an era of unprecedented global interconnectedness and rapid technological advancement, fundamentally reshaping economic landscapes and workforce demands. In response, vocational education has emerged as a pivotal pillar in national development strategies worldwide, serving as a critical pipeline for skilled labor and fostering practical innovation (Phakamach et al., 2023b). China, in particular, has witnessed a remarkable expansion in its vocational education sector, with a continuous increase in vocational college student enrollment. This growth is intrinsically linked to the nation's broader economic and social development goals, aiming to cultivate a highly competent and adaptable workforce capable of driving sustained progress (Julianto et al., 2023; Yuan et al., 2024). However, this rapid expansion has also brought to light significant challenges concerning the holistic well-being of vocational college students, particularly their mental health. The student population within these institutions often navigates a complex array of stressors, including intense academic pressure, uncertain employment prospects in a competitive job market, and the inherent complexities of personal growth during a formative life stage (Ahmad et al., 2022; Zhong & Policarpio, 2024). These multifaceted challenges have increasingly drawn widespread attention from both society





at large and the academic community, underscoring the pressing need to address the mental health issues prevalent among this demographic (Firdaus et al., 2025).

Henan Province, as one of China's most populous and educationally significant provinces, exemplifies the scale and urgency of these concerns. Vocational education in Henan caters to a vast number of students, and consequently, mental health problems among them are particularly prominent. The unique socio-economic context of many vocational school students in Henan further exacerbates these pressures. A substantial proportion of these students originates from rural or economically disadvantaged areas, often facing compounded mental burdens related to their social and economic status, limited family support structures, and heightened career expectations. Compounding these internal and familial pressures is a persistent societal bias against vocational education, which can lead to difficulties in self-identity, diminished learning motivation, and challenges in social adaptation. These factors collectively contribute to the manifestation of various mental health issues, including but not limited to anxiety, depression, and chronic stress (Chen et al., 2022; Zhong & Policarpio, 2024). Zhengzhou City is the capital of Henan Province, one of China's most populous and educationally significant provinces. It is a major hub for vocational education, with a vast number of students across its institutions. Research highlights the unique socio-economic context of students in Henan, many of whom come from rural or economically disadvantaged backgrounds, facing compounded pressures related to their social status and career expectations.

Therefore, a comprehensive exploration of the current mental health status and the underlying influencing factors among vocational education students in Henan Province holds immense significance (Gerber et al., 2015). Such research is crucial for the formulation of targeted and effective intervention measures, ultimately aiming to improve students' mental health outcomes and promote the healthy, sustainable development of vocational education itself. Within this critical research background, conducting a focused study on the mental health issues specific to vocational education students in Henan Province can yield invaluable insights. These insights can then inform the provision of tailored mental health services and support systems for key stakeholders, including education administrators, teachers, and parents. The aforementioned constraining factors not only impede the healthy physical and mental development of students within vocational education but also pose significant obstacles to the overall healthy advancement of vocational education in China. As contributors to the field of educational psychology, it is an inherent responsibility to leverage professional knowledge and research methodologies to address these pervasive problems, which fundamentally underpin the impetus and context for the present study (Liu et al., 2020; Danhui & Phakamach, 2024).

Currently, academic research concerning vocational education in China predominantly focuses on broader developmental frameworks, discussions of its macro-level significance, or the adoption of best practices from international vocational education models for application within the Chinese context. There remains a notable paucity of empirical studies specifically addressing the nuanced mental health challenges faced by vocational education students (Wang, 2005; Xiang, 2017; Jiang, 2020; Shi, 2022). This research gap is particularly pronounced given the escalating academic pressures, uncertain employment landscapes, and the rapid pace of social change that these students must navigate. Despite existing efforts to provide mental health support, many students continue to grapple with issues such as anxiety, depression, and stress, indicating that current mental health intervention measures may not fully meet their specific and evolving needs (Tan & Ma, 2021). Consequently, there is an urgent imperative to delve into the root causes of mental health problems among vocational education students and to rigorously evaluate and subsequently improve the effectiveness of the existing support system. This proactive approach is essential for fostering better mental health and enhancing academic success within this critical educational sector.

Against this backdrop, the present study endeavors to contribute significantly to the field by providing a specific methodological framework and a practical guidance model for addressing the mental health of vocational education students in Zhengzhou city, Henan Province of China. Furthermore, it aims to offer robust theoretical support and an implementable guidance model that can inform and shape vocational education reform practices. By bridging the identified research gap, this study seeks to empower educational stakeholders with evidence-based strategies to cultivate a more





supportive and mentally resilient learning environment for vocational students, thereby contributing to their well-being and the broader societal goals of human capital development.

## Objectives

- 1) To study the current situation of students' Mental Health for Vocational Education in Zhengzhou City, Henan Province of China.
- 2) To create a model to improve the Mental Health of vocational education students in Zhengzhou City, Henan Province of China.
- 3) To evaluate the model of improving the Mental Health Education of Vocational Education in Zhengzhou City, Henan Province of China.

## Literature review

### Mental Health Theories

This section briefly outlines three foundational psychological theories relevant to mental health: Cognitive Behavioral Theory (CBT), Developmental Psychology, and Stress-Coping Theory.

#### 1) Cognitive Behavioral Theory (CBT)

CBT, pioneered by Aaron T. Beck in the 1960s, posits that an individual's emotions and behaviors are primarily influenced by their internal cognitions, rather than directly by external events. Negative thinking patterns are often linked to mental health issues like anxiety and depression. CBT aims to improve mental health by identifying and challenging these irrational thought patterns through techniques such as cognitive restructuring, exposure therapy, and behavioral activation. Empirical research consistently supports CBT's effectiveness in treating various mental disorders and improving overall well-being across diverse populations, including college students and employees (Vogel-Scibilia et al., 2009; Aldao et al., 2010; Hofmann et al., 2012; Ames, 2023). While effective, successful implementation often depends on individual adaptability and therapist competence.

#### 2) Developmental Psychology

Developmental psychology explores individual psychological development and changes across the lifespan, focusing on how individuals navigate challenges and opportunities at different stages. Erik Erikson's theory of psychosocial development is central, proposing eight stages, each with a specific psychosocial crisis that individuals must successfully resolve for healthy development (Erikson, 1950). For instance, adolescence involves resolving identity confusion. Unresolved crises can lead to mental health problems later in life, such as anxiety and interpersonal difficulties (Babakhani, 2019). Recent studies validate Erikson's theory, highlighting the importance of social support networks in fostering adaptability and mental resilience throughout developmental stages (Brown & Lowis, 2003; Berk, 2018).

#### 3) Stress-Coping Theory

Proposed by Richard Lazarus and Susan Folkman in the 1980s, Stress-Coping Theory emphasizes the psychological processes and strategies individuals employ when facing stress. It suggests that an individual's response to stress is shaped by their initial "assessment" of the stressor's threat level and their perceived coping abilities, alongside internal resources and social support. Effective coping strategies, such as positive emotional regulation and problem-solving, significantly alleviate negative stress effects and enhance mental resilience (Folkman & Moskowitz, 2004; Gonzalez, 2016). Social support also plays a crucial role in mitigating mental burden during stressful periods (Gonzalez & Gonzalez, 2017). This theory provides a framework for mental health interventions, focusing on helping individuals identify stressors and develop adaptive coping mechanisms (Wang, 2005; Xiang, 2017; Jiang, 2020; Shi, 2022).

In summary, three core mental health theories. CBT focuses on challenging negative thought patterns. Developmental Psychology, particularly Erikson's stages, examines how successfully navigating life crises impacts mental health. Stress-Coping Theory highlights how an individual's assessment of and response to a stressor influences their mental well-being.

### Educational Psychology Theory





Educational psychology has evolved significantly since the late 19<sup>th</sup> century. Early pioneers like William James and John Dewey emphasized individual differences and experiential learning. The early 20<sup>th</sup> century saw the rise of behaviorism, focusing on observable behavior and reinforcement. Mid-century, cognitive psychology (Piaget, Bruner) shifted focus to internal mental processes, while Vygotsky's sociocultural theory (1978) introduced the crucial role of social interaction and the Zone of Proximal Development (ZPD) (Woolfolk, 2019; Scaletta & Hughes, 2023).

