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ORIGINAL RESEARCH

Mental Health Literacy and Professional Psychological Help-Seeking Attitudes Among Primary Healthcare Workers: The Mediating Role of Social Support and Mental Illness Stigma

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Background: Research highlights poor mental health among healthcare workers, but limited attention has been given to the mental health literacy and professional psychological help-seeking attitudes of primary healthcare workers.This study investigates the relationship between primary healthcare workers' mental health literacy and their attitudes toward professional psychological help-seeking. It also explores the chain mediating roles of social support and mental illness stigma in this relationship.

Methods: We conducted the study among primary healthcare workers in Shapingba District, Chongqing, China. The study utilized demographic questionnaires, the Multiple Mental Health Literacy Scale, Social Support Rating Scale, Perceived Devaluation-Discrimination Scale, and Attitudes Toward Seeking Professional Psychological Help Scale. We applied Pearson correlation, multiple linear regression, and structural equation modeling (SEM) for data analysis.

Results: Correlation analysis revealed positive associations between mental health literacy and help-seeking attitudes, while stigma negatively impacted these attitudes. The regression analysis demonstrated that mental health literacy, social support, and mental illness stigma significantly influenced attitudes toward professional psychological help-seeking, with the adjusted R square being 0.402. Specifically, social support and stigma acted as partial mediators in the relationship between mental health literacy and help-seeking attitudes. SEM confirmed a significant chain mediation effect, with social support and stigma jointly mediating the link between mental health literacy and help-seeking attitudes, explaining 27.46% of the variance.

Conclusion: This study underscores the critical role of mental health literacy, social support, and mental illness stigma in shaping primary healthcare workers' attitudes toward professional psychological help-seeking. Strengthening these factors can enhance their mental health outcomes and encourage more proactive help-seeking behavior. Implementing targeted interventions in training programs to reduce stigma and promote social support could improve help-seeking behaviors and overall mental health within healthcare settings.

Keywords: primary healthcare worker, mental health, social support, mental illness stigma, professional psychological help-seeking attitudes

Introduction

Mental health literacy and its determinants have attracted significant scholarly attention, with research in this field expanding rapidly. The World Health Organization (WHO) defines mental health as a state of well-being in which individuals recognize their abilities, cope with the normal stresses of life, work productively, and contribute to their communities.[1] Mental health literacy refers to the knowledge and beliefs that enable individuals to identify, manage, and prevent mental health problems.[2] Previous studies show that individuals with high mental health literacy are better able to

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recognize their psychological issues,[3] reduce the stigma surrounding mental illness, and demonstrate a stronger willingness to seek professional psychological help.[4] As a result, they are more likely to access timely and effective support, improving their mental health[5] and quality of life.[6]

Healthcare Workers and Mental Health Stress

Healthcare workers (HCWs) are among the occupational groups most vulnerable to work-related stress.[7] They often face heavy workloads, long hours, endless shifts, tense doctor–patient relationships, pressure for professional advancement, performance assessments, and the challenge of balancing work with family and personal issues, leading to significant stress.[8] Prolonged exposure to excessive stress is a critical risk factor for both physical and mental health problems. The prevalence of mental disorders among HCWs exceeds that in other professions.[9] A recent meta-analysis involving 62,382 participants found that HCWs reported depression, anxiety, and distress at rates of 21.8%, 26.9%, and 48.1%, respectively.[10] In China, studies indicate that under significant psychological pressure, medical staff tend to have a more negative attitude toward seeking professional psychological help, likely due to the high stigma surrounding mental illness.[11] Most existing research in China focuses on the psychological responses of medical staff in general,[12,13] with limited attention to primary healthcare workers (PHC). However, primary care workers face unique challenges in China's healthcare system, such as limited resources, large patient volumes, and the emotional burden of caring for patients, which may exacerbate stress and mental health problems.[14] These factors make them an important target group for improving mental health literacy and help-seeking attitudes.

While PHC workers play a critical role in community health, their specific mental health challenges and needs have been largely overlooked in existing studies. PHC workers are in a unique position to promote public mental health literacy (MHL) due to their close interactions with local communities.[15] In response to the growing burden of mental, neurological, and substance use disorders in low- and middle-income countries, the World Health Organization (WHO) launched the Mental Health Global Action Program (mhGAP) in 2002, emphasizing the integration of mental health services into primary healthcare settings to ensure accessible, affordable, and equitable care.[16–19] Thus, it is crucial to explore the factors and pathways influencing the mental health literacy and attitudes toward professional psychological help-seeking among Chinese primary healthcare workers.

