

A MENTAL HEALTH SERVICE MODEL OF CHINESE HIGHER VOCATIONAL COLLEGE STUDENTS IN HENAN PROVINCE*

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Abstract

This study has three objectives: 1) To study the level of mental health services provided in higher vocational colleges in Henan Province; 2) To study confirmatory factor analysis of mental health services in higher vocational colleges in Henan Province; 3) To propose the mental health service model of Chinese higher vocational colleges students in Henan Province. This study employs a mixed-methods research approach, comprising both quantitative and qualitative methods. Stratified random sampling was used to collect 755 valid responses from 92 higher vocational colleges in Henan Province. A self-designed measurement instrument containing eight latent variables and 100 items was developed, and its content validity was evaluated using an Index of Item-Objective Congruence (IOC) assessed by five experts. Quantitative data were analyzed using confirmatory factor analysis (CFA). The qualitative component involved semi-structured interviews with nine mental health service experts from the six participating colleges.

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The results showed that the quantitative analysis demonstrated a good fit of the proposed model, while the qualitative findings further validated the empirical support for the model. The findings confirm a mental health service model comprising eight factors: service accessibility (SA), counselor competence (CC), service use intention (SUI), online mental health services (OMHS), crisis preparedness (CRP), perceived social support (PSS), teacher support (TS), and trust in confidentiality (TC). Furthermore, this study proposes recommendations for improving the provision of student mental health services, ranging from policy development to service delivery.

Keywords: Student Mental Health Services, Higher Vocational Colleges, Confirmatory Factor Analysis

Introduction

Student mental health has become a critical concern in higher education worldwide. Compared with students in general universities, those enrolled in higher vocational colleges often face additional challenges related to academic adjustment, employment uncertainty, and relatively limited social support, placing them at higher mental health risk. Despite the increasing prevalence of mental health problems, students' actual utilization of mental health services remains consistently low (Wang et al., 2023; Li et al., 2021). This mismatch between high demand and low utilization highlights the need to examine not only the availability of services but also the quality and functioning of mental health service systems in higher vocational colleges.

Existing research on student mental health services has largely focused on isolated factors, such as counseling provision, help-seeking attitudes, or stigma, with limited attention to higher vocational education contexts (Li et al., 2021). Methodologically, many studies rely on exploratory or descriptive approaches, providing insufficient validation of the structural composition and

measurement properties of mental health service constructs (Liu et al., 2024). This fragmentation restricts a comprehensive understanding of how mental health services operate as interconnected systems.

Addressing these gaps, the present study focuses on students in higher vocational colleges in Henan Province and adopts a comprehensive perspective to examine the overall level, structural composition, and underlying mechanisms of student mental health services. By integrating institutional service provision, environmental support and trust mechanisms, and students' service utilization intentions into a unified framework, and by combining survey-based model validation with expert interviews, this study aims to provide a systematic and practice-oriented understanding of mental health service operation in higher vocational education.

Objective

1. To study the level of mental health services provided in higher vocational colleges in Henan Province.
2. To study confirmatory factor analysis of mental health services in higher vocational colleges in Henan Province.
3. To propose the mental health service model of Chinese higher vocational colleges students in Henan Province.

Literature Review

1. Concepts and theories related to Mental Health

The concept of mental health has evolved from a disease-centered biomedical perspective toward a multidimensional and developmental framework. Early approaches largely defined mental health as the absence of mental illness or functional impairment, whereas the World Health Organization's holistic conception of health incorporated psychological and

social well-being alongside physical health, establishing the foundation for contemporary multidimensional understandings. Building on this shift, mental health research has progressively moved beyond a pathology-oriented paradigm toward an emphasis on adaptive functioning and developmental potential. Influenced by positive psychology, mental health is increasingly conceptualized as a dynamic process involving the cultivation of psychological resources such as well-being, resilience, optimism, and effective social functioning (Seligman & Csikszentmihalyi, 2000). Accordingly, individuals are viewed as active agents of development rather than passive recipients of treatment, and mental health services are reframed as systems that promote positive functioning and long-term well-being rather than solely addressing deficits.

Within educational contexts, this developmental perspective provides a critical theoretical foundation for school-based mental health services (SBMHS) (Bronfenbrenner, 1979). SBMHS emphasize the integration of mental health support into students' everyday learning environments, enhancing accessibility and contextual relevance while facilitating early identification, intervention, and sustained support. Beyond symptom alleviation, this model highlights the role of institutional structures, professional services, and coordinated support networks in fostering students' positive psychological functioning. Consequently, mental health is understood as the outcome of dynamic interactions between individual psychological resources and the surrounding service environment, positioning mental health services as a key mechanism linking institutional support with student development.