The 21<sup>st</sup> century has diversified, integrating motivation theories like Self-Determination Theory (SDT) by Ryan and Deci, which highlights intrinsic motivation driven by autonomy, competence, and relatedness. Achievement Goal Theory (Ames, 2023) distinguishes between task-oriented (mastery focus) and performance-oriented (external evaluation focus) goals, impacting learning behavior.

Constructivist learning theory, rooted in Piaget's work, posits that learners actively construct knowledge through interaction with their environment. Bandura's Social Learning Theory further emphasizes observational learning, imitation, and the importance of role models, particularly relevant for skill acquisition and professional ethics in vocational education. These theories collectively provide a rich framework for understanding and optimizing learning processes in diverse educational contexts.

In summary, educational psychology has evolved from early behaviorism to modern theories. Pioneers like Piaget and Vygotsky introduced cognitive and sociocultural theories, respectively. Contemporary theories include Self-Determination Theory, focusing on intrinsic motivation, and Constructivism, where learners actively build knowledge. Bandura's Social Learning Theory emphasizes learning through observation.

### **Educational Philosophy Theory**

Educational philosophy has evolved from ancient Greek thinkers like Socrates, Plato, and Aristotle, who emphasized moral cultivation and societal service, to modern diverse approaches. John Dewey's Pragmatic Educational Philosophy (early 20<sup>th</sup> century) championed "learning by doing," advocating for education integrated with real life and practical problem-solving, particularly relevant for vocational training.

Mid-20<sup>th</sup> century saw the rise of Constructivism (Piaget, Bruner), which views learning as active knowledge construction, and Humanistic Educational Philosophy (Rogers, Maslow), focusing on individual personality, emotional needs, and self-actualization through student-centered approaches. Paulo Freire's critical theory and Vygotsky's socio-cultural theory also significantly influenced modern thought by emphasizing social interaction and justice in learning.

Marxist Educational Thought highlights the integration of labor and education for comprehensive development, fostering both technical skills and social responsibility. Finally, Moral Education and Professional Ethics are crucial, drawing from Kant's emphasis on universal moral principles and Aristotle's virtue ethics, to cultivate integrity, responsibility, and ethical decision-making alongside professional skills in vocational education. These philosophies collectively shape educational goals, methods, and values, guiding practices from ancient times to the digital era.

John Dewey famously stated that "philosophy is the general theory of education, and education is the laboratory of philosophy", highlighting their intertwined nature. Historically, education was often subsumed under philosophy, with thinkers like Plato and Aristotle integrating them. However, with the rise of natural science and empirical methodologies in the 19<sup>th</sup> century, educational philosophy faced a crisis of legitimacy, as its normative propositions were deemed difficult to verify scientifically (Friedman, 2024). This led to a shift where educational science gained dominance, and philosophy's role in education was questioned, moving towards linguistic analysis.

Despite this historical separation, educational psychology and philosophy maintain a complex relationship. Philosophy, as the "love of wisdom," provides a broad framework for understanding human existence and values, while educational psychology applies psychological theories to educational contexts (Woolfolk, 2019). Conceptually, both aim for "wisdom enlightenment," but philosophy seeks broader truth exploration, while educational psychology focuses on improving mental adaptability and problem-solving within education.

Methodologically, philosophy often employs qualitative, abstract reasoning, while educational psychology tends towards quantitative, empirical research (Biesta, 2024). However, this independence





is dynamic; they are deeply interconnected. Historically, educational psychology was subordinate to philosophical education, and many philosophers were also early educational psychologists (e.g., Socrates). Today, interdisciplinary integration is crucial. Educational psychology's philosophical nature is evident in its reliance on philosophical thought for theoretical grounding and its capacity to prompt philosophical reflection. Any profound educational psychology theory or reform inherently embodies and requires philosophical analysis (Biesta, 2024). This cross-fusion enriches both fields, allowing for a more comprehensive understanding of learning and human development.

In summary, an educational philosophy has evolved from ancient Greek thinkers to modern approaches. John Dewey's pragmatism emphasized "learning by doing," while mid-20th-century movements like Constructivism and Humanism focused on active knowledge construction and student-centered learning. Marxist and Moral Education theories also significantly shaped educational goals and values.

### **Vocational Education Theories**

Vocational education is shaped by several key theories. The Dual System Model (e.g., Germany) combines enterprise training with school education, ensuring a strong link between theory and practice. This model enhances vocational skills, boosts employability, and fosters industry participation in curriculum development, providing a crucial reference for global vocational education (Phakamach et al., 2023).

**1) Lifelong Learning Theory** emphasizes continuous skill development throughout one's career, essential in rapidly changing industries. Educational psychology, particularly self-efficacy and self-determination theories, guides this by fostering intrinsic motivation and effective learning strategies. Constructivist and pragmatic philosophies further support continuous knowledge construction through practice and reflection (Jaldemark & Theorell, 2023; Koç, 2024). Vocational education should integrate these by offering flexible modules and fostering a learning culture.

**2) Competency-Based Education (CBE)** focuses on cultivating practical abilities, evaluating students on their capacity to perform specific career tasks rather than just theoretical knowledge (Boahin, 2018). CBE's ability-oriented design, personalized pace, and tailored support align with motivation theories (e.g., self-determination) by stimulating intrinsic motivation through clear goals (Deci et al., 1991). It also aligns with constructivism, as students actively construct knowledge through practical operations and problem-solving. CBE effectively enhances vocational skills and adaptability by directly linking curriculum and assessment to real-world tasks and industry needs (Oroszi, 2020; Deng, 2022; Phakamach et al., 2023a; Vavrečková et al., 2025).

### **Summary of Key Educational and Psychological Theories**

This overview synthesizes foundational theories across mental health, educational psychology, educational philosophy, and vocational education.

**Mental Health Theories** include CBT, which links thoughts, emotions, and behaviors; Developmental Psychology (Erikson's stages), emphasizing lifespan psychosocial challenges; and Stress-Coping Theory, focusing on individual assessment and strategies for managing stress.

**Educational Psychology Theories** trace the field's evolution from behaviorism to cognitivism (Piaget, Vygotsky), incorporating motivation theories (Self-Determination, Achievement Goal) and Social Learning Theory (Bandura), all emphasizing active learning and skill development.

**Educational Philosophy** highlights the historical intertwining of philosophy and education (Dewey), the shift towards scientific empiricism, and modern influences like Pragmatism, Humanism, and Marxist thought, shaping educational goals and values.

Lastly, **Vocational Education Theories** feature the Dual System Model (integrating theory and practice), Lifelong Learning (continuous skill development), and Competency-Based Education (focusing on practical, job-relevant skills and personalized learning). Collectively, these theories provide a comprehensive framework for understanding human development, learning processes, and effective educational practices.

## Conceptual Framework

Based on a review of relevant literature, documents, and research, the researchers designed the research methodology by establishing a conceptual framework to identify the results of this research, as shown in Figure 1.

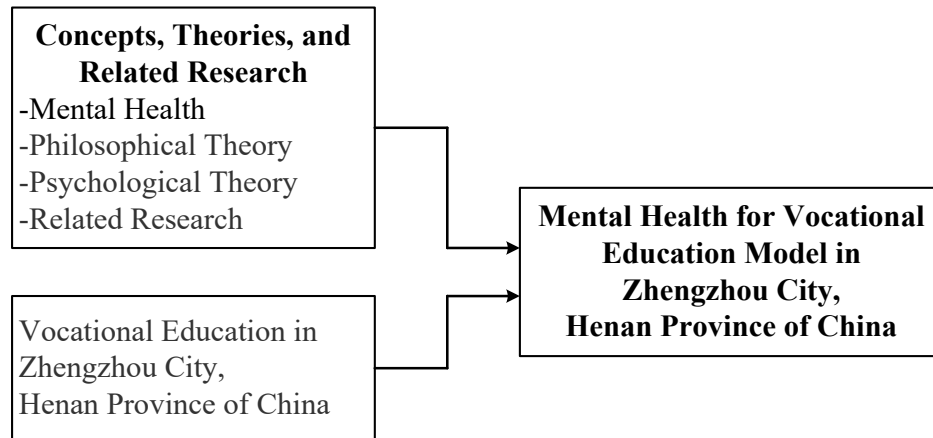


Figure 1: Research Conceptual Framework

## Methodology

This study employs a mixed-methods research design, integrating both quantitative and qualitative approaches, to gain a deep and comprehensive understanding of factors influencing the mental health of students and teachers in vocational education. By analyzing identified problems and incorporating philosophical insights, the research aims to develop better solutions for students' mental health challenges. This methodological choice is intended to overcome the limitations of single-method research, enabling a more nuanced understanding of the diverse and complex mental health issues prevalent in vocational education. Ultimately, this approach will provide accurate descriptions that can inform educational psychology and philosophy in addressing student mental health concerns effectively. Details regarding the research methods are as follows:

### Population and Sample

#### Population:

The population used in this research study consisted of the following population groups:

(1) *Students*: This study focuses on a population of 47,800 students from four vocational colleges in Zhengzhou City, Henan Province of China. The vocational education student groups in Henan Province exhibit diverse backgrounds, including variations in age, gender, region, cultural level, and family economic conditions. These factors may influence students' learning psychology and behavior, and they are comprehensively considered in this research.