The Role of Social Support in Mental Health Literacy

A substantial body of evidence shows a positive correlation between social support and mental health literacy, along with a negative correlation between social support and mental illness stigma. Social support also plays a key role in encouraging individuals to seek professional psychological help.[20–22] Social support refers to an individual's access to resources through social ties, including interactions with individuals, groups, and the broader community. These interactions often involve altruism, a sense of obligation, and reciprocity.[23,24] Peer support, for example, has been shown to increase mental health knowledge and reduce stigma, as reported by police officers in peer-support teams, thereby enhancing their mental health literacy.[25] Cohen and Wills[26] argued that social support promotes mental health by serving as a protective factor against mental health problems (main effect model) and as a buffer against stress (buffering model). Studies have confirmed that social support positively influences mental health in various groups, such as adolescents,[27] pregnant women,[28] and the elderly.[29] Higher levels of social support in these groups are associated with lower levels of anxiety, depression, loneliness, and fewer instances of self-harm. Furthermore, social support plays a critical role in reducing mental illness stigma, which is a significant barrier to seeking professional help. Individuals who receive support from family and peers are more likely to overcome stigma and take proactive steps toward seeking professional help.[27,29,30]

Cultural Influences on Mental Illness Stigma in China

Although mental illness stigma is widespread globally, studies show that stigma is more pronounced in Eastern societies compared to Western countries.[31] In China, research involving various groups—such as the general public, medical students, healthcare workers, and caregivers of individuals with mental disorders—has revealed relatively low mental health literacy, with a strong focus on stigma associated with mental illness.[32–35] Cultural factors significantly shape both

mental illness stigma and attitudes toward professional help-seeking in China. East Asian culture, deeply rooted in Confucian values, emphasizes collectivism, social harmony, family reputation, and the obligation to conform to societal norms.[36] These cultural influences often lead Chinese individuals to seek help from informal sources, such as family, friends, or religious groups, or to manage their struggles independently. As a result, many avoid seeking professional mental health services to protect their reputation and that of their families.[37] In this context, behaviors associated with mental illness are often seen as unpredictable and socially disruptive, leading to feelings of shame for both patients and their families. The findings of this study provide valuable insights into how these cultural factors shape mental health attitudes, offering researchers and healthcare providers a deeper understanding of mental health issues in East Asian cultures. This knowledge can help address mental health challenges in a way that respects the complex, multifaceted needs of Asian populations.

Gaps in Current Research and Study Aims

While existing research has examined the impact of mental health literacy on healthcare workers' attitudes toward seeking professional psychological help, limited attention has been given to primary healthcare workers and the mediating roles of mental illness stigma and social support. To address this gap, we applied structural equation modeling to investigate the relationship between mental health literacy and attitudes toward professional psychological help-seeking among Chinese primary healthcare workers, exploring the chain-mediating roles of social support and stigma. The study aims to better understand how mental health literacy, stigma, and social support interact to influence PHC workers' help-seeking attitudes, providing practical implications for improving mental health services within primary healthcare systems. Building on these insights, we propose the following conceptual framework (Figure 1) and hypotheses:

H1: A significant correlation exists between mental health literacy, social support, mental illness stigma, and professional psychological help-seeking attitudes.

H2: Social support and mental illness stigma each mediate the relationship between mental health literacy and attitudes toward seeking professional psychological care.

H3: Social support and mental illness stigma have a chain-mediating effect on the relationship between mental health literacy and professional psychological help-seeking attitudes.

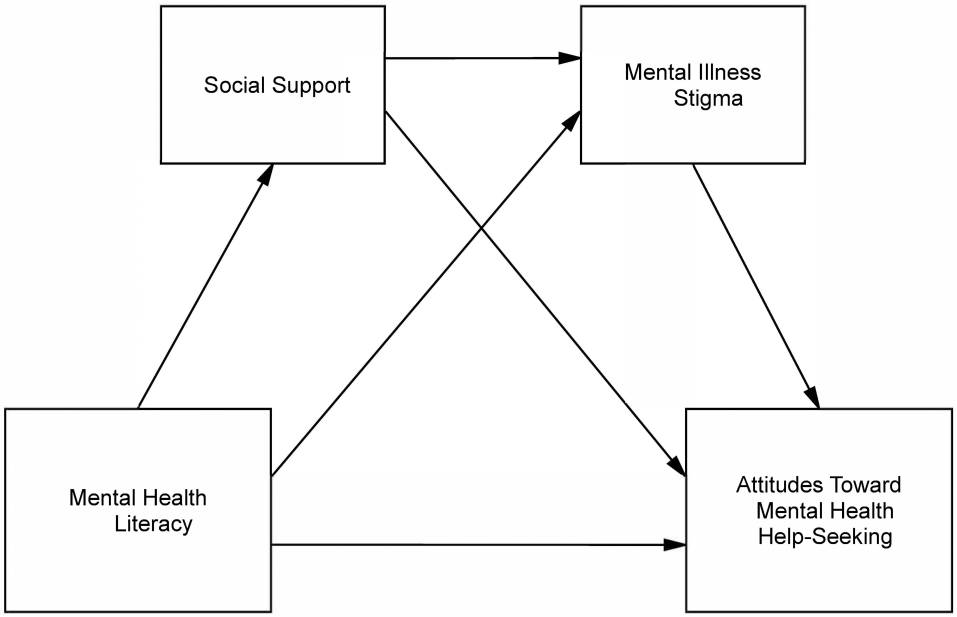

Figure 1 Conceptual framework.

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Materials and Methods

Study Design and Sampling

A descriptive, correlational, cross-sectional design was employed to explore the mental health literacy and attitudes toward professional psychological help-seeking among healthcare workers (HCWs) in public primary healthcare organizations in Shapingba District, Chongqing City, China. A two-stage sampling method was used to select participants.

First, a stratified random sampling approach was applied to choose HCWs from the 22 primary healthcare institutions in Shapingba District, which includes 18 community health service centers and 4 township health centers. Nine community health centers and 2 township health centers were selected proportionally for inclusion in the study.