2. Concepts and theories related to the Model of Service Quality (SERVQUAL)

The concept of service quality was first defined by Parasuraman et al. (1988) in their SERVQUAL model. In the fields of management and educational service research, "service quality" is regarded as the core variable for measuring the perceived gap between service providers and service recipients

(Parasuraman,1988). This model is characterized by its emphasis on service recipients' multidimensional perceptions of “accessibility”, “professional competence”, “interaction experience”, and “cultural adaptability”. These dimensions provide both theoretical underpinnings and measurement criteria for constructing a mental health service quality model.

Mental health service models are increasingly conceptualized as multidimensional systems integrating structural conditions, service processes, and user perceptions. The structure–process–outcome framework proposed by Seligman (2000) provides a foundational perspective, emphasizing that organizational resources, professional service delivery, and perceived outcomes jointly determine service quality. In educational contexts, this framework supports the inclusion of accessibility, counselor competence, and institutional support as core components of mental health services. From a service evaluation standpoint, the SERVQUAL model further informs the measurement of perceived service quality by highlighting users’ subjective evaluations of responsiveness, reliability, and trust, which have been widely adapted to health and mental health service research (Parasuraman et al., 1988). Additionally, Ecological Systems Theory underscores the influence of multiple contextual levels, including family, school, and community, on students’ mental health and help-seeking behaviors (Bronfenbrenner, 1979), while the Job Demands–Resources (JD-R) model conceptualizes mental health services as critical institutional resources that buffer stress and promote well-being. Together, these theories provide a robust theoretical foundation for constructing latent-variable-based mental health service models in higher vocational education settings, incorporating both traditional and digital service components (Ebert et al., 2018).

3. Related Research in Domestic and International Contexts

International and domestic research has consistently highlighted the growing mental health challenges faced by college students, particularly within rapidly transforming educational systems. At the system level, China's mental health service framework has undergone significant reform, shifting from hospital-centered treatment toward community- and institution-based service delivery, while still facing challenges related to accessibility, workforce capacity, and service integration (Liu et al., 2011). Empirical studies among Chinese college students have documented high prevalence rates of anxiety, depression, sleep disturbances, and stress-related symptoms, especially under public health crises and academic pressure contexts (Gao et al., 2024). These findings underscore the necessity of embedding mental health services within educational institutions to enhance early identification and timely intervention.

At the service utilization and psychosocial levels, prior research has emphasized the roles of help-seeking attitudes, stigma, trust, and social support in shaping students' engagement with mental health services. (Jiang et al., 2021) Studies show that perceived stigma and limited trust in counseling confidentiality remain significant barriers to professional help-seeking among Chinese university students (Ning et al., 2022; Wong et al., 2022; Busiol, 2016). Conversely, supportive relationships—including teacher support, peer support, and family involvement—are consistently associated with better psychological well-being and stronger help-seeking intentions (Wang, 2023; Li et al., 2021; Liu et al., 2024). With the acceleration of digital transformation in higher and vocational education, recent studies have further highlighted the growing importance of online mental health services and digital institutional capacity in expanding service accessibility and engagement (Ma et al., 2025; Alenezi, 2023; Liu, 2024). However, existing research is often fragmented, focusing on isolated service components or individual factors, indicating a clear need for an integrated, multidimensional model to systematically examine mental health

service quality and utilization mechanisms among vocational college students.

Methodology

This study employed a mixed-methods design integrating quantitative and qualitative approaches to examine mental health services in higher vocational colleges. Quantitative data were collected through an online structured questionnaire administered between October and December 2025, and qualitative data were obtained through semi-structured expert interviews to contextualize the quantitative findings.

For the quantitative component, a stratified random sampling strategy was used. Ninety-two higher vocational colleges across Henan Province were included to ensure institutional diversity. Within each institution, full-time enrolled students were randomly invited to participate via official online platforms. Eligibility required current enrollment and informed consent. Questionnaires with substantial missing data or patterned responses were excluded. Of the 890 questionnaires distributed, 755 valid responses were retained (effective response rate: 84.83%). The sample comprised 56% female and 44% male students, with 78.7% aged 18–19, representing diverse grades and academic disciplines.