(2) *Teachers*: This study focuses on a population of 1,000 teachers from four vocational colleges in Zhengzhou City, Henan Province of China. The vocational education teachers in Henan Province come from diverse backgrounds, including differences in age, gender, region, educational level, and professional experience. These factors may influence their teaching psychology and behavior, and they are comprehensively considered in this research.

#### Sample:

The sample group used in this research study was determined as follows, including the sampling method:

(1) *Students*: To study the application effect of educational psychology and philosophy in vocational education, a total of 381 students were selected from four colleges across different cities, majors, and grades. This selection ensured the diversity and representativeness of the student sample.

(2) *Teachers*: Additionally, 12 psychology teachers from the same four colleges were included in the study. Their selection considered variations in professional experience and teaching backgrounds to enhance the study's comprehensiveness.



(3) *Experts*: Nine experts in student mental health care in educational institutions, meeting the specified qualifications, namely: (1) those with over 10 years of experience in student mental health care in educational institutions, or (2) educational administrators with over 5 years of experience in student competency development projects, or (3) policymakers and implementers of student mental health care policies in educational institutions with demonstrable and recognized achievements in the education sector.

The sampling process was as follows:

1) *Selection of Institutions*: Four vocational colleges were selected in Zhengzhou, Henan Province of China, consisting of two public and two private institutions. This was done to ensure the sample was representative of the educational context in the region.

2) *Sampling Method*: The study used stratified random sampling, classifying samples to reflect the characteristics and differences of the research subjects.

3) *Student Sample*: 381 students were chosen from the four selected colleges. The selection criteria included diversity across different cities, majors, and grades to ensure the sample was representative.

4) *Teacher Sample*: 12 psychology teachers from the same four colleges were included, with their selection considering variations in professional experience and teaching backgrounds.

5) *Expert Sample*: Nine experts were chosen based on specific qualifications, such as over 10 years of experience in student mental healthcare, educational administrators with over 5 years of experience, or policymakers with recognized achievements.

The sample size for all studies was determined using stratified random sampling applied to vocational colleges. The relevant samples were classified to accurately reflect the characteristics and differences of the research subjects in subsequent data analysis and result interpretation. In terms of sample selection, the research institute selected 2 public and 2 private higher vocational colleges in Zhengzhou, Henan Province of China. Considering different family backgrounds, regions, cultural levels, and other factors, these higher vocational colleges recruit students from Henan Province. The number of students is relatively large, and the research is operational. In Vocational Education in Henan Province of China, public universities and private universities are unified in enrollment, so the research is more authentic and the data is more accurate. Student and teacher populations and sample as shown in Tables 1 and 2, respectively.

Table 1: Student Population and Sample

Colleges	Nature	N	S
Henan Industry and Trade Vocational College	Public	13,650	109
Zhengzhou Institute of Technology	Private	12,850	102
Henan Mechanical & Electrical Vocational College	Public	11,600	93
Zhengzhou Information Engineering Vocational College	Private	9,700	77
Total		47,800	381

Table 2: Teacher Population and Sample

Colleges	Nature	N	S
Henan Industry and Trade Vocational College	Public	303	3
Zhengzhou Institute of Technology	Private	284	3
Henan Mechanical & Electrical Vocational College	Public	223	3
Zhengzhou Information Engineering Vocational College	Private	190	3
Total		1,000	12



## Research Instruments

### 1) *Questionnaire Investigation*

This study aims to assess the mental health status of vocational education students in Henan Province through a comprehensive questionnaire survey. The survey collects demographic data, evaluates mental health levels, and gauges students' perceptions and attitudes towards mental health education, utilizing both online and offline distribution to ensure a diverse and representative sample. Strict adherence to informed consent and privacy protection ensures data authenticity and reliability. The analysis will explore overall mental health, common mental health issues, and awareness of mental health education, comparing findings across different student demographics to identify key influencing factors. Ultimately, the research seeks to provide empirical evidence to inform policy-making, optimize mental health services, promote holistic development, and enhance the vocational capabilities of students in Henan Province.

To ensure the quality of the questionnaire, its structural validity, content validity, and language appropriateness were assessed by three research instrument experts. Items with an Index of Consistency (IOC) of .5 or higher were selected, resulting in IOC values ranging from .67-1.0, with an overall IOC of .837. The questionnaire was then pilot-tested with 30 students and teachers not included in the main sample. Cronbach's Alpha Coefficient was used to determine reliability, and Item Total Correlation was used for item discrimination. The overall reliability of the questionnaire was .947.

### 2) *Semi-structured Interview Guide*

This study utilizes semi-structured interviews with mental health education teachers in Henan Province to gain in-depth qualitative insights into the mental health of vocational education students. These experienced teachers serve as crucial information providers, detailing common student mental health issues in academic and personal life, key influencing factors, and the current state and effectiveness of school mental health education. By prioritizing open-ended and profound discussions, the interviews aim to uncover the root causes of students' struggles, such as academic pressure, interpersonal challenges, and career uncertainty, while also evaluating schools' strengths and weaknesses in mental health support. The findings from these interviews will comprehensively map the mental health landscape of vocational education students in Henan Province, providing a robust foundation for developing targeted educational interventions and support policies.

The research instruments included a 5-point Likert-scale questionnaire. The scoring criteria were: "Highest" (5 points), "High" (4 points), "Moderate" (3 points), "Low" (2 points), and "Lowest" (1 point).

### 3) *Focus Group Discussion Guides*

Focus group discussions serve to confirm the information derived from questionnaires and interviews, in alignment with the specific research questions.

## Data Collection

Qualitative data were collected through online interviews and focus group discussions with experts. Quantitative data were collected by distributing 381 internet links to questionnaires, with a 100% return rate (381 questionnaires). Data collection took place between January and March 2025.

## Research Procedures

The research followed a four-step process:

### Step 1: Ethical Considerations and Instrument Validation

Before data collection, the research instruments, including the questionnaire and semi-structured interview guide, underwent a rigorous validation process. Three research instrument experts assessed the questionnaire's structural validity, content validity, and language appropriateness, ensuring all items had an IOC of .5 or higher, with an overall IOC of .837. Following this, the questionnaire was pilot-tested with 30 students and teachers not part of the main sample to determine reliability using Cronbach's Alpha Coefficient (overall reliability of .947) and Item Total Correlation for item discrimination. For all participant interactions, the study strictly adhered to the principle of informed consent, clearly explaining the survey's purpose and assuring the protection of personal privacy to enhance data authenticity and reliability. The questionnaire employed a 5-point Likert scale (Highest=5, High=4, Moderate=3, Low=2, Lowest=1).





### **Step 2: Quantitative Data Collection via Questionnaire Survey**

To assess the mental health status of vocational education students, quantitative data were collected from 381 students across four vocational colleges in Zhengzhou City, Henan Province of China, from January to March 2025. A stratified random sampling method was applied to select students from different cities, majors, and grades to ensure the sample's diversity and representativeness. The questionnaire survey included sections on students' basic information (gender, grade, major), a mental health level assessment, and their cognition and attitudes toward mental health education. Data collection was facilitated by distributing 381 internet links to the questionnaires, achieving a 100% return rate. The results will be analyzed from multiple dimensions, including overall mental health levels, common mental health problems, and the cognitive status of mental health education, with comparisons made across various student demographics to identify key influencing factors.