Second, a non-random convenience sampling method was used within each selected institution to recruit HCWs. This approach ensured feasibility and efficiency in reaching the required sample size. HCWs available during the survey period from November to December 2023 were invited to participate via an anonymous online self-report survey conducted on the "Wenjuanxing" platform.

Shapingba District, one of the largest cities in southwest China, has a significant demand for healthcare services. It ranked second in the 2023 national assessment of basic public health services and achieved the highest score in the city for chronic disease prevention and control.[38] With its strong healthcare infrastructure, Shapingba District serves as a representative setting for this study.

Inclusion Criteria

Doctors, nurses, and medical technicians with at least one year of experience, a professional qualification certificate (physician, nurse, or medical technician), and voluntary informed consent to participate.

Exclusion Criteria

Doctors, nurses, and medical technicians currently on leave, interns, and those in further study during the survey period.

Structural equation modeling (SEM) was used to analyze the mediated effects. The sample size was determined based on the commonly used rule of thumb, which suggests that the number of participants should be 10–15 times the number of observed variables to ensure sufficient statistical power. The study included 12 variables: 3 dimensions of the Mental Health Literacy Scale, 3 dimensions of the Social Support Rating Scale, 2 dimensions of the Mental Illness Stigma Scale, and 4 dimensions of the Attitudes Toward Professional Psychological Help Scale. Based on this rule, the required sample size was calculated to be at least 120 to 180 participants. To account for potential invalid responses (estimated at 20%), the required sample size was adjusted to 225 participants. A total of 793 questionnaires were distributed, and 721 valid responses were collected, yielding an effective response rate of 90.92%.

Ethical Considerations

A link to the anonymous online survey was shared with potential participants through social media platforms. Participants provided online informed consent before data collection. They were instructed to read the informed consent page at the beginning of the survey and click the consent button at the bottom if they agreed to participate. Once consent was obtained, participants completed the online self-report survey. The study clearly communicated its purpose, procedures, and data usage, assuring participants that their involvement was voluntary and their identities would remain confidential. The study received ethical approval from the Ethics Committee of Chongqing Medical University (Ethics No. 2023093), and informed consent was obtained from all respondents.

Demographic Characteristics

A self-designed demographic questionnaire was used to collect information on participants' gender, age, occupation, marital status, educational background, physical condition, whether they had a doctor-diagnosed mental illness, whether they knew or had been in contact with someone with a mental illness, and their willingness to interact with individuals with mental health issues.

Measurement of Mental Health Literacy

The Multicomponent Mental Health Literacy Measure (MMHL), developed by Jung et al[39] based on Jorm's core concept of mental health literacy, is used to assess individuals' mental health literacy levels. The scale consists of 22 items across three dimensions: knowledge, belief, and resources. It employs a dichotomous scoring system. For the knowledge and belief dimensions, respondents rate their agreement on a 5-point Likert scale, with an option for "I do not know." In the knowledge dimension, selecting "completely agree" or "basically agree" scores 1 point, while other responses score 0 points. In the belief dimension, "completely agree" or "basically agree" also scores 1 point, while "completely disagree" or "basically disagree" also scores 1 point, with other responses scoring 0 points. The resource dimension consists of yes/no questions, with "yes" scoring 1 point and "no" scoring 0 points. A higher MMHL score indicates higher mental health literacy. The Chinese version of the scale has a Cronbach's alpha coefficient of 0.80.

Measurement of Social Support

The Social Support Rating Scale (SSRS), developed by Xiao,[40] measures the level of social support and consists of 10 self-reported items in Chinese. The scale includes three sections: subjective support (SS) with 4 items, objective support (OS) with 3 items, and support use (SU) with 3 items. The total SSRS score ranges from 12 to 66, calculated by summing the scores from all three sections. Higher scores indicate greater social support. The SSRS is widely considered one of the most reliable tools for assessing social support in the Chinese population, with proven reliability and validity across various studies.[41] The Cronbach's alpha coefficients for the scale's dimensions range from 0.89 to 0.94, and the test-retest reliability is 0.92, demonstrating strong reliability and validity.

Measurement of Mental Illness Stigma

The Perceived Devaluation-Discrimination Scale (PDDS), developed by Link et al,[42] assesses public attitudes and perceptions toward individuals with mental illness. The scale consists of two dimensions: perceived discrimination and perceived devaluation,[43] with 12 items in total. These items are divided into two factors: one reflecting 'perceived acceptance and non-negative evaluation' and the other representing 'perceived discrimination and negative evaluations'.[44] The scale uses a 5-point Likert format, with total scores ranging from 12 to 60. Higher scores indicate greater public stigmatization of individuals with mental illness. The Cronbach's alpha for the total scale is 0.70, indicating acceptable reliability.

Measurement of Attitudes Towards Seeking Professional Psychological Help

The Attitudes toward Seeking Professional Psychological Help (ATSPPH) scale, developed by Fischer and Turner,[45] consists of 29 items divided into four dimensions: trust in professionals, tolerance of society and individuals, openness to one's own problems, and self-perception of the need for psychological help. The scale uses a 5-point Likert format, with 18 items scored in reverse. The total score ranges from 29 to 145, with higher scores reflecting a more positive attitude toward seeking professional psychological help. The Cronbach's alpha coefficient for the Chinese version of the scale is 0.810, indicating good internal consistency.

