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Self-stigma of seeking professional psychological help and its influencing factors among high-risk health care workers for depression and anxiety: a multicenter cross-sectional study

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Abstract

Objective To investigate the status and influencing factors of self-stigma in seeking professional psychological help among high-risk Chinese Health Care Workers (HCWs) for depression and anxiety.

Methods This multicenter survey employed convenience sampling and was conducted from November 2022 to January 2023. A total of 1224 HCWs from 12 hospitals in Hunan Province were selected for an online questionnaire survey. The questionnaire included socio-demographic characteristics of participants, the Self-stigma of Seeking Help Scale, the Perceived Social Support Scale, the Patient Health Questionnaire-9 Scale, the Generalized Anxiety Disorder-7 Scale, and the General Self-Efficacy Scale-Schwarzer. A total score of ≥ 10 on the Patient Health Questionnaire-9 indicated high risk of depression, and a total score of ≥ 10 on the Generalized Anxiety Disorder-7 indicated high risk of anxiety. Data analysis was performed using SPSS 22.0 statistical software. Descriptive statistics, univariate analysis, Spearman correlation analysis, and generalized linear model analysis were used to investigate the status of self-stigma in seeking professional psychological help and to identify its influencing factors among high-risk HCWs.

Results Three hundred eighty four valid questionnaires from high-risk HCWs were included in the analysis. The total score of self-stigma of seeking professional psychological help among high-risk Chinese HCWs was 30.0 (26.0, 30.0). Results from the generalized linear model showed that average daily sleep duration, social support, depressive symptoms, and anxiety symptoms were significant influencing factors of self-stigma in seeking professional psychological help (all $P < 0.05$).

Conclusion The level of self-stigma of seeking professional psychological help among high-risk HCWs was moderate level, and diverse factors contribute to the self-stigma of seeking professional psychological help. Our study could

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inform the development of appropriate interventions to reduce self-stigma in seeking professional psychological help and enhance mental health among high-risk HCWs.

Keywords Healthcare workers, Professional psychological help, Self-stigma, Mental health

Introduction

Healthcare workers (HCWs) are a core component of the healthcare system, and the unique nature of their work and the high-pressure and complex environment have a significant impact on their mental health [1]. A recent comprehensive review of 161 research papers, encompassing 341,014 individuals globally, revealed that HCWs experienced heightened rates of job burnout (47%), anxiety (38%), depression (34%), acute stress disorder (30%), and post-traumatic stress disorder (26%) during the pandemic [1]. Furthermore, a survey indicated that among 7,795 frontline Australian HCWs, 819 (10.5%) considered suicide or self-harm during the pandemic's second surge [2]. These mental health challenges are not exclusive to the pandemic period; HCWs also face these issues under high-intensity work pressure in non-pandemic periods [3, 4].

Seeking professional psychological help from mental health professionals and health authorities is essential for effectively managing stressors and alleviating psychological symptoms, enabling individuals to better address psychological challenges [5–7]. Nevertheless, extensive research has indicated that a small proportion of HCWs actively seek professional psychological assistance for their mental health issues. For example, only a minority, ranging from 2.3% to 18.3%, of HCWs experiencing mental distress sought professional psychological help [8–11]. Additionally, one study showed that fewer than half of the HCWs who reported thoughts of suicide or self-harm sought professional psychological help (388 out of 819) [2].

One of the key barriers to individuals seeking professional psychological help is stigma [12]. Stigma is a personal attribute that is devalued by society, coexisting with labels, stereotypes, social exclusion; and discrimination, including social stigma and self-stigma [13]. Individuals facing psychological challenges often avoid seeking professional psychological help not solely due to worries about social stigma, and possibly more significantly, because of concerns regarding self-stigma [12, 14]. Self-stigma refers to individuals internalizing the stigmatizing views held by the public and exhibiting stigmatized characteristics such as self-identity sensitivity, self-defeatism, self-isolation, and self-narrowing [12]. According to the Social-Cognitive Model [15], the transition from social stigma to self-stigma and subsequently to behavioral inhibition can be explained through a series