The measurement instrument was self-developed based on a review of relevant literature and mental health service frameworks. An initial item pool was constructed to reflect eight latent constructs: Service Accessibility (SA), Counselor Competence (CC), Online Mental Health Services (OMHS), Crisis Preparedness (CRP), Perceived Social Support (PSS), Teacher Support (TS), Trust in Confidentiality (TC), and Service Utilization Intention (SUI). Content validity was assessed using the Index of Item–Objective Congruence (IOC) by five experts in mental health services and educational administration, and items failing to meet validity criteria were revised or removed.

Quantitative data analysis included descriptive statistics and reliability testing, followed by confirmatory factor analysis (CFA) to validate the measurement model. Model fit was evaluated using the chi-square to degrees of freedom ratio, Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA).

The qualitative component involved semi-structured interviews with nine mental health service experts selected through purposive sampling. Eligibility criteria included a minimum of five years of professional experience and direct involvement in counseling, teaching, or administrative roles in higher vocational colleges. Interview data were transcribed verbatim and analyzed using thematic analysis to identify recurring themes.

Ethical standards were observed throughout the study. Participation was voluntary, informed consent was obtained, data were collected anonymously, and the study protocol was approved by the academic ethics committee of the authors' affiliated institution.

Results

1. Results of the Level of Mental Health Service in Higher Vocational College Students in Henan Province

Descriptive statistics for the eight latent variables are summarized in Table 1. The mean scores ranged from 3.922 to 4.063 on a five-point scale, reflecting an overall positive perception of the mental health services among the student sample. Counselor Competence (CC) was rated the highest ($M = 4.063$, $SD = 0.581$), closely followed by Teacher Support (TS) ($M = 4.056$, $SD = 0.572$) and Trust in Confidentiality (TC) ($M = 4.043$, $SD = 0.582$). In contrast, Service Utilization Intention (SUI) received the lowest mean score ($M = 3.922$, $SD = 0.540$), although it remained within the positive range. All variables demonstrated consistently low standard deviations (0.540 to 0.581), indicating

limited dispersion in responses. The assumptions of normality were supported, with skewness and kurtosis values ranging from -0.596 to -0.281 and 0.528 to 1.656, respectively, all within acceptable limits for proceeding with confirmatory factor analysis.

Table 1 Descriptive statistics of Variables

Variable	Mean	S.D.	Skewness	Kurtosis	Level
SA	3.936	0.575	-0.498	1.588	High
CC	4.063	0.581	-0.596	1.53	High
SUI	3.922	0.540	-0.402	1.656	High
OMHS	3.957	0.564	-0.303	0.692	High
CRP	4.022	0.560	-0.281	0.559	High
PSS	4.004	0.584	-0.473	0.539	High
TS	4.056	0.572	-0.373	0.528	High
TC	4.043	0.582	-0.430	0.540	High

2. Results of Confirmatory Factor Analysis of Mental Health Services in Higher Vocational Colleges in Henan Province

2.1 Results of construct validity testing of SA using CFA

The second-order CFA results of SA describe a good model fit, as $CMIN=233.747$; $DF=50$; $CMIN/DF=4.675<5$; $GFI=0.950>0.8$; $AGFI=0.922>0.8$; $TLI=0.946>0.9$; $CFI=0.959>0.9$; $RMR=0.032<0.08$; $RMSEA=0.070<0.08$. The results indicate that all statistical indices are within acceptable thresholds, suggesting good model fit and meeting the requirements of structural validity.

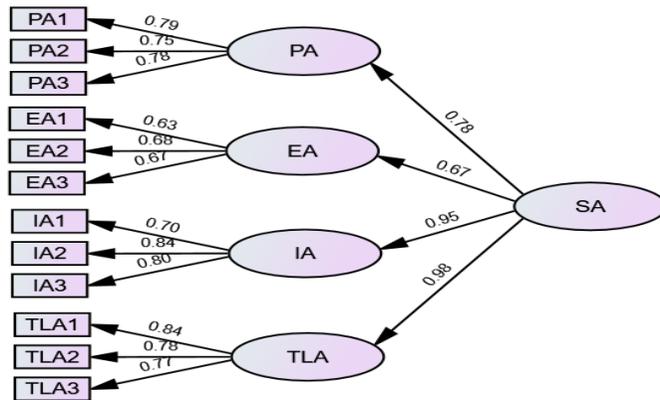


Figure 1 Results of second-order confirmatory factor analysis for service accessibility (SA)

2.2 Results of structural validity testing for CC using CFA

The second-order CFA results for CC describe a good model fit, as $CMIN=194.042$; $DF=50$; $CMIN/DF=3.881 < 5$; $GFI=0.958 > 0.8$; $AGFI=0.934 > 0.8$; $TLI=0.963 > 0.9$; $CFI=0.972 > 0.9$; $RMR=0.021 < 0.08$; $RMSEA=0.062 < 0.08$. The results indicate that all statistical indices are within acceptable thresholds, suggesting good model fit and meeting the requirements of structural validity.