Statistical Analysis

Categorical data are presented as numbers (percentages), while continuous data are expressed as mean ± standard deviation. The normality of data distribution was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests. For data meeting normality assumptions, independent samples *t*-tests were used to compare differences between two groups (eg, male vs female healthcare workers). For comparisons of three or more groups (eg, healthcare workers across different age groups), one-way analysis of variance (ANOVA) with Tukey's post-hoc test was applied. Pearson correlation was used to examine relationships between mental health literacy, social support, mental illness stigma, and attitudes toward seeking professional psychological help.

For categorical variables, dummy coding was used (eg, gender: male = 0, female = 1; age groups: under 30 = 1, 30–40 = 2, 40–50 = 3), and these were included in the multiple linear regression analysis to identify predictors of attitudes toward seeking

professional psychological help. A total of 21 predictors were included in the regression model, encompassing mental health literacy, social support, stigma, and demographic factors such as age, gender, and education level.

To further explore the impact of mental health literacy, social support, and mental illness stigma on help-seeking attitudes, structural equation modeling (SEM) was conducted using Amos 24.0 software to analyze mediation effects. In this model, mental health literacy served as the independent variable, and attitude toward seeking professional psychological help was the dependent variable, with social support and mental illness stigma as potential mediators. The model's goodness-of-fit, path coefficients, and significance tests were examined to clarify the relationships between variables and assess the magnitude and significance of the mediating effects.

Since the variables in this study were assessed through scale items and represented latent variables, SEM's measurement model was used to link scale items to latent variables. This approach allows for more accurate and reliable results by accounting for measurement error. To improve the accuracy of estimates, gender was included as a control variable in the analysis. All path analyses incorporated control variables to enhance the reliability of estimates. Finally, total and indirect effects, along with 95% confidence intervals (CIs), were tested using 5000 iterations of Bootstrapping. The significance level for testing was set at $\alpha = 0.05$.

Results

Sample Characteristics

Table 1 presents the differences in attitudes toward seeking professional psychological help based on the sociodemographic and clinical characteristics of the participants. The participants' ages ranged from 18 to 69 years, with a mean age of 35.06 years (SD = 7.998). The majority of participants were female (615, 85.3%). Among the participants, 238 were doctors (33.01%), 306 were nurses (42.44%), and 177 were medical technicians (24.55%). Regarding physical condition, 106 participants (14.7%) reported their health as "Very good", 278 (38.56%) as "Good", 296 (41.05%) as "General", 39 (5.41%) as "Poor", and 2 (0.28%) as "Very poor". The analysis of attitudes toward seeking professional psychological help revealed significant differences based on participants' gender, occupation, educational background, physical condition, workload, availability of psychological services in their medical institutions, and their willingness to interact with individuals with mental illness.

Table 1 Sociodemographic and Clinical Characteristics (N=721)

Variable	Category	Frequency (%)	ATSPPH t/F
Gender	male	106(14.7%)	4.446***
	female	615(85.3%)	
Age	≤30	242(33.56%)	1.855
	30~40(inclusive)	308(42.72%)	
	40~50(inclusive)	141(19.56%)	
	>50	30(4.16%)	
Occupation	Doctor	238(33.01%)	6.08**
	Nurse	306(42.44%)	
	Medical technicians	177(24.55%)	

(*Continued*)

Table 1 (Continued).

Variable	Category	Frequency (%)	ATSPPH t/F
Years of employment(years)	≤6	139(19.28%)	0.797
	6~10(inclusive)	194(26.91%)	
	10~15(inclusive)	187(25.94%)	
	>15	201(27.88%)	
Job Title	Title-less	24(3.33%)	0.108
	Junior	372(51.60%)	
	Intermediate	264(36.62%)	
	Associate Senior	59(8.18%)	
	Senior	2(0.28%)	
Marriage	Single	141(19.56%)	0.043
	Married	550(72.28%)	
	Divorced	30(4.16%)	
Educational Background	Specialist	217(30.1%)	4.054*
	Bachelor	497(68.93%)	
	Graduate Student	7(0.97%)	
Daily working hours	≤8	217(30.10%)	0.864
	8~10(inclusive)	447(62.00%)	
	10~12(inclusive)	43(5.96%)	
	>12	14(1.94%)	
Average Monthly Income(CNY)	≤4000	203(28.16%)	1.889
	4000~6000(inclusive)	369(51.18%)	
	6000~8000(inclusive)	114(15.81%)	
	>8000	35(4.85%)	
Physical Condition	Very good	106(14.7%)	11.898***
	Good	278(38.56%)	
	General	296(41.05%)	
	Poor	39(5.41%)	
	Very poor	2(0.28%)	
Employment type	Permanent staff	243(33.70%)	−0.184
	Non-permanent staff	478(66.30%)	
Teaching tasks	Yes	117(16.23%)	−0.832
	No	604(83.77%)	

(*Continued*)

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Table 1 (Continued).