of cognitive and emotional processes. Initially, individuals become aware of the societal stigma associated with mental health issues and seeking professional help. They may then agree with these stigmatizing views, internalizing them as part of their self-concept. When facing personal mental health challenges, these internalized views are applied to themselves, leading to self-stigma. This self-stigma results in decreased self-concept, including lower self-esteem and self-efficacy, which in turn leads to behavioral inhibition, such as avoiding seeking professional help. Lee et al. [16] found that the internalization of perceived social stigma regarding professional psychological help-seeking leads HCWs to develop self-stigmatizing attitudes toward seeking such help. Among HCWs, they fear rejection and discrimination from colleagues or patients during the psychological help-seeking process, and negative impacts on their career prospects once diagnosed with mental health problems [17, 18]. Due to the existence of self-stigma toward seeking professional psychological help, the demand for and willingness of HCWs to seek professional psychological help are severely inhibited [17, 18].

The WHO emphasizes, the importance of increasing mental health awareness and combating stigma to safeguard mental well-being [19]. Studies [12, 15] have shown that the stigma associated with seeking professional psychological help can diminish an individual's self-efficacy, which in turn leads to a decreased willingness to seek such help and results in behavioral inhibition. This ultimately increases the risk of mental health issues such as depression, stress, anxiety, and job burnout among medical professionals [20, 21]. In this context, identifying stigma associated with seeking professional psychological help and its influencing factors is crucial. Currently, most previous research on stigma focuses on its relationship with mental or other illnesses [22–24], as well as attitudes or behaviors toward seeking professional psychological help [8, 25, 26]. There is a relative lack of studies addressing the status and factors of self-stigma toward seeking professional psychological help within populations, and the limited research has focused on students [27], perinatal women [28], and UK military doctors [29]. The study [29] on UK military doctors revealed that, in two self-reported items concerning self-stigmatizing beliefs related to seeking professional psychological help, UK military doctors reported higher levels than other military reference groups. This study [29] primarily

compared the levels of positive responses between UK military doctors and other military reference groups in terms of self-stigmatising beliefs related to seeking professional psychological help; however, it did not analyse the underlying reasons, and the applicability of these findings to non-military doctors or other healthcare professionals remains to be explored. This gap limits the development of effective strategies or measures to reduce or eliminate self-stigma toward seeking professional psychological help.

Understanding the factors influencing self-stigma of seeking professional psychological help is crucial for developing effective interventions. In this study, several key variables were examined within the framework of Social-Cognitive Theory, including social support, depressive symptoms, anxiety symptoms, and self-efficacy. These variables are closely related to the cognitive and emotional factors in Social-Cognitive Theory and have been identified in the literature as significant predictors of self-stigma. Social support has been proven to play a key role in alleviating stress and promoting mental health [30], and it has been shown to significantly reduce individuals' self-stigma [31]. Research indicates that there is a significant correlation between depressive symptoms, anxiety symptoms, and self-stigma, with more severe depressive symptoms and anxiety symptoms leading to stronger stigma [32, 33]. Individuals with depressive and anxiety symptoms tend to amplify the negative attitudes and evaluations from others or society, making the impact of social negative stereotypes more pronounced when considering seeking professional psychological help [34]. Self-efficacy plays a crucial role in the causal mechanism from social stigma to self-stigma and then to behavioral inhibition. Self-stigma can lead to a decrease in self-efficacy, which in turn results in behavioral inhibition [15]. Additionally, basic demographic information, daily sleep duration, and psychological learning experiences were also taken into account, as these factors have been demonstrated to influence stigma and help-seeking behavior across different populations [35–38]. Therefore, it was hypothesized that these factors would affect the self-stigma of seeking professional psychological help among healthcare workers.

In China, seeking psychological help from professionals is often viewed as a sign of weakness and incompetence, which conflicts with the "face" culture [39]. Additionally, the Chinese cultural emphasis on "forbearance" and collectivism further suppresses self-disclosure [39]. Meanwhile, healthcare workers, as "angels in white," face a conflict between their professional image and their personal mental health needs [39, 40]. They worry that seeking professional psychological help may be perceived as unprofessional or a sign of inadequacy [39]. Against

this cultural backdrop, Chinese healthcare workers may experience self-stigma issues regarding professional psychological help-seeking. Therefore, this paper aims to investigate the level of self-stigma of seeking professional psychological help among high-risk HCWs for depression and anxiety and to identify potential influencing factors. The findings of this study can inform the development of targeted strategies aimed at reducing self-stigma and promoting help-seeking behaviors among HCWs, thereby enhancing their mental well-being.