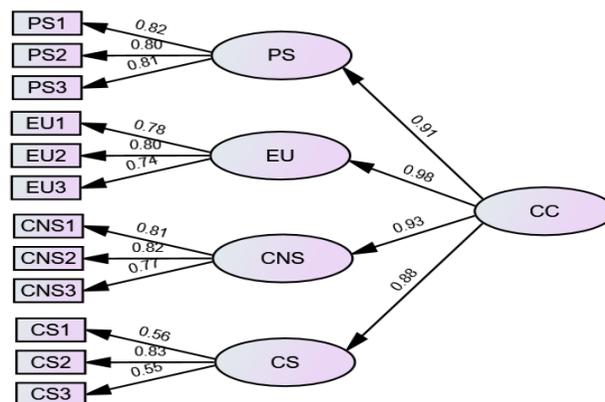


Figure 2 Results of second-order confirmatory factor analysis for Counselor Competence (CC)

2.3 Results of structural validity testing for SUI using CFA

The second-order CFA results for SUI describe a good model fit, as $CMIN=94.940$; $DF=50$; $CMIN/DF=1.959<5$; $GFI=0.979>0.8$; $AGFI=0.967>0.8$; $TLI=0.983>0.9$; $CFI=0.987>0.9$; $RMR=0.016<0.08$; $RMSEA=0.036<0.08$. The results indicate that all statistical indices fall within acceptable thresholds, demonstrating good model fit and meeting the requirements of structural validity.

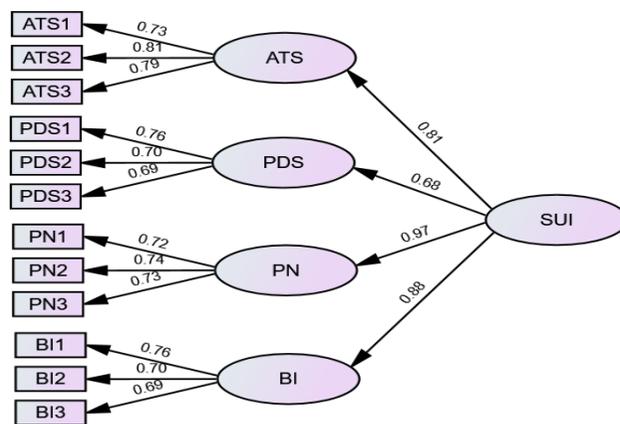


Figure 3 Results of Second-order Confirmatory Factor Analysis for Service Utilization Intention (SUI)

2.4 Results of Structural Validity Testing for OMHS Using CFA

The second-order CFA results for OMHS describe a good model fit, as $CMIN=127.506$; $DF=50$; $CMIN/DF=2.550<5$; $GFI=0.973>0.8$; $AGFI=0.958>0.8$; $TLI=0.977>0.9$; $CFI=0.983>0.9$; $RMR=0.014<0.08$; $RMSEA=0.045<0.08$. The results indicate that all statistical indices fall within acceptable thresholds, demonstrating good model fit and meeting the requirements of structural validity.

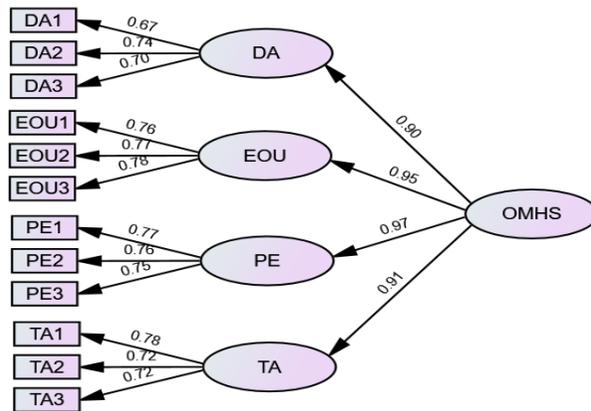


Figure 4 Results of second-order confirmatory factor analysis for Online Mental Health Services (OMHS)

2.5 Results of structural validity testing for CRP using CFA

The second-order CFA results of CRP describe a good model fit: CMIN=168.974; DF=50; CMIN/DF=3.379<5; GFI=0.965>0.8; AGFI=0.945>0.8; TLI=0.968>0.9; CFI=0.976>0.9; RMR=0.014<0.08; RMSEA=0.056<0.08. The results indicate that all statistical indices are within acceptable thresholds, suggesting good model fit and meeting the requirements of structural validity.