Variable	Category	Frequency (%)	ATSPPH t/F
Scientific research tasks	Yes	23(3.19%)	0.992
	No	698(96.81%)	
Workload	Very easy	4(0.55%)	2.382*
	Fairly easy	46(6.38%)	
	Average	418(57.98%)	
	Fairly heavy	237(32.87%)	
	Very heavy	16(2.22%)	
Does the healthcare institution provide mental health services?	Yes	358(49.65%)	8.828***
	No	219(30.37%)	
	Not sure	144(19.97%)	
Have you ever or currently suffered from mental illness?	Never been sick	669(92.79%)	1.765
	Past or current illness	52(7.21%)	
Do you know or have you had contact with people with mental illnesses?	No	294(40.78%)	−0.330
	Yes	427(59.22%)	
Are you willing to interact with people with mental illnesses?	No	266(36.89%)	−8.242***
	Yes	455(63.11%)	

Notes: *P < 0.05; ** P < 0.01; *** P < 0.001.
Abbreviation: ATSPPH, Attitudes towards seeking professional psychological help scale.

Levels of MMHL, SSRS, PDDS and ATSPPH

Table 2 presents the levels of mental health literacy, social support, mental illness stigma, and attitudes toward professional psychological help among primary healthcare workers. The average score for mental health literacy was 14.40±4.65 (out of a possible 22), for social support it was 42.19±9.08 (out of 66), for mental illness stigma it was 33.92 ±8.41 (out of 60), and for attitudes toward professional psychological help it was 103.40±18.98 (out of 145). The results indicate that primary healthcare workers had moderate levels of mental health literacy and social support, experienced a moderate degree of mental illness stigma, and generally held positive attitudes toward seeking professional psychological help, though there was considerable variability.

Correlations Among MMHL, SSRS, PDDS and ATSPPH

The Pearson correlation analysis results, shown in Table 3, revealed significant relationships among mental health literacy, social support, mental illness stigma, and attitudes toward professional psychological help-seeking ($P < 0.001$). In line with our hypothesis, mental health literacy was positively correlated with social support ($r = 0.269$, $P < 0.001$) and professional psychological help-seeking attitudes ($r = 0.524$, $P < 0.001$), while it was negatively correlated with mental illness stigma ($r = -0.251$, $P < 0.001$). Social support was negatively correlated with mental illness stigma ($r = -0.343$, $P < 0.001$) and positively correlated with professional psychological help-seeking attitudes ($r = 0.405$, $P < 0.001$). Additionally, mental illness stigma was negatively correlated with help-seeking attitudes ($r = -0.426$, $P < 0.001$). Based on these correlations, the next step involved using structural equation modeling (SEM) to explore the specific pathways among these variables and test the chain-mediating roles of social support and mental illness stigma among primary healthcare workers.

Table 2 Levels of MMHL, SSRS, PDDS and ATSPPH (N=721)

Variables	Min	Max	The Total Score Mean (SD)
MMHL	0	22	14.40(4.65)
Knowledge	0	10	6.73(2.45)
Belief	0	8	4.96(1.82)
Resource	0	4	2.71(0.93)
SSRS	14	66	42.19(9.08)
Subjective Support	8	32	22.99(5.18)
Objective Support	3	22	10.72(3.58)
Support Utilization	3	12	8.48(2.05)
PDDS	12	60	33.92(8.41)
Perceived depreciation	6	30	16.56(4.53)
Perceived discrimination	6	30	17.36(4.74)
ATSPPH	41	145	103.40(18.98)
Confidence in Mental Health Practitioner	11	45	33.35(6.57)
Stigma Tolerance	6	25	18.66(3.81)
Interpersonal Openness	10	35	24.01(4.87)
Recognition of Need for Psychotherapeutic Help	12	40	27.38(5.35)

Abbreviations: MMHL, Multicomponent Mental Health Literacy Measure; SSRS, Social Support Rating Scale; PDDS, Perceived Devaluation-Discrimination Scale; ATSPPH, Attitudes toward Seeking Professional Psychological Help.

Table 3 The Results of Pearson Correlation Analysis (N=721)

Variables	MMHL	SSRS	PDDS	ATSPPH
MMHL	1	–	–	–
SSRS	0.269***	1	–	–
PDDS	−0.251***	−0.343***	1	–
ATSPPH	0.524***	0.405***	−0.426***	1

Notes: *** $P < 0.001$.
Abbreviations: MMHL, Multicomponent Mental Health Literacy Measure; SSRS, Social Support Rating Scale; PDDS, Perceived Devaluation-Discrimination Scale; ATSPPH, Attitudes toward Seeking Professional Psychological Help.

Factors Predicting Attitudes Towards Seeking Psychological Help

Hierarchical multiple regression analysis was conducted in two steps to examine the factors influencing attitudes toward seeking psychological help. Only statistically significant variables were included in the analysis of the ATSPPH scores, resulting in 10 predictors: MMHL, SSRS, PDDS, gender, occupation, educational background, physical condition, workload, availability of psychological services in medical institutions, and willingness to interact with people with mental illness. In the first step, the model included only MMHL, SSRS, and PDDS. The model was significant ($F = 162$, $P < 0.001$), explaining 40.2% of the variance. MMHL had the strongest significant independent effect, followed by PDDS and SSRS. The second step included all 10 predictors and was also significant ($F = 50.502$, $P < 0.001$), explaining 44.4% of the variance. MMHL remained the strongest predictor, followed by PDDS, SSRS, gender, willingness to interact with people with mental illness, and physical condition. The remaining four predictors showed insignificant independent effects (Table 4). These findings confirm that MMHL, SSRS, and PDDS are the primary factors influencing ATSPPH scores, supporting our theoretical hypothesis and providing a solid foundation for the subsequent structural equation modeling.