Methods

Participants and settings

The participants of this study were a sample of HCWs from 12 hospitals in Hunan Province, recruited between November 2022 and January 2023, during which time they were experiencing a significant psychosocial burden due to the pandemic. Convenience sampling was employed in this study to select the participants. Inclusion criteria were as follows: (1) Age ≥ 18 years; (2) Doctors and nurses working in hospitals; (3) At high risk of developing depression (the Patient Health Questionnaire-9 total score ≥ 10) or anxiety (the Generalized Anxiety Disorder-7 total score ≥ 10); (4) Willingness to participate in the study.

The researchers designed the survey questionnaire using Questionnaire Star Web (<https://www.wjx.cn>) and distributed the questionnaire links to eligible HCWs through WeChat by the nursing managers from the 12 hospitals. Participants voluntarily accessed the web-based questionnaire and were informed about the research's purpose, the significance, data security, and their rights and responsibilities. The system limited each device to one response in questionnaire settings, ensuring participants could only submit once to prevent duplicates. Any questions encountered during the online filling process were answered by members of the research team. The collected data were strictly confidential and used only for research purposes. This study was approved by the medical ethics committee of the Hunan University of Medicine (Approval No.: 2022/H120020).

The study included 14 independent variables, with a sample size that is 20 times the number of independent variables [41]. Considering a 20% sample loss rate, a minimum sample size of 336 was required. A total of 1224 HCWs completed the questionnaire online. Of these, 16 questionnaires were deemed invalid because they were completed by individuals who were not doctors or nurses. Additionally, 824 questionnaires were excluded because the respondents did not meet the criteria for being at high risk of depression or anxiety. Questionnaires were excluded from the data analysis because the respondents' completion time was less than 100 s and the

quality of their answers was questionable. Finally, a total of 384 valid questionnaires were obtained.

Instruments

Socio-demographic questionnaire

This questionnaire includes items such as age, gender, marital status, educational level, working years, occupation, professional title, daily sleep duration, and psychological learning experience. For the assessment of daily sleep duration, we set up a single-choice question for participants to self-report. The item was: 'During the recent two weeks, how many average hours of actual sleep did you get daily?' The actual time was categorized into three groups: < 6 h, 6–8 h, and > 8 h, representing short, medium, and long sleep duration, respectively [42]. Participants chose one option from the three available choices.

Self-Stigma of Seeking Help (SSOSH)

The SSOSH is mainly used to assess concerns about the loss in self-esteem a person would feel if they decided to seek help from a psychologist or other mental health professional [43]. The scale consists of 10 items, each rated on a Likert 5-point scale, ranging from "1" for "strongly disagree" to "5" for "strongly agree". Items 2, 4, 5, 7, and 9 are reversely scored. The total score ranges from 10 to 50, with higher scores indicating stronger self-stigma in seeking professional psychological help. The scale has been validated for cross-cultural validity in various countries, including China [44]. Among medical doctors, the Cronbach's alpha for the SSOSH was 0.72 [20]. In this study, the Cronbach's alpha for the SSOSH was 0.762.

The Perceived Social Support Scale (PSSS)

The PSSS [45] was translated and modified by Jiang Qianjin from the scale developed by Blumenthal et al. in 1987, consists of 12 items divided into three dimensions: family support, friend support, and other support. It measures individuals' perceptions of support from family, friends, and others, with the total score reflecting the overall perceived social support. Each item is scored on a Likert 7-point scale, ranging from "1" for "strongly disagree" to "7" for "strongly agree". The total score ranges from 12 to 84, with scores of 12–36 indicating low support, 37–60 indicating moderate support, and 61–84 indicating high support. The Chinese version of the PSSS was validated among HCWs, showing high reliability with a Cronbach's alpha of 0.923 for the total scale, and good structural validity ($\chi^2/df = 1.669$, CFI = 0.971, RMSEA = 0.054, SRMR = 0.043) [46]. In this study, the Cronbach's alpha for the PSSS was 0.967.