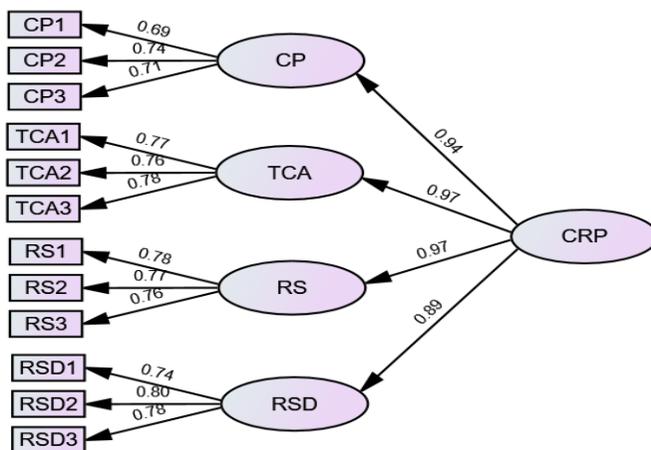


Figure 5 Results of second-order confirmatory factor analysis for Crisis Preparedness (CRP)

2.6 Results of structural validity testing for PSS using CFA

The second-order CFA results of PSS describe a good model fit: $CMIN=189.595$; $DF=61$; $CMIN/DF=3.256 < 5$; $GFI=0.960 > 0.8$; $AGFI=0.941 > 0.8$; $TLI=0.967 > 0.9$; $CFI=0.975 > 0.9$; $RMR=0.021 < 0.08$; $RMSEA=0.055 < 0.08$. The results indicate that all statistical indices are within acceptable thresholds, suggesting good model fit and meeting the requirements of structural validity.

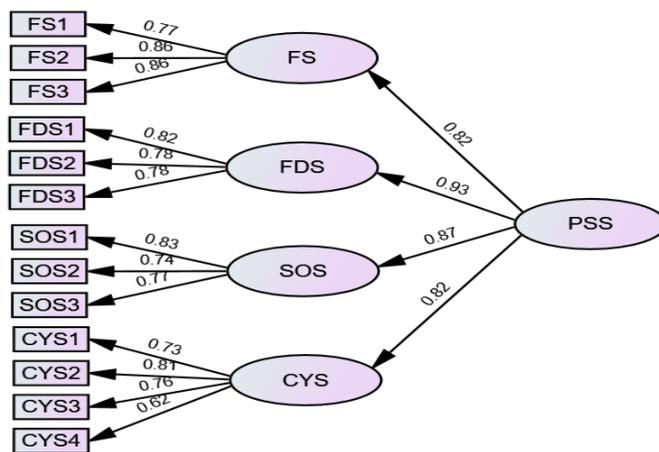


Figure 6 Results of second-order confirmatory factor analysis for Perceived Social Support (PSS)

2.7 Results of Structural Validity Testing for TS Using CFA

The second-order CFA results of TS describe a good model fit: $CMIN=180.767$; $DF=61$; $CMIN/DF=2.963 < 5$; $GFI=0.964 > 0.8$; $AGFI=0.946 > 0.8$; $TLI=0.975 > 0.9$; $CFI=0.980 > 0.9$; $RMR=0.013 < 0.08$; $RMSEA=0.051 < 0.08$. The results indicate that all statistical indices are within acceptable thresholds, suggesting good model fit and meeting the requirements of structural validity.

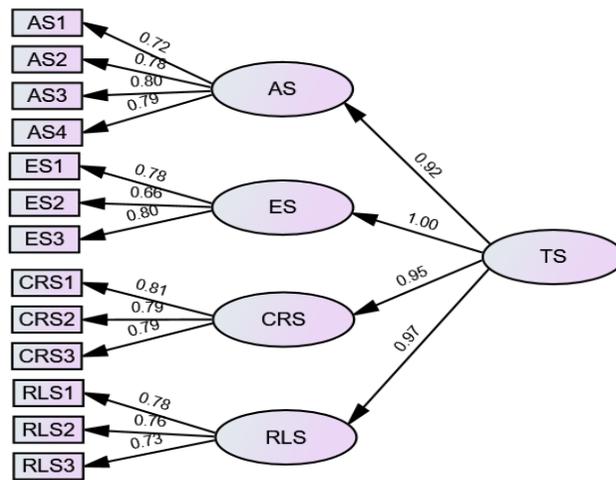


Figure 7 Results of second-order confirmatory factor analysis for Teacher Support (TS)