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Table 4 Hierarchical Regression: Attitudes Towards Professional Psychological Help Seeking (N=721)

Model	β	VIF	Adjusted R^2	F
1MMHL	0.405***	1.113	0.402	162.27***
SSRS	0.210***	1.181		
PDDS	−0.252***	1.170		
2MMHL	0.368***	1.175	0.444	58.502***
SSRS	0.197***	1.308		
PDDS	−0.210***	1.270		
Gender	−0.151***	1.026		
Occupation	−0.042	1.081		
Educational Background	−0.001	1.047		
Physical Condition	−0.081**	1.198		
Workload	−0.027	1.084		
Does the healthcare institution provide mental health services?	0.048	1.142		
Are you willing to interact with people with mental illnesses?	0.140***	1.133		

Notes: ** P < 0.01; *** P < 0.001. VIF < 10 is acceptable.
Abbreviations: MMHL, Multicomponent Mental Health Literacy Measure; SSRS, Social Support Rating Scale; PDDS, Perceived Devaluation-Discrimination Scale; ATSPPH, Attitudes toward Seeking Professional Psychological Help.

Structural Equation Modelling and Estimation of Its Path Coefficients

The convergent validity of the four measurement models for mental health literacy, social support, mental illness stigma, and attitudes toward professional psychological help-seeking was assessed following the guidelines of Hair.[46] Convergent validity was evaluated based on factor loadings, average variance extracted (AVE), and composite reliability (CR). Standardized factor loadings should ideally exceed 0.5 and be statistically significant, while CR should be greater than 0.7 and AVE greater than 0.5. The results show that the standardized factor loadings, CR, and AVE for each variable meet these criteria, indicating satisfactory convergent validity across all four measurement models.

A structural equation model was constructed using AMOS software, with mental health literacy as the independent variable and attitudes toward professional psychological help-seeking as the dependent variable. Social support and mental illness stigma were included as mediators. The model fit indices are as follows: $\chi^2/df = 3.847$, GFI = 0.952, AGFI = 0.924, NFI = 0.959, CFI = 0.969, and RMSEA = 0.063. These indices indicate that the structural equation model demonstrates a good fit.

The standardized coefficients for each path in the model are shown in Figure 2. The results reveal several key relationships: (1) Mental health literacy significantly and directly influences attitudes toward seeking professional psychological help (r = 0.410, P < 0.001); (2) Social support mediates the relationship between mental health literacy and professional psychological help-seeking attitudes (r = 0.227, P < 0.001), accounting for 13.98% of the total effect; (3) Mental illness stigma also mediates the relationship between mental health literacy and attitudes toward professional psychological help-seeking (r = −0.265, P < 0.001), with a mediation effect accounting for 7.08% of the total effect; and (4) Both social support and mental illness stigma jointly mediate the relationship between mental health literacy and attitudes toward professional psychological help-seeking, with this combined mediation effect accounting for 6.37% of the total effect.

Mediation Effect Test

To further explore the mediating effects of social support and mental illness stigma on the relationship between mental health literacy and attitudes toward professional psychological help-seeking, the bias-corrected percentile Bootstrap method was applied. MacKinnon[47] concluded that this method provides more accurate confidence intervals than the Sobel test. Accordingly, this study used AMOS software and performed Bootstrap resampling 5000 times to estimate the mediation effects of social support and mental illness stigma, along with their 95% confidence intervals. A confidence interval that does not include zero indicates a statistically significant mediation effect, while one that includes zero suggests nonsignificance. The results are presented in Table 5.