### **Step 3: Qualitative Data Collection via Semi-structured Interviews**

For in-depth qualitative insights into the mental health of vocational education students, semi-structured interviews were conducted with 12 psychology teachers from the same four vocational colleges in Zhengzhou City, Henan Province of China. These teachers were selected based on their diverse professional experience and teaching backgrounds, serving as key information providers due to their rich experience and understanding of students' mental conditions. The interview content covered common student mental health problems in learning and life, main influencing factors, and the current situation and effectiveness of school mental health education. The interviews prioritized openness and depth to explore teachers' observations and insights into the root causes and coping strategies for student mental health issues, such as academic pressure, interpersonal barriers, and career development confusion. This direct engagement provided first-hand information crucial for the study.

### **Step 4: Data Validation through Focus Group Discussions**

Following the collection and initial analysis of both quantitative data from questionnaires and qualitative data from semi-structured interviews, focus group discussions will be conducted. These discussions will serve a critical role in confirming and validating the information and emerging themes derived from the initial two data collection phases. By engaging groups of participants in structured conversations guided by specific research questions, the focus groups will help to triangulate findings, deepen understanding of identified issues, and ensure that the interpretations of the collected data accurately reflect the experiences and perceptions of students and teachers regarding mental health in vocational education.

### **Data Analysis**

This study employs a comprehensive, three-step data analysis process for its mixed-methods design, utilizing statistical software for quantitative data and qualitative software for thematic analysis.

First, quantitative data from 381 student questionnaires will undergo rigorous cleaning and preparation. Descriptive statistics (frequencies, percentages, means, standard deviations) will summarize demographics and mental health levels. Inferential statistics, including *t*-tests, ANOVA, and correlation analysis ( $p < .05$ ), will identify key influencing factors and group differences.

Second, qualitative data from 12 teacher interviews will be analyzed using thematic analysis. This involves transcribing interviews, familiarization with the data, initial coding, and grouping codes into themes. These themes will be reviewed, refined, and clearly defined to capture insights into student mental health problems, influencing factors, and the effectiveness of existing support. The qualitative analysis from the 9 experts' focus group discussions confirmed and validated the research findings. The discussions served to triangulate data and deepen understanding. Experts provided high approval ratings for the proposed five-dimensional mental health model, affirming its scientific and operational viability, utility, and suitability for vocational college students.

Finally, mixed methods integration and data validation will occur. Findings from both quantitative and qualitative analyses will be triangulated to identify convergences, divergences, and complementarities. Focus group discussions will then be conducted and analyzed thematically to confirm and elaborate on these findings, ensuring a comprehensive and robust understanding of mental health in vocational education.



## Results

Based on the research study, the findings and data analysis, according to the research objectives, are presented as follows:

### 1. The Results of the Current Situation of Students' Mental Health for Vocational Education in Henan Province of China.

This study investigated the mental health status of vocational college students in Zhengzhou City, Henan Province of China, using a convenience sampling method. A total of 381 questionnaires were distributed to students across four vocational colleges, encompassing all three academic grades (freshmen, sophomores, and juniors). This approach aimed to ensure sample representativeness and data diversity, providing a robust foundation for analyzing mental health trends. The collected demographic information included participants' gender, university affiliation, and grade level. This comprehensive background data is crucial for revealing potential differences in mental health across various groups, analyzing shifts in mental stress over academic years, and informing targeted mental health support and educational interventions. Understanding these demographic variations allows for a more nuanced interpretation of mental health data, guiding future efforts to optimize student well-being.

This section details the systematic analysis of vocational education students' mental health in Zhengzhou City, utilizing a questionnaire-based survey. The core objective was to comprehensively understand the prevalence and differential characteristics of mental health issues among these students, thereby providing a theoretical basis for future mental health education interventions and policy formulation. The survey instrument was adapted from the "College Student Mental Health Scale," with specific indicators designed to assess students' mental experiences in key domains: learning, daily life, social interaction, and emotional adaptation.

The questionnaire covered ten core dimensions of mental health: somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, terror (fear), paranoia (bigotry), psychoticism (mental disorder), and sleep and eating problems. These dimensions collectively offer a comprehensive reflection of the mental landscape of vocational education students in Zhengzhou City across various psychological areas. To ensure the scientific rigor and effectiveness of the survey, the questionnaire underwent pretesting and extensive reliability and validity testing during its development. The results of these tests confirmed its strong internal consistency and structural validity, making it highly suitable for large-scale sample surveys.

The data analysis combined descriptive statistical analysis with difference testing. Descriptive statistics were employed to delineate the basic characteristics and overall distribution trends of the students' mental health levels. This included calculating the mean, standard deviation, and median for each mental health dimension, providing a clear picture of their emotional regulation, social adaptation, and stress management capabilities. For difference testing, independent samples *t*-tests and one-way ANOVA were utilized to conduct in-depth analyses of mental health disparities among students based on gender, grade, specialty category, and registered residence (hometown). This approach aimed to uncover how individual characteristics potentially influence mental health outcomes.

The quantitative data were processed using Microsoft Excel and Statistical Program to ensure accuracy and consistency in reporting. The primary statistical indicators used were the mean, standard deviation, overall mean (for combined dimensions), and percentage. In some cases, a weighted average formula was used for combined means (e.g., male and female combined means). These methodical calculations formed the basis for all presented results, ensuring a robust and reliable statistical foundation.

#### 1.1 Descriptive Statistical Analysis of Questionnaires: Demographics

A systematic analysis of demographic data provided essential background for understanding the mental health status of vocational education students in Zhengzhou City, Henan Province of China, particularly concerning gender, grade, major, and hometown, as shown in Table 3 below.





Table 3: Descriptive Statistics of Questionnaire Survey (n=381)

Project		Sample	%
Gender	Female	170	44.62
	Male	211	55.38
Total		381	100%
Grade	Freshman	133	34.91
	Sophomore	146	38.32
	Junior	102	26.77
Total		381	100%
Major	Science	66	17.32
	Management	66	17.32
	Education	84	20.50
	Literature	54	14.17
	Engineering	62	16.27
	Other	49	18.60
Total		381	100%
Hometown	Rural	150	39.37
	Urban	231	60.63
Total		381	100%

From Table 3, the survey collected 381 valid questionnaires, comprising 211 males (55.38%) and 170 females (44.62%). While relatively balanced, the slight male predominance may reflect the enrollment characteristics of vocational colleges, which often favor science, engineering, and technology majors traditionally attracting more male students. This gender distribution highlights the need for personalized mental health interventions acknowledging potential differences in mental health expression (e.g., men often internalizing problems, women showing higher rates of anxiety/depression).

In terms of grade distribution, sophomores constituted the largest group at 38.32%, followed by freshmen (34.91%) and juniors (26.77%). The analysis suggests distinct mental health challenges at each stage. Freshmen are typically in an adaptation period with fewer initial problems. Juniors, while facing internship and employment pressures, may exhibit more stable mental states due to campus adaptation. Sophomores, however, appear particularly vulnerable, positioned at the intersection of increasing academic demands and initial career planning. This transitional phase may escalate mental pressure, underscoring the necessity for targeted mental, career planning, and academic support for this group.

Regarding major distribution, students majoring in education comprised the largest proportion (20.50%), followed by management (17.32%) and science (17.32%). The study acknowledges that different majors present unique stressors. Education majors face pressure from practical teaching assessments; management majors encounter fierce employment competition; and science/engineering students bear heavy academic loads from complex coursework and practical experiments. Literature majors (14.17%) might face limited employment channels, impacting their mental state. Given vocational education's focus on practical skills, schools must provide personalized mental health support and vocational guidance tailored to the specific challenges of each major.