2.8 Results of structural validity testing for TC using CFA

The second-order CFA results from TC describe a good model fit: $CMIN=222.083$; $DF=73$; $CMIN/DF=3.042 < 5$; $GFI=0.959 > 0.8$; $AGFI=0.941 > 0.8$; $TLI=0.970 > 0.9$; $CFI=0.976 > 0.9$; $RMR=0.017 < 0.08$; $RMSEA=0.052 < 0.08$. The results indicate that all statistical indices are within acceptable thresholds, suggesting good model fit and meeting the requirements of structural validity.

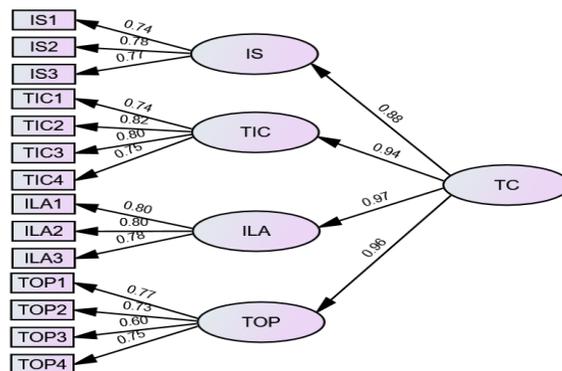


Figure 8 Results of second-order confirmatory factor analysis for Trust in Confidentiality (TC)

2.9 Second-order CFA results

The second-order CFA results depict a good model fit. This is because $CMIN=1704.204$; $DF=456$; $CMIN/DF=3.737<5$; $GFI=0.877>0.8$; $AGFI=0.858>0.8$; $TLI=0.934>0.9$; $CFI=0.939>0.9$; $RMR=0.020<0.08$; $RMSEA=0.060<0.08$ multidimensional nature of student mental health services in higher vocational colleges.

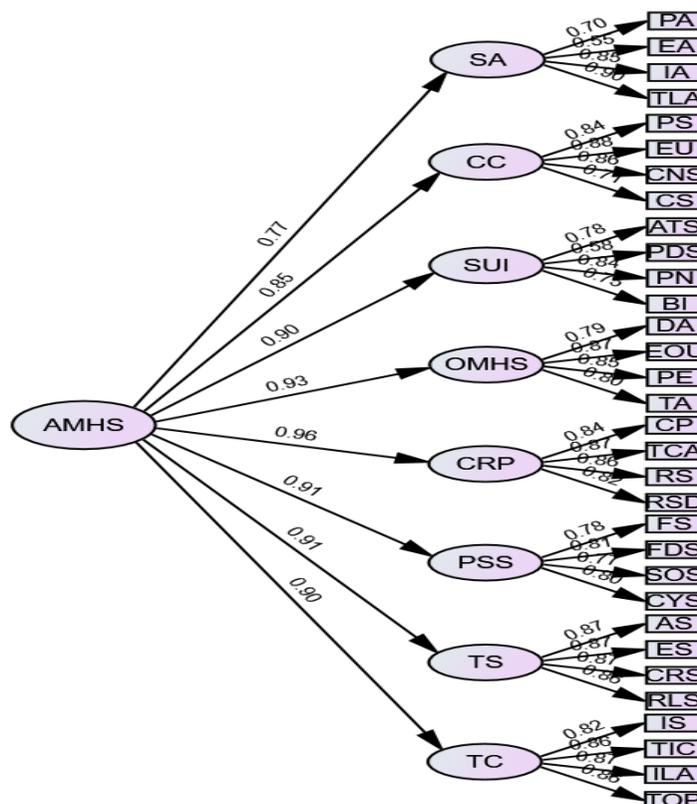


Figure 9 Second-order CFA results

3. Results of Propose the Mental Health Service Model of Chinese Higher Vocational Colleges Students in Henan Province.

To complement the confirmatory factor analysis results, semi-structured interviews were conducted with nine key informants, including counselors, faculty members, and administrative staff involved in mental health services in

higher vocational colleges. The interviews focused on institutional arrangements, service delivery processes, and factors influencing students' engagement with mental health services. The qualitative findings were consistent with the eight-factor structure identified in the quantitative analysis.