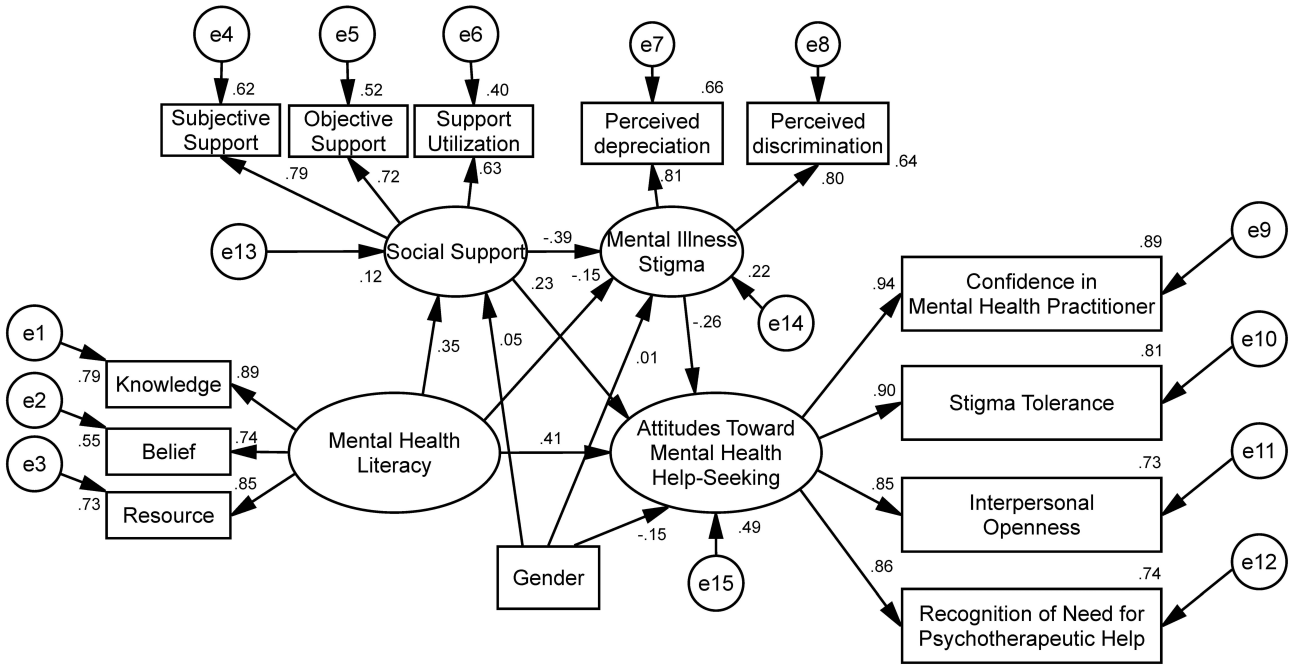

Figure 2 Chain mediation model.

Discussion

This study obtained basic data on mental health literacy, social support, mental illness stigma, and attitude towards seeking professional psychological help among medical staff in primary medical institutions in Shapingba District, Chongqing. First, we presented the basic findings of the study; second, we employed a chain mediation model to examine the intricate relationships between these variables. Our hypothesis was that social support and mental illness stigma were partial mediators between mental health literacy and attitude towards seeking help, and the results supported our hypothesis. Specifically, social support and mental illness stigma jointly mediated the relationship between mental health literacy and attitude towards seeking professional psychological help. Bootstrap analysis confirmed the robustness of these mediation effects.

Table 5 The Direct, Indirect, and Overall Effects of MMHL on ATSPPH (N=721)

Type of Effect	*β*	*SE*	Bootstrap 5000 Time 95% CI Percentile	*P*
Direct Effects	3.165	0.281	2.637–3.754	<0.001
Indirect Effects	1.198	0.190	0.850–1.599	<0.001
Total Effects	4.363	0.314	3.799–5.031	<0.001
A→B→D	0.610	0.146	0.371–0.973	<0.001
A→C→D	0.309	0.113	0.066–0.494	0.001
A→B→C→D	0.278	0.069	0.167–0.458	<0.001

Note: *β* is unstandardized path coefficient; *SE* is standard error; A is mental health literacy; B is social support; C is mental illness stigma; and D is attitudes toward seeking professional psychological help.

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The results show that the average mental health literacy score among primary healthcare workers was 14.40, slightly higher than the theoretical mean of 11, indicating a moderate level of literacy with a score ratio of 65.46%. In comparison, a survey by Jiang Guangrong[48] found that the general Chinese public had a lower ratio of 59.68%, suggesting that primary healthcare workers exhibit higher mental health literacy than the general population. A similar survey of nursing staff in large public hospitals[49] reported a slightly higher ratio of 70.6%. This discrepancy can be attributed to two main factors: first, primary healthcare workers typically receive training on mental illness, resulting in a higher level of knowledge compared to the general public. Second, large hospitals impose stricter academic requirements, offering medical staff more exposure to mental health cases, which helps enhance their mental health literacy. Consequently, nursing staff in these hospitals benefit from greater opportunities to expand their knowledge, leading to higher literacy levels than those seen in primary healthcare workers.

Additionally, the study found a moderately high level of mental illness stigma among primary healthcare workers (33.92 ± 8.41). This score is higher than that observed among nurses in the United States[50] but is consistent with findings among community mental health workers in Guangzhou, China.[51] This comparison underscores that the stigma related to mental illness is prevalent not only in Western countries but also in China. The later development of mental health literacy research in China compared to Western countries, along with more widespread mental health literacy programs abroad,[52] likely contributes to this discrepancy. Traditional Chinese cultural beliefs also play a significant role in reinforcing stigma, leading to deeper prejudice against individuals with mental illnesses and influencing both public perceptions and medical staff attitudes.[33] These cultural factors, deeply rooted in Confucianism, place a strong emphasis on family reputation, social harmony, and adherence to societal norms, which can lead individuals to avoid seeking professional help to protect both their own and their family's public image. Such cultural dynamics shape the attitudes of both healthcare workers and patients, contributing to the persistence of stigma in China.

Moreover, primary healthcare workers had a medium-high score (103.40 ± 18.98) for attitudes toward professional psychological help-seeking, surpassing the scores of community residents in Wuhan.[53] This suggests that primary healthcare workers generally hold more favorable views on the effectiveness of professional psychological help during crises, indicating a more positive attitude toward seeking professional help than the general public.