The Patient Health Questionnaire-9 (PHQ-9)

The PHQ-9 is used to assess depressive symptoms experienced by participants in the past two weeks [47]. The PHQ-9 consists of 9 items and uses a 4-point Likert scale, with scores ranging from 0 (indicating "not at all") to 3 (indicating "nearly every day"). The total score ranges from 0 to 27, with a total score of ≥ 10 indicating a high risk of major depression. The Chinese version of the PHQ-9 has been validated in Chinese HCWs, with a Cronbach's alpha of 0.86 [48]. In this study, the Cronbach's alpha for the PHQ-9 was 0.929.

The Generalized Anxiety Disorder-7 (GAD-7)

The GAD-7 is used to evaluate self-perceived anxiety symptoms over the past two weeks [49]. It consists of 7 items, each scored from 0 to 3, with a total score ranging from 0 to 21. Higher scores indicate more severe anxiety symptoms, with a total score of ≥ 10 indicating a high risk of anxiety. The Chinese version of the GAD-7 has been widely used among Chinese populations [50] and has demonstrated good internal consistency among nurse samples from various regions of China (Cronbach's alpha = 0.95) [48]. The Cronbach's alpha for the GAD-7 in this study was 0.960.

General Self-Efficacy Scale (GSES)

Self-efficacy was assessed using the GSES developed by Schwarzer et al. [51] in 1997. The Chinese version of this scale was revised by Wang et al. [52]. The GSES consists of 10 items, each scored from 1 to 4, indicating "completely incorrect", "somewhat correct", "mostly correct", and "completely correct", respectively. The total score ranges from 10 to 40, with higher scores indicating higher levels of self-efficacy. The Chinese version of the GSES has been widely used among Chinese populations with good reliability and structural validity [52] and has demonstrated good internal consistency among nurse managers from 20 provinces and 102 medical institutions in China (Cronbach's alpha = 0.891 [53]). In this study, the Cronbach's alpha for the GSES was 0.926.

Data analysis

The data were analyzed using SPSS 22.0. The reliability of the scales was assessed using Cronbach's alpha coefficient. The characteristics of participants were presented as frequencies or proportions, and the levels of self-stigma of seeking professional psychological help was characterized using the median and interquartile range for skewed metric data. Mann–Whitney U test and Kruskal–Wallis H rank sum tests were used for single-factor analysis. Spearman correlation analysis

was performed to analyze the relationship between the self-stigma of seeking professional psychological help (SSOSH sum score) and the four continuous variables (PHQ-9 sum score, GAD-7 sum score, PSSS sum score and GSES sum score). To examine the factors influencing self-stigma of seeking professional psychological help, a multivariable analysis was conducted using the Generalized Linear Model (GLM). Specifically, the dependent variable, self-stigma of seeking professional psychological help, is a continuous variable with residuals that are approximately normally distributed. A linear function with an identity link in the GLM was used to model it. A residual histogram, a Q-Q plot, and the Kolmogorov–Smirnov (K-S) test were used to assess the distribution of the standardized residuals of the dependent variable. Statistical significance was determined at the $P < 0.05$ level. The potential multicollinearity among predictor variables was evaluated using the Variance Inflation Factor (VIF). The VIF values for all predictors were found to be below the commonly recommended threshold of 5, indicating that multicollinearity is not a significant concern in our model.

Results

Characteristics of participants

Among the 384 study subjects, the age of HCWs ranged from 19 to 60 years, with a mean age of (32.17 ± 6.45) years. The majority were female (90.9%), and 67.7% were married. Approximately 44.5% of HCWs had been working for more than 10 years, and 50.5% held primary professional titles. Table 1 presents the characteristics of the participants.

The study result indicate that the median and inter-quartile range of scores for the self-stigma of seeking professional psychological help among HCWs were 30.0 (26.0, 30.0).

Univariable analysis of socio-demographic factors associated with self-stigma of seeking professional psychological help

Table 2 presents the findings of the univariable analysis, which revealed significant differences in SSOSH scores among HCWs based on their daily sleep duration ($H = 7.725$, $p = 0.021$).

Correlation analysis between continuous variables and self-stigma of seeking professional psychological help

Table 3 shows that the total PHQ-9 score and GAD-7 score are positively correlated with the total score of SSOSH (Spearman's $r_s = 0.214$, $P < 0.001$; Spearman's $r_s = 0.164$, $P = 0.001$), while the total score of PSSS is negatively correlated with the total score of SSOSH among HCWs (Spearman's $r_s = -0.350$, $P < 0.001$).