Finally, the students' origin (hometown) revealed that urban students (60.63%) significantly outnumbered rural students (39.37%). This disparity could be linked to enrollment policies, economic development, and family backgrounds. Urban students typically benefit from superior educational resources and social support. Conversely, rural students often face greater economic pressure, academic adaptation difficulties, and social interaction challenges upon entering vocational colleges. Research indicates higher anxiety and loneliness among rural students due to environmental adaptation

difficulties and smaller interpersonal networks. Economic factors, such as the need for part-time work, further exacerbate their pressure. Consequently, vocational colleges should prioritize enhanced support for rural students, including financial assistance, mental health counseling, and tailored career development planning, to facilitate their successful adaptation and future career progression.

In summary, the mental health of vocational college students in Zhengzhou City, Henan Province of China, is influenced by multiple demographic factors. Recognizing these group-specific differences in mental stress sources and problem manifestations is crucial. Targeted mental health education and intervention measures must be designed to enhance students' mental adjustment abilities, improve overall mental health levels, and provide robust psychological protection for their academic and future vocational development. This can be achieved through regular mental assessments, mental counseling, and group-based career planning guidance.

### 1.2 Analysis of Students' Mental Health Status from Different Dimensions

The statistical analysis of mental health status across ten dimensions revealed consistent "Moderate" levels of mental health challenges among vocational college students, with overall mean scores ranging from 3.05 to 3.11. This uniformity across categories, despite slight variations, indicates widespread but manageable mental health concerns across the student body. These findings are crucial for informing targeted interventions and support.

Obsessive-Compulsive Disorder (Mean=3.11, S.D.=1.22): This dimension showed a moderate presence of intrusive thoughts or repetitive behaviors. Students might employ these as maladaptive coping mechanisms in demanding environments, leading to reduced learning efficiency and increased psychological burden. Interventions should focus on cognitive restructuring, mindfulness, and stress management.

Sleep and Diet (Mean=3.11, S.D.=1.25): Moderate disturbances in sleep and eating habits were prevalent, with high variability among individuals. These issues are likely linked to irregular schedules and academic workload, impacting physical health, concentration, and academic outcomes. Integrated psychoeducation on sleep hygiene, balanced nutrition, and healthy lifestyle routines is essential.

Interpersonal Sensitivity (Mean=3.10, S.D.=1.21): A moderate tendency for excessive concern about social evaluation was observed, potentially leading to social withdrawal and difficulties in peer relationships. This can undermine self-esteem and belonging. Interventions should include social skills development, assertiveness training, and peer-based support.

Mental Disorder (Psychoticism) (Mean=3.10, SD=1.21): This dimension, representing general mental distress or cognitive dysfunction, showed moderate psychological burden and reduced resilience. Unaddressed, these issues can hinder academic persistence and personal growth. Early screening, professional counseling, and comprehensive mental health education are vital.

Depression (Mean=3.10, S.D.=1.24): Moderate levels of depressive symptoms, such as persistent low mood and loss of interest, were present, with notable individual differences. Depression can severely affect academic performance and interpersonal connections. A layered support approach, combining clinical intervention, peer group support, and resilience-building activities, is necessary.

Anxiety (Mean=3.09, S.D.=1.22): Moderate levels of excessive worry and nervousness were identified, stemming from academic expectations, career uncertainty, and environmental adaptation. These impair focus and trigger fear of failure. Preventative interventions like stress management, mindfulness training, and stigma-reduction campaigns are crucial.

Hostility (Mean=3.08, S.D.=1.19): A moderate but noticeable tendency towards aggressive or antagonistic attitudes in response to stressors was observed. Such reactions can cause interpersonal conflict. Conflict resolution education, emotional regulation training, and empathy-promoting activities are recommended.

Fear (Terror) (Mean=3.08, S.D.=1.24): Moderate apprehension levels, with individual variations, were evident. Students experience fear related to performance, social situations, or new environments. Interventions integrating confidence-building, realistic self-appraisal, and gradual exposure to stressors are needed.

Bigotry (Paranoia) (Mean=3.07, S.D.=1.24): This dimension, interpreted as rigid or intolerant thinking, showed moderate levels. Such cognitive patterns limit adaptability and hinder teamwork in



increasingly multicultural environments. Interventions should promote critical thinking, perspective-taking, and intercultural competencies.

Somatization (Mean=3.05, S.D.=1.13): This dimension, reflecting psychological stress expressed as physical symptoms, had the lowest mean but still indicated moderate levels. Though seemingly less severe, these symptoms can obscure deeper psychological problems. Educational campaigns on mind-body connections and reducing help-seeking stigma are beneficial.

Overall, the findings consistently indicate that vocational college students experience moderate mental health challenges across all surveyed dimensions. These results provide valuable empirical evidence for developing comprehensive, targeted, and personalized psychological support programs and policies in educational settings.

### 1.3 Analysis of Mental Status of Students of Different Genders

Analyzing mental health by gender revealed nuanced differences within the overall moderate levels of mental health challenges among vocational college students. While overall mean scores for both genders generally ranged from 3.04 to 3.13, indicating widespread issues, subtle distinctions in specific dimensions highlight varying sources of stress and coping mechanisms.

Across most dimensions, male students generally showed slightly higher mean scores than female students, though the differences were often minor. For instance, in Obsessive-Compulsive Disorder, males had a mean of 3.13 compared to females' 3.08. Similarly, Sleep and Diet (males: 3.13, females: 3.08), Interpersonal Sensitivity (males: 3.11, females: 3.08), Anxiety (males: 3.11, females: 3.06), Hostility (males: 3.10, females: 3.05), and Fear (males: 3.10, females: 3.05) all indicated slightly elevated moderate levels for male students.

These subtle trends suggest that:

*Obsessive-Compulsive Disorder:* Higher scores among males might stem from performance anxiety and perfectionistic standards, potentially disrupting academic and social functioning. Interventions should focus on cognitive restructuring and mindfulness.

*Sleep and Diet:* Slightly higher scores for males indicate more prevalent challenges with irregular sleep and poor dietary habits, possibly exacerbated by demanding schedules. Psychoeducational programs on sleep hygiene and nutrition are crucial.

*Interpersonal Sensitivity:* Males showing slightly higher sensitivity suggest a moderate concern about social evaluation, potentially leading to fear of criticism and social withdrawal. Social skills training and peer support networks could be beneficial.

*Anxiety:* Higher anxiety in males may stem from competitive academic expectations, career uncertainty, and adapting to the vocational environment. Stress management, mindfulness, and psychoeducation are important.

*Hostility:* The slightly elevated hostility in males suggests more defensive or aggressive reactions to stress, potentially impacting social harmony. Conflict resolution and emotional regulation training are recommended.

*Fear:* Higher fear in males, often overlapping with anxiety, could relate to performance evaluations or new environments. Confidence-building exercises and cognitive restructuring are needed.

For Depression, scores were very close (males: 3.10, females: 3.08), indicating similar moderate levels for both genders, suggesting widespread sadness, loss of interest, and reduced motivation. Bigotry (males: 3.07, females: 3.07) showed identical moderate levels, implying rigid thinking exists equally across genders, necessitating training in intercultural competence and critical thinking. Somatization (males: 3.06, females: 3.04) was the lowest but still moderate, with minimal gender difference, highlighting the need for awareness of mind-body connections to address physical expressions of psychological stress.

Overall, while the mental health challenges are widespread across both genders, the subtle differences observed emphasize the need for comprehensive, targeted, and personalized mental health interventions. This includes systematic screening, tailored educational programs, and group-based support, designed to address the unique pressures and coping styles prevalent in male and female



vocational college students. By prioritizing mental health promotion, vocational colleges can better equip all students to manage stress, build resilience, and thrive both academically and socially.

## **2. The Results of Creating a Model of Mental Health in Vocational Education in Zhengzhou, Henan Province of China**

Students in vocational colleges in Zhengzhou City, Henan Province of China, face numerous mental health challenges in terms of academic pressure, career development, and social adaptation, such as anxiety, depression, obsessive-compulsive symptoms, and social sensitivity. These mental troubles not only affect students' learning efficiency and quality of life but may also hinder their future career development. Therefore, creating a mental health model can improve the mental health level of vocational education students.

### **2.1 Theoretical Basis and Principles for Model Construction**

This study developed a mental health model for vocational education in Zhengzhou City, grounded in multiple theoretical frameworks to ensure its scientific validity, adaptability, and practicality. Key among these is developmental mental health education theory, which emphasizes supporting students' holistic growth and potential, not just problem correction, by integrating proactive prevention and promotion of psychological development.