The study supports both the direct (72.54%) and indirect (27.46%) effects of mental health literacy on attitudes toward seeking professional psychological help. These findings align with previous research[54] highlighting the positive impact of knowledge, beliefs about mental illness, and social support on mental health help-seeking.[55] Mental health literacy, including awareness of interventions, confidentiality, affordability, and mental illness beliefs, significantly influences individuals' willingness to seek help. This underscores the need to enhance mental health literacy among primary healthcare workers, address their beliefs about mental illness, and provide greater material and emotional support to improve their attitudes toward seeking professional psychological help.

The chain mediation model revealed that both social support and mental illness stigma mediate the relationship between mental health literacy and attitudes toward seeking professional psychological help. Social support plays a crucial role in helping individuals respond to stressors.[56] Defined as the emotional, informational, and instrumental assistance from one's social network,[57] higher social support has been linked to reduced depressive symptoms, especially among vulnerable groups like African American adolescents.[27] Cohen and Wills[26] proposed that social support can buffer the negative impact of stress on mental health. In contrast, mental illness stigma, which involves stereotyping and self-deprecation,[58] deters individuals from seeking help due to fear of discrimination. This avoidance behavior impedes mental health resolution and discourages professional help-seeking.[59]

Our findings highlight the combined mediating effects of social support and mental illness stigma, which accounted for 27.46% of the total effect, with each contributing 13.98% and 6.37%, respectively. This underscores the multifaceted nature of help-seeking behavior and emphasizes the need to address factors beyond mental health literacy, such as social support and stigma, in interventions. By incorporating strategies that target both social support and stigma reduction, mental health programs can offer a more comprehensive approach to encouraging individuals to actively seek professional psychological help.

Implications

This study provides valuable insights into the factors influencing attitudes toward seeking psychological help among primary healthcare workers in Chongqing, China. The findings suggest several key interventions to enhance mental health literacy, reduce stigma, and improve social support.

To address moderate mental health literacy levels, targeted educational programs should be implemented. Research shows that integrating mental health education into healthcare workers' ongoing training can improve help-seeking attitudes.[60] These programs should include knowledge of mental illness, treatment options, and the importance of early intervention. Interactive, case-based learning can further engage healthcare professionals and reduce skepticism.[61] The high level of stigma surrounding mental illness among healthcare workers calls for stigma-reduction programs. Studies indicate that stigma-reduction workshops and peer support initiatives are effective in changing attitudes.[62] These programs can focus on empathy, challenge stereotypes, and provide a platform for staff to share personal experiences. Social support is critical, and fostering supportive work environments can alleviate stress and improve help-seeking behaviors. Evidence suggests that team-building activities, regular mental health check-ins, and confidential counseling services can strengthen social networks and reduce isolation.[63] Finally, considering the cultural context, mental health interventions in China should incorporate cultural sensitivity. Culturally tailored programs that respect traditional values while addressing stigma can be more effective. Involving families in stigma-reduction efforts can create a supportive environment for healthcare workers.[64]

In conclusion, comprehensive, culturally sensitive interventions targeting mental health literacy, stigma, and social support can significantly improve both healthcare workers' mental health and patient care.

Limitations

First, this study employed a cross-sectional design, which limits the ability to establish causal relationships between key variables. Future studies could use a longitudinal design to better explore causality. Second, while a mediating effect of approximately 27.46% was identified, other unobserved factors and mechanisms may also play a role. Future research should explore additional potential influences in more detail.

Conclusions

This study concludes that mental health literacy, social support, and mental illness stigma significantly influence primary healthcare workers' attitudes toward seeking professional psychological help. These findings are consistent with the results of structural equation modeling and mediation analysis, confirming the importance of improving mental health literacy and reducing stigma in healthcare settings to encourage help-seeking behaviors. Social support plays a critical mediating role, highlighting the need for robust workplace support networks. However, the study's cross-sectional design limits the ability to draw causal inferences, and future research should adopt longitudinal designs to confirm causal relationships. Furthermore, this study highlights the importance of reducing stigma through past experience, including implementing targeted educational programs, peer support programs, team-building activities, family involvement, and other measures. Additionally, given the study's focus on primary healthcare workers in China, the cultural context should be considered when generalizing these findings to other settings. Follow-up research should explore other mediating factors and examine the long-term effects of mental health education and support systems on healthcare workers' well-being.

Abbreviations

WHO, World Health Organization; SEM, Structural equation modeling; HCWs, Healthcare workers; PHC, Primary healthcare workers; MHL, Mental health literacy; MMHL, Multicomponent Mental Health Literacy Measure; SSRS, Social Support Rating Scale; SS, Subjective support; OS, Objective support; SU, Support use; PDDS, Perceived Devaluation-Discrimination Scale; ATSPPH, Attitudes toward Seeking Professional Psychological Help; SD, Standard deviation.

Data Sharing Statement

The data supporting the findings of this study are limited in availability as they were used under a specific license and are not publicly accessible.

Ethics Approval and Consent to Participate

This study was approved by the Ethics Committee of the School of Public Health, Chongqing Medical University (Ethics Approval No.: 2023093), and all methods were performed in accordance with relevant guidelines and regulations. This study complies with the ethical standards set forth in the 1964 Declaration of Helsinki. All participants gave informed consent before data collection. Participants were promised that the information provided would remain anonymous.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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The authors declare no competing interests in this work.

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