Table 1 Characteristics of participants ($n = 384$)

Group	Frequency	Percentage(%)
Age (years)		
19–30	173	45.1
31–40	170	44.3
41–50	37	9.6
> 50	4	1.0
Gender		
Male	35	9.1
Female	349	90.9
Marital status		
Married	260	67.7
Single	116	30.2
Divorced	8	2.1
Educational level		
Junior college or below	86	22.4
Bachelor's degree	288	75.0
Master's degree or above	10	2.6
Working years		
< 3	44	11.5
3–5	57	14.8
5–10	112	29.2
> 10	171	44.5
Occupation		
Doctor	40	10.4
Nurse	344	89.6
Professional title		
Junior or not assessed	194	50.5
Intermediate	167	43.5
Senior	23	6.0
Daily sleep duration (hours)		
< 6	151	39.3
6–8	221	57.6
> 8	12	3.1
Psychological learning experience		
Yes	99	25.8
No	285	74.2

Multivariable analysis of self-stigma of seeking professional psychological help

The statistically significant variables in Table 2 and in Table 3 including daily sleep duration, PHQ-9, GAD-7 and PSSS were included in the Generalized linear regression analysis for self-stigma of seeking professional psychological help (Table 4).

The results of the model showed $\chi^2 = 94.556$, $P < 0.001$, indicating statistical significance of the generalized linear regression model. The variables included in the GLM were daily sleep duration, the total score of PSSS, the total score of PHQ-9, and the total score of GAD-7. The

Table 2 Univariable analysis of self-stigma of seeking professional psychological help ($n = 384$)

Group	n	M (P_{25} , P_{75})	Z/H	P
Age (years)			1.381	0.710
19–30	173	30.0 (26.0, 30.0)		
31–40	170	30.0 (26.0, 30.0)		
41–50	37	30.0 (24.0, 30.0)		
> 50	4	27.5 (21.7, 29.5)		
Gender			−0.996	0.319
Male	35	30.0 (28.0, 30.0)		
Female	349	30.0 (26.0, 30.0)		
Marital status			1.837	0.399
Married	260	30.0 (26.0, 30.0)		
Single	116	29.0 (25.2, 30.0)		
Divorced	8	27.5 (21.7, 31.5)		
Educational level			0.798	0.671
Junior college or below	86	30.0 (27.7, 31.0)		
Bachelor's degree	288	30.0 (25.2, 30.0)		
Master's degree or above	10	29.0 (23.7, 30.0)		
Working years			4.728	0.193
< 3	44	30.0 (28.0, 30.0)		
3–5	57	30.0 (27.0, 30.0)		
5–10	112	29.0 (25.0, 30.0)		
> 10	171	30.0 (26.0, 30.0)		
Occupation			−0.530	0.596
Doctor	40	29.0 (25.0, 30.0)		
Nurse	344	30.0 (26.0, 30.0)		
Professional title			2.128	0.345
Junior or not assessed	194	29.5 (26.0, 30.0)		
Intermediate	167	30.0 (26.0, 30.0)		
Senior	23	28.0 (22.0, 30.0)		
Daily sleep duration (hours)			7.725	0.021
< 6	151	30.0 (27.0, 30.0)		
6–8	221	29.0 (25.0, 30.0)		
> 8	12	26.5 (21.0, 30.0)		
Psychological learning experience			−1.471	0.141
Yes	99	29.0 (25.0, 30.0)		
No	285	30.0 (26.0, 30.0)		

Note: Z values: Wilcoxon Mann–Whitney U test for comparison of differences between two groups, or Kruskal–Wallis H test for comparison among three groups

Table 3 Correlations between continuous variables and self-stigma of seeking professional psychological help ($n = 384$)

Variables	The total score of SSOSH	
	r	p
The total score of PHQ-9	0.214	< 0.001
The total score of GAD-7	0.164	0.001
The total score of PSSS	−0.350	< 0.001
The total score of GSES	0.006	0.914

Table 4 Generalized linear regression analysis for self-stigma of seeking professional psychological help ($n = 384$)

Covariate	B	SE	Wald χ^2	p
Daily sleep duration (hours)				
< 6	3.215	1.177	7.458	0.006
6–8	1.874	1.188	2.489	0.115
> 8 (reference)	–	–	–	–
The total score of PSSS	−0.113	0.0157	51.674	< 0.001
The total score of PHQ-9	0.159	0.052	9.215	0.002
The total score of GAD-7	0.112	0.053	4.307	0.038