At the institutional level, informants emphasized the importance of Service Accessibility (SA), Counselor Competence (CC), Online Mental Health Services (OMHS), and Crisis Preparedness (CRP) in supporting the routine operation of campus mental health services. Accessibility was primarily reflected in consultation scheduling, appointment procedures, and information availability, while professional competence was described in terms of counselors' practical experience and understanding of vocational students' academic and career contexts. Online services were frequently mentioned as a flexible entry point, and crisis preparedness was regarded as essential for handling high-risk situations. At the interpersonal and psychosocial level, interviewees highlighted the roles of Perceived Social Support (PSS), Teacher Support (TS), and Trust in Confidentiality (TC) in shaping students' willingness to engage with services. Teachers were described as important intermediaries in identifying students' psychological distress and facilitating referrals, while perceived confidentiality was repeatedly identified as a prerequisite for student participation.

Discussion

1. Discussion of the Level of Mental Health Services in Higher Vocational Colleges

The findings indicate that students in higher vocational colleges generally perceive campus mental health services to be at a relatively high level, as reflected across eight interrelated factors: Service Accessibility (SA), Counselor Competence (CC), Service Utilization Intention (SUI), Online Mental Health Services (OMHS), Crisis Preparedness (CRP), Perceived Social Support

(PSS), Teacher Support (TS), and Trust in Confidentiality (TC). Rather than reflecting isolated service improvements, this result points to a broader process of institutionalization of student mental health services within China's higher education system (Liu et al., 2011).

This relatively positive evaluation can be interpreted in light of the specific psychosocial context of higher vocational college students. Previous research has shown that vocational students experience elevated risks of anxiety, depression, and psychological distress, particularly in relation to academic adaptation, employment uncertainty, and social stressors (Gao et al., 2024; Liu et al., 2024). Such vulnerabilities may prompt vocational institutions to place greater emphasis on visible and accessible mental health services as part of routine student support and management. As a result, students may be more aware of and engaged with available services, contributing to higher perceived service levels.

From a service delivery perspective, the findings are consistent with evidence suggesting that students' evaluations of mental health services are strongly influenced by structural factors, including service availability, accessibility, and institutional responsiveness (Ning et al., 2022; Busiol, 2016). In vocational college settings, mental health services are often closely integrated into administrative and educational systems, which may reduce help-seeking barriers and enhance students' trust in institutional support. This structural embeddedness may be particularly important in contexts where mental health stigma remains a concern, as it normalizes help-seeking behaviors within everyday campus life (Wong et al., 2022).

The results also align with ecological perspectives on student development, which emphasize the role of institutional environments in shaping individual well-being (Bronfenbrenner, 1979). From this perspective, the relatively high perceived level of mental health services reflects not only the

presence of individual interventions but also the supportive organizational contexts in which students are embedded. Furthermore, the growing integration of digital platforms in vocational education may enhance service reach and continuity, reinforcing students' perceptions of service adequacy and reliability (Ma et al., 2025; Alenezi, 2023).

2. Discussion of the confirmatory factor analysis on mental health services

The confirmatory factor analysis results for mental health services provide strong empirical support for the second-order mental health service model proposed in higher vocational colleges. The results indicate that students' perceptions of mental health services are best represented by a multidimensional latent variable structure rather than a single holistic construct. Among the eight latent variables, the observed indicators exhibited significant factor loadings in their corresponding constructs, demonstrating that the measurement items effectively capture different functional domains of campus mental health services. The satisfactory factor loadings across institutional service constructs—such as Service Accessibility (SA), Counselor Competence (CC), Crisis Preparedness (CRP), and Online Mental Health Services (OMHS)—indicate that these dimensions are perceived by students as stable and recognizable components of the institutional service environment. This finding aligns with prior research emphasizing the importance of clearly structured and accessible service systems in shaping students' evaluations of mental health support (Liu et al., 2011). In vocational college contexts, where students often face compounded academic and employment-related stressors, the clarity and reliability of institutional service arrangements may be particularly salient.

In addition, the composite reliability results provide further evidence of internal consistency within each latent construct, indicating that the observed variables within each domain function cohesively as indicators of the same underlying concept. This is especially noteworthy for psychosocial constructs

such as Perceived Social Support (PSS), Teacher Support (TS), and Trust in Confidentiality (TC), which are inherently relational and context-dependent. The reliable measurement of these constructs suggests that interpersonal and trust-related aspects of mental health services constitute integral and systematically perceived components of the campus support system, consistent with findings from previous studies on help-seeking and counseling engagement among Chinese college students (Ning et al., 2022).