The model also draws on preventive intervention theory to guide its crisis warning and intervention system. This theory advocates a "three-in-one" approach (primary prevention, intermediate intervention, later rehabilitation) for systematic risk management, focusing on early identification, timely intervention, and dynamic tracking of mental health crises to ensure student safety. Furthermore, ecosystem theory underpins the model's emphasis on multi-system interactions, leading to the design of a home-school-community collaborative support mechanism to foster comprehensive student mental health.

The model's construction adheres to principles of systematicity, ensuring a cohesive and coordinated support system; development, targeting comprehensive growth beyond current issues; individual differences, allowing for personalized support tailored to diverse student needs; and sustainability, promoting long-term optimization. This integrated theoretical and principled approach aims to establish a practical, dynamic, and complete mental health model to enhance the overall well-being of vocational college students in Zhengzhou City.

### **2.2 Model Mental Model for Vocational Education Students in Zhengzhou, Henan Province of China**

Create a mental model for vocational education students in Zhengzhou City, Henan Province of China, as shown in Figure 2. This model is based on the theories of developmental mental health education, prevention, and intervention, and ecosystem theory, and follows the principles of systematicity, development, individual differences, and sustainability. It aims to scientifically and standardly guide the development of mental health education in vocational colleges, and enhance students' mental quality and comprehensive development ability.



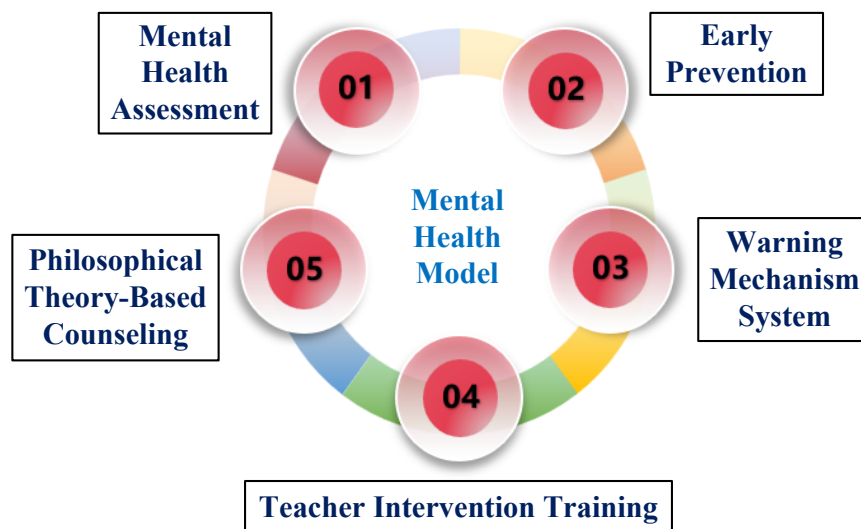


Figure 2: Mental Health Model

The model from Figure 2 was designed as a multi-level, multi-component structure that addresses prevention, education, support, and crisis intervention in an integrated manner. In the following sections, each part of the model will be explained in detail, including its goals, operational strategies, and expected outcomes, to help readers fully understand how these elements interact and can be practically applied to improve the mental well-being of vocational education students. The following sections will elaborate on the operational details of each component within the model, providing clear guidance on their practical implementation.

Vocational college students in Zhengzhou City, Henan Province of China, face significant mental health challenges, including anxiety, depression, obsessive-compulsive symptoms, and social sensitivity. These issues, stemming from academic pressures, career development uncertainties, and social adaptation difficulties, negatively impact their learning efficiency, quality of life, and future career prospects. To effectively address these pervasive concerns, this study developed and implemented a comprehensive mental health model for vocational education.

The model's construction is deeply rooted in robust theoretical frameworks: developmental mental health education theory, which emphasizes holistic student growth and active prevention; preventive intervention theory, guiding the systematic management of mental health risks through early identification and timely intervention; and ecosystem theory, underscoring the importance of multi-system interactions (home, school, society) for comprehensive support. These theoretical underpinnings are complemented by key principles: systematicity (ensuring a cohesive support structure), development (fostering long-term growth), individual differences (providing personalized support), and sustainability (promoting dynamic optimization). This multi-faceted foundation ensures the model's scientific rigor, adaptability, and practicality.

The developed mental health model is a multi-level, multi-component structure that comprehensively integrates prevention, education, support, and crisis intervention. Its operational implementation is detailed across several key areas:

**Mental Health Assessment:** A regular and standardized assessment system is established, encompassing basic admission screenings, semesterly checks, and special assessments for high-risk groups. Utilizing diverse methods like scales, interviews, and observations, it identifies potential problems early and classifies risks (green, yellow, red) for targeted intervention, while ensuring strict data privacy.

**Early Prevention:** This component focuses on enhancing mental health awareness and education. It provides students with essential coping strategies for stress, emotional management, and interpersonal skills through lectures, interactive workshops, and dedicated courses for freshmen. Both online and offline channels are utilized to disseminate information and foster positive mental health concepts.



*Warning Mechanism System:* A comprehensive system monitors student mental health, integrating education with an early warning and intervention system. This includes a dedicated mental health management team, a risk grading mechanism, professional counseling services (mental health room, hotline), and robust school-family-society linkages for crisis response.

*Teacher Intervention Training:* Systematic training programs equip teachers with the skills to identify mental health problems, provide effective support, and manage crises. The training, delivered in stages (basic, skill enhancement, practical, feedback), targets all staff interacting with students, enhancing the school's overall capacity for mental health support.

*Philosophical Theory-Based Counseling:* Innovatively, the model integrates philosophical theories into mental health education. Through a four-stage process (enlightenment, problem-oriented training, practical training, mental practice), it guides students to use philosophical thinking, such as Stoicism, for obsessive-compulsive symptoms, to fundamentally adjust cognitive patterns, build resilience, and enhance adaptability in the face of life's challenges.

In summary, this model provides a holistic, theoretically driven, and practically implementable framework designed to significantly improve the mental well-being and comprehensive development of vocational college students in Zhengzhou City, ensuring they are better equipped to navigate academic, personal, and career demands.

### **3. Model Evaluation Results of Mental Health for Vocational Education in Zhengzhou City, Henan Province of China**

This section details the comprehensive evaluation of the newly developed mental health model for vocational education in Zhengzhou City, Henan Province of China, focusing on its scientificity, applicability, innovation, and operability. The evaluation aimed to gather authoritative feedback for further improvement and promotion of the model.

#### **Evaluation, Design, and Implementation**

To scientifically assess the model, in-depth interviews were conducted with 12 mental health education experts and vocational college leaders from Zhengzhou City and surrounding areas. These experts, with over 70% possessing more than 10 years of professional experience, represented diverse roles including university researchers, mental health center directors, and frontline teachers, ensuring a comprehensive evaluation perspective across theoretical, managerial, and practical aspects. Interviews were conducted flexibly (face-to-face, online, telephone) from early to mid-May 2025, lasting 45-60 minutes on average. A semi-structured interview and focus group by an expert outline guided discussions around the model's theoretical basis, practical applicability, conceptual and methodological novelty, and feasibility in implementation, while also encouraging specific optimization suggestions. This rigorous approach ensured the collection of high-quality, authentic, and effective first-hand information, providing solid data for subsequent analysis and refinement.

#### **Model Evaluation Results**

Overall, the evaluation demonstrated a high level of recognition and acceptance for the five-dimensional mental health education model. Across all key components—Mental Assessment, Early Prevention, Warning Mechanism System, Teacher Intervention Training, and Philosophical Theory Mental—all evaluation indicators (Utility, Feasibility, Suitability, Accuracy) exceeded the 70% threshold, confirming strong expert consensus on the model's validity and operational potential.

Mental Health Assessment, Early Prevention, and Warning Mechanism System received overwhelmingly positive feedback, with most indicators reaching or exceeding 97%. Experts highlighted the crucial role of systematic screening, proactive preventive strategies, and robust early-warning systems in effectively identifying and addressing student mental health needs, especially given vocational students' diverse backgrounds and pressures.