Note: B standardized regression coefficient, SE standard error

B values for each predictor are shown in Table 3. Specifically, HCWs with less than 6 h of daily sleep duration had a self-stigma score that was 3.215 units higher than that of the reference group ($B = 3.215$, $p = 0.006$). Perceived social support ($B = -0.113$, $p < 0.001$) emerged as a protective factor, with higher levels linked to lower self-stigma in seeking professional psychological help. Conversely, HCWs reporting more depressive ($B = 0.159$, $p = 0.002$) and anxiety symptoms ($B = 0.112$, $p = 0.038$) exhibited higher SSOSH scores. These findings underscore the impact of these variables on self-stigma of seeking professional psychological help among high-risk HCWs for depression and anxiety.

Discussion

The level of self-stigma of seeking professional psychological help among Chinese HCWs at high risk of depression and anxiety is moderate

The results of this study reveal that the median score for self-stigma of seeking help among these Chinese HCWs is 30.0 (26.0, 30.0). The median score of 30.0 lies within the middle range of the possible scores (10–50), indicating a moderate level of self-stigma in seeking professional psychological help. Furthermore, the interquartile range of 26.0 to 30.0 shows that 50% of HCWs fall within this range, suggesting that self-stigma in seeking professional psychological help is relatively common among Chinese HCWs at high risk of depression and anxiety. This score reflects a complex and paradoxical attitude observed in some HCWs: they may recognize the importance of mental health and the necessity for professional help, yet sociocultural influences, professional identity, or personal beliefs often lead to negative perceptions or apprehensions about seeking such assistance. The results of this study are similar to those of several other studies [27, 29]. In a study comparing the level of self-stigma of seeking professional psychological help between military doctors and other military personnel, Jones et al. [29] found that self-stigma of seeking professional psychological was

more prevalent among doctors. Another study [27] indicated that veterinary students at a university in Australia had significantly higher levels of self-stigma of seeking professional psychological help than non-veterinary students. This manifestation may stem from relevant cultural factors. On the one hand, in Chinese sociocultural contexts, seeking psychological help from professionals is often stigmatized by the public as a sign of mental illness [39]. When individuals internalize these stigmatizing views, they tend to develop self-stigmatizing attitudes toward seeking such help, which subsequently leads to behavioral inhibition [12]. Moreover, qualitative studies on the stigma of seeking professional psychological help have shown that the Chinese cultural notion of endurance tends to regard help-seeking behavior as a sign of incompetence, vulnerability, and inadequacy. Influenced by the concept of face, individuals are often reluctant to disclose their weaknesses to strangers, perceiving it as a behavior that undermines their self-esteem and confidence. This perception is internalized as part of the help-seeker's self-stigma [39]. On the other hand, in Chinese professional culture, healthcare workers are often socially constructed as "angels in white," an idealized identity that reflects society's high expectations for the medical profession to save lives and show compassion [40]. However, this role positioning also implies a conflict between the professional image and the personal mental health needs of healthcare workers. This professional identity leads doctors to worry that seeking professional psychological help may be labeled as "unprofessional" or "incompetent," and that they may be perceived as unable to meet the demands of their job. Consequently, they may equate help-seeking behavior with professional failure, leading to self-stigma and avoidance of psychological interventions [39]. Thus, it is essential to address these influencing factors identified in this study and implement relevant interventions to reduce the self-stigma of seeking professional psychological help among HCWs.

Self-stigma of seeking professional psychological help among Chinese HCWs at high risk of depression and anxiety is influenced by various factors

Sleeping time

Short sleep duration is a prominent issue in the health status of HCWs. This study shows that 39.3% of HCWs sleep less than 6 h per day. HCWs with less than 6 h of sleep who are at high risk of depression and anxiety had a self-stigma score 3.215 units higher than the reference group ($B = 3.215$, $p = 0.006$). This indicates a significant link between short sleep duration and self-stigma in seeking psychological help. Consistent with the findings of Birtel et al. [22, 54], poor sleep quality is negatively correlated with self-stigma, with less sleep associated with

more severe self-stigma. The possible reasons include individuals with short sleep duration often experiencing anxiety [