From a theoretical perspective, the validated measurement model supports an ecological understanding of campus mental health services, in which multiple institutional and interpersonal subsystems jointly influence students' service perceptions and utilization intentions (Bronfenbrenner, 1979). Rather than operating independently, institutional service provision and relational support mechanisms appear to function as interconnected latent constructs within a coherent service system.

3. Discussion of Expert In-Depth Interview

The qualitative findings derived from interviews with nine mental health service experts provide important contextual validation for the proposed mental health service model. Overall, the expert perspectives closely aligned with the eight latent constructs identified through confirmatory factor analysis, offering practice-based confirmation of the model's conceptual relevance and operational feasibility within higher vocational colleges.

At the institutional level, experts consistently emphasized the foundational roles of Service Accessibility (SA), Counselor Competence (CC), Online Mental Health Services (OMHS), and Crisis Preparedness (CRP). Accessibility was primarily discussed in terms of appointment procedures, information transparency, and alignment with students' academic schedules, highlighting the practical importance of reducing procedural barriers to service use. Counselor competence was frequently associated with counselors'

familiarity with vocational students' academic and career contexts, echoing previous findings that professional understanding and contextual sensitivity are critical to effective mental health service delivery (Liu et al., 2011). The prominence of crisis preparedness in expert narratives further underscores the necessity of institutional readiness in vocational settings, where students may experience acute psychological risks linked to academic pressure and employment uncertainty.

At the interpersonal and psychosocial level, experts highlighted Perceived Social Support (PSS), Teacher Support (TS), and Trust in Confidentiality (TC) as decisive factors influencing students' willingness to engage with mental health services. Teachers were repeatedly described as key intermediaries who observe early signs of psychological distress and facilitate referrals to professional services. This finding is consistent with prior research emphasizing the role of teacher support in promoting student well-being and help-seeking behaviors (Wang, 2023). In addition, trust in confidentiality was identified as a prerequisite for service engagement, reflecting ongoing concerns about stigma and privacy among Chinese college students (Ning et al., 2022).

Importantly, experts viewed Service Utilization Intention (SUI) not as an isolated outcome but as an emergent result of the interaction between institutional safeguards and relational trust. This perspective reinforces the integrated nature of the proposed model, suggesting that effective mental health services require coordinated institutional structures alongside supportive interpersonal environments. Taken together, the qualitative findings strengthen the explanatory power of the model and demonstrate its consistency with real-world service practices in higher vocational colleges.

Conclusion

This study investigated the structure and determinants of mental health service quality and utilization among students in higher vocational colleges, using Henan Province as the empirical context. By applying a mixed-methods design that combined questionnaire data from 755 students with semi-structured interviews with mental health service experts, the study developed and validated an integrated mental health service model grounded in both quantitative evidence and practical insights.

The confirmatory factor analysis results support the proposed multidimensional model, demonstrating that mental health service quality in higher vocational colleges is jointly shaped by institutional service provision and interpersonal–psychological factors. Institutional dimensions—including service accessibility, counselor competence, online mental health services, and crisis preparedness—constitute the foundational conditions for service delivery, while perceived social support, teacher support, and trust in confidentiality play a critical role in shaping students’ service utilization intention. The strong loading of crisis preparedness and online mental health services further underscores the importance of institutional readiness and digital integration in contemporary campus mental health systems.

In addition, the findings highlight that high perceived service availability does not automatically translate into optimal utilization. Procedural accessibility and trust-related mechanisms remain key factors influencing students’ willingness to engage with services. Teachers emerge as important intermediaries linking students to professional resources, reinforcing the value of integrating mental health support functions into routine educational practices.

Overall, this study contributes empirical evidence to the evaluation and optimization of mental health service systems in higher vocational education. The validated model provides a structured framework for understanding service

quality mechanisms and offers practical reference points for institutional improvement and policy development in similar educational contexts.

Recommendations

Institutional integration is essential for ensuring service stability and effectiveness. Mental health services should be formally embedded within institutional governance frameworks, supported by clear responsibilities, standardized procedures, and coordinated resource allocation. Aligning service provision with students' academic schedules and strengthening crisis preparedness through systematic training can further enhance service responsiveness.

Service quality depends on professional competence and coordinated support networks. Improving counselors' professional and empathic capacities remains a priority, while multi-level support systems involving teachers, peers, and families should be strengthened. Teachers can play a key intermediary role in early identification and referral due to their close and continuous contact with students.

Student trust and engagement are critical for service utilization. Transparency regarding confidentiality and service procedures should be reinforced to build confidence and reduce stigma. Framing mental health services as a routine developmental resource, alongside the expansion of online mental health services, can facilitate initial engagement and sustained participation.

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