Teacher Intervention Training and Philosophical Theory Mental components, while recognized for their innovation and potential, received slightly lower ratings (89-94% range) in feasibility and operability. Experts acknowledged the necessity of empowering teachers but raised concerns about workload and the need for professional development and simplified materials. Similarly, the philosophical approach was praised for its cultural resonance and depth, but experts noted challenges regarding student exposure to philosophy and the need for trained facilitators and accessible activities.







### Applicability of Mental Health Model

Experts generally affirmed the model's high application value and local adaptability to the vocational education context in Zhengzhou City. It effectively addresses common student issues like academic pressure, employment anxiety, and emotional regulation difficulties through its comprehensive, dynamic intervention mechanisms. Unlike traditional emergency-focused models, this model emphasizes full-process, full-coverage support, accurately identifying potential risks, and providing personalized interventions. Its design specifically considered the rapidly expanding vocational education system in Henan Province, characterized by increasing student numbers, complex backgrounds, and often insufficient mental health resources. The model's phased construction and differentiated application strategies allow for flexible adjustment by individual institutions, significantly enhancing its adaptability and feasibility for practical promotion within the region.

The focus group discussions were conducted with nine experts to confirm and validate the findings from the questionnaires and interviews. The discussions served to triangulate data and deepen the understanding of mental health issues among students and teachers. The expert evaluation of the proposed five-dimensional mental health model yielded high approval ratings, confirming its scientific and operational viability, utility, feasibility, suitability, and accuracy. This validated the model's potential to address service gaps and align with a holistic approach to mental health.

In summary, the expert evaluation and focus group discussion processes provide robust support for the model's scientific foundation and practical relevance, offering concrete pathways for its future adaptation, scale-up, and integration into vocational education policy.

### Discussion

This section thoroughly discusses the study's key findings about its core objectives, theoretical underpinnings, and existing literature. The research aimed to systematically investigate the mental health status of vocational college students in Zhengzhou City, Henan Province of China, design a scientifically sound and practically feasible intervention model, and rigorously evaluate this model through expert input. By employing a mixed-methods approach, the study effectively integrated quantitative data with qualitative insights, providing a comprehensive understanding of students' psychological challenges and effective strategies for improvement.

#### 1. Discussion of Mapping the Mental Health Status of Vocational Students

The initial objective of mapping the mental health status of vocational education students in Zhengzhou City, Henan Province of China, was comprehensively achieved. The research revealed that while students generally exhibited moderate psychological risk profiles, these challenges were widely distributed across several domains. Specifically, quantitative data from a sample of 381 vocational students indicated prominent issues such as obsessive-compulsive symptoms (mean 3.11), sleep and diet problems (mean 3.10), interpersonal sensitivity (mean 3.09), and general anxiety and depression (means around 3.09). These findings suggest that vocational students consistently experience moderate, persistent psychological stress requiring targeted attention, rather than just severe clinical manifestations.

The prevalence of these challenges aligns with previous academic discussions, acknowledging the unique stressors faced by vocational students, including skill certification pressures, employment uncertainties, social adaptation during internships, and family expectations. These factors create an environment where students often feel ill-prepared for rapid transitions between academic and professional life. Subgroup analyses further confirmed that sophomore students showed higher stress (likely due to internship and employment preparation), and urban students exhibited more obsessive-compulsive tendencies and interpersonal sensitivity (possibly linked to higher competition). This highlights that a one-size-fits-all approach to mental health support is insufficient, necessitating subgroup-specific adaptations. The study also contextualized these findings within Henan Province's rapid socio-economic transformation, noting gaps in family mental health literacy and insufficient student services, which exacerbate these issues.

In direct response to these findings, the study developed a comprehensive five-dimensional mental health education model. This model strategically addresses the identified problems by





incorporating systematic psychological assessment, mental health literacy education, preventive intervention, counseling services, and an ecological support network. Each dimension is designed with developmental psychology principles, respect for individual differences, and sustainability in mind. The emphasis on prevention and literacy education is particularly pertinent, as data indicated students' moderate mental health awareness but a lack of deeper knowledge in stress management, help-seeking, and resilience building. Expert evaluations highly affirmed this systematic approach, with approval ratings exceeding 70% across Utility, Feasibility, Suitability, and Accuracy, validating the model's credibility and realism for vocational college settings. This confirms that the model directly addresses the study's first two objectives by providing a reliable mapping of student mental health and proposing an operational framework to address it. These findings align with research by Jiang (2020), Tan and Ma (2021), and Chen et al. (2022), which indicated that the mental health education model must rely on strategic and effective implementation, integrating systematic psychological assessment, mental health literacy education, preventive intervention, counseling services, and an ecological support network. Each dimension must be designed with developmental psychology principles, respect for individual differences, and sustainability in mind. The emphasis on prevention and literacy education is crucial for student mental health care.

## 2. Discussion of Developing the Five-Dimensional Mental Health Education Model

The design of the five-dimensional model directly responds to the mild-to-moderate nature of vocational students' mental health difficulties, emphasizing proactive strategies over purely clinical interventions.

*Psychological Assessment:* Addresses the prevalent lack of systematic and standardized screening mechanisms in vocational colleges. By linking screening with detailed reporting and student files, it ensures early detection and personalized intervention, especially crucial for issues like obsessive-compulsive symptoms and anxiety.

*Mental Health Literacy Education:* This dimension closes knowledge gaps among students who often have fragmented understandings of mental health. Modules on emotional awareness, communication, and stress management help build a healthier psychological campus culture, particularly benefiting students struggling with interpersonal sensitivity.

*Preventive Intervention:* Responds to the reality that many students seek help only when problems become severe. By offering stress-reduction activities and peer-support groups, it aims to intercept issues before escalation, aligning with culturally acceptable proactive care.

*Counseling Services:* Provides a vital bridge between prevention and treatment, offering professional, confidential, and culturally sensitive support for students requiring specialized help. Standardization and referral networks connecting internal and external resources are emphasized to ensure effective case management.

*Ecological Support Network:* Acknowledges the broader influences on mental health, such as family, peers, and community. By fostering partnerships with community mental health centers, NGOs, and employers, this dimension provides a comprehensive support system for students navigating educational and professional transitions, addressing systemic gaps.

These five dimensions are logically and empirically connected to the identified student mental health patterns, ensuring the model's theoretical coherence and practical relevance. Experts' consistently high ratings across Utility, Feasibility, Suitability, and Accuracy further validate its real-world adaptability. The model's comprehensive blend of proactive (literacy, prevention, ecological support) and reactive measures ensures flexibility in resource allocation, prioritizing prevention while maintaining pathways for specialized care. This dual strategy aligns with best practices in mental health education and resonates with China's national policies advocating for integrated, holistic approaches, thus fulfilling the second research objective.

This aligns with research by Gerber et al. (2015), Xiang (2017), Tan and Ma (2021), Julianto et al., (2023), Yuan et al. (2024), and Firdaus et al. (2025), who found that the development of a student mental health care model requires a theoretically coherent and practically relevant model that can be adapted to the context and relies on effective proactive and reactive measures. It also requires appropriate and sufficient resource allocation, prioritizing prevention while maintaining pathways for



specialized care. This dual strategy aligns with best practices in mental health education and is consistent with international policies supporting integrated and holistic approaches.

### 3. Discussion of Evaluating the Model through Experts' Feedback

The expert evaluation process revealed a strong alignment between the model's intentions and its practical recognition by professionals. The consistent ratings above 70% across all components confirm the model's capacity to fulfill Research Objective 3, validating its scientific, cultural, and operational relevance. The synergy between quantitative findings and high expert endorsement underscores that the model is a feasible and innovative solution for the moderate psychological challenges faced by vocational students.

This systematic evaluation also highlights that the model is an actionable plan, moving beyond mere theoretical recommendations. Its inclusion of ecological support partnerships, teacher empowerment, and proactive mental health literacy provides vocational colleges with a flexible and scalable framework, offering a preventative and culturally relevant alternative to traditional reactive services. Experts' feedback, both interview and focus group discussion, also illuminated future research needs, emphasizing the importance of studies on long-term effectiveness, cost-benefit analysis, scalability in resource-limited contexts, and digital integration (e.g., mobile apps for literacy education or early-warning signals) to enhance sustainability and reach. These suggestions directly respond to the final research objective, providing a rich agenda for future validation and adaptation.

In summary, the evaluation unequivocally supports the five-dimensional model's scientific and operational viability. The in-depth expert feedback reflects a shared understanding that vocational college students require systematic, culturally grounded, and practically feasible mental health systems. These findings confirm that the study has produced a theoretically robust framework with high acceptance potential, laying a solid groundwork for institutional adoption, policy support, and further scientific validation.

This aligns with research by Liu et al. (2020), Tan and Ma (2021), Chen et al. (2022), Julianto et al. (2023), Yuan et al. (2024), Zhong and Policarpio (2024), and Firdaus et al. (2025), who found that the implementation of an operational model for student mental health care in any educational organization requires a clear, affirmative evaluation of the scientific and operational viability of the chosen model. Students need mental health systems that are systematic, culturally grounded, and practically feasible, without negatively impacting the institution's teaching and learning activities.

### Knowledge Contribution

The present study significantly contributes to the existing body of knowledge by offering a comprehensive and empirically validated framework for mental health support in vocational education, particularly within the unique context of Henan Province of China.

Firstly, it provides a crucial and detailed mapping of the mental health status of vocational college students. Moving beyond a focus on severe mental illness, the research systematically identified that these students consistently experience moderate yet pervasive psychological challenges, including obsessive-compulsive symptoms, sleep and diet disturbances, interpersonal sensitivity, anxiety, and depression. This nuanced understanding highlights the need for proactive and preventive interventions rather than solely reactive crisis management. Furthermore, the study meticulously uncovered subgroup-specific differences—such as higher stress among sophomores due to employment pressures and distinct tendencies in urban versus rural students—underscoring that mental health frameworks must be adaptable and not follow a one-size-fits-all approach. By illuminating these specific challenges and their broader socio-economic context within Henan, the study lays a critical empirical foundation for targeted interventions.

Secondly, the core knowledge contribution lies in the development and detailed articulation of a novel five-dimensional mental health education model. This model stands out for its systematic, multi-faceted design that strategically addresses the identified student needs. It integrates systematic psychological assessment, comprehensive mental health literacy education, robust preventive intervention, accessible counseling services, and an ecological support network. Each dimension is meticulously crafted based on developmental psychology principles, respect for individual differences,





and long-term sustainability. The model's emphasis on proactive measures, particularly mental health literacy and prevention, fills a crucial gap where students often lack the deeper knowledge and coping mechanisms to manage stress and seek timely help. An innovative aspect is the inclusion of philosophical intervention, which extends beyond conventional Western-centric approaches by integrating philosophical thinking to foster resilience and address cognitive patterns, resonating deeply with Chinese cultural traditions.

Finally, the study's rigorous expert evaluation process provides robust validation for the model's scientific and operational viability, marking another significant contribution. The consistently high approval ratings (exceeding 70% across utility, feasibility, suitability, and accuracy) from diverse mental health professionals and vocational college leaders confirm the model's credibility, practical realism, and potential for effective implementation in real-world educational settings. This expert consensus not only strengthens the model's theoretical coherence but also underscores its alignment with national policies advocating for integrated and holistic approaches to student well-being. By presenting an actionable, culturally grounded, and systematically evaluated framework, this research offers a substantial contribution that can inform institutional adoption, guide policy support, and serve as a solid foundation for future empirical trials and advancements in vocational student mental health care.

A new idea, building on the successful development of the mental health education model, is to establish a pilot program. This program would integrate the validated model into vocational colleges across China, focusing on developing a mobile application or digital platform. This platform could provide students with accessible resources, self-assessment tools, and a connection to a network of trained mental health professionals. The pilot would measure the model's effectiveness in a real-world setting, refine its implementation, and explore the scalability of using technology to provide widespread, culturally relevant mental health support to a large student population. Additionally, this information is beneficial to readers as it provides a comprehensive overview of a new, empirically supported framework for improving student mental well-being in a specific educational context. It highlights the importance of culturally-grounded and practical approaches to mental health care, which can inform similar initiatives and policies in vocational education globally.

## Recommendations

The researchers put forward two kinds of feedback as follows:

### 1. Recommendations for Applying Research Findings

Based on the comprehensive findings and the validated five-dimensional mental health model, the following recommendations are crucial for enhancing student well-being in vocational education institutions:

#### 1) Implement a Holistic, Integrated Mental Health System

Vocational colleges should prioritize the full adoption of the proposed five-dimensional mental health model. This involves establishing a systematic psychological assessment framework to proactively screen and track student mental health, moving beyond reactive responses. Concurrently, robust mental health literacy education programs must be integrated into the curriculum, equipping students with essential stress management, emotional regulation, and help-seeking skills to address their identified knowledge gaps. Furthermore, preventive intervention strategies, such as workshops and peer support groups, should be widely implemented to address moderate psychological challenges before they escalate into crises. Accessible and confidential counseling services must be readily available as a bridge for students requiring specialized support. Finally, fostering an ecological support network by actively engaging families, community mental health organizations, and even future employers will create a comprehensive external support system, recognizing that student well-being extends beyond the campus. This integrated approach, validated by experts, ensures a proactive, comprehensive, and sustainable mental health framework.

#### 2) Differentiate Interventions Based on Student Subgroup Needs

Recognizing the diverse mental health profiles identified in the study, vocational colleges must tailor their interventions. For sophomore students, who experience heightened stress due to internship





placements and career preparation, specialized mental health support and career guidance programs are essential. Interventions should also be differentiated for urban versus rural students, acknowledging urban students' higher interpersonal sensitivity and competition-related stress, while providing rural students with enhanced support to mitigate economic pressures, academic adaptation difficulties, and social isolation. Furthermore, mental health education should be customized to address the unique stressors associated with different academic majors, such as academic rigor in engineering or employment anxieties in management. The innovative philosophical intervention should be carefully adapted, ensuring its content is culturally resonant and delivered by trained facilitators in an accessible manner, allowing students to leverage philosophical thinking for long-term resilience and cognitive adjustment.

### **3) Strengthen Institutional Capacity and Foster Collaborative Ecosystems**

For the model's successful and sustainable implementation, vocational colleges must invest in strengthening their institutional capacity and fostering broader collaborative ecosystems. This includes significant investment in teacher empowerment through continuous, phased mental health intervention training, ensuring educators are equipped to identify and support students effectively without excessive workload. Increased resource allocation from both government and institutional levels is vital to fund dedicated mental health centers, professional counselors, and advanced digital platforms for assessments and literacy delivery. Crucially, formal home-school-community linkages must be established and maintained, involving parents, local mental health institutions, and NGOs, to create a robust, shared support network. Finally, strict adherence to data security and privacy protocols is paramount to build student trust, encourage help-seeking, and prevent stigmatization, ensuring that mental health support is perceived as a positive and confidential resource.

## **2. Recommendations for Future Research**

Based on this study's findings and the validated mental health model, future research should explore the following:

### **1) Longitudinal Effectiveness and Impact**

Future studies should conduct longitudinal research to track the model's long-term impact on student mental health, academic performance, and vocational adaptability in real-world settings. This will provide crucial empirical evidence on sustained efficacy and inform continuous model refinement.

### **2) Cost-Benefit Analysis and Scalability**

A comprehensive cost-benefit analysis is needed to quantify resources versus benefits, supporting broader adoption. Research should also investigate the model's scalability and adaptability in diverse vocational college contexts, including rural or resource-limited areas, to ensure feasible and effective implementation across varied institutional capacities.

### **3) Deep Dive into Specific Interventions and Digital Integration**

Further research should explore the specific mechanisms and effectiveness of philosophical interventions on student resilience and cognitive patterns. Additionally, studies are needed to develop and evaluate the efficacy of digital tools (e.g., mobile apps, AI technologies) for delivering mental health literacy, early warning signals, and counseling, enhancing the model's reach and sustainability.

### **4) Teacher Well-being and Professional Development**

Given their critical role, future research should investigate the mental health and professional development needs of vocational college teachers. This includes assessing their stressors and evaluating training effectiveness, ensuring educators are well-supported to effectively implement mental health initiatives and positively impact student outcomes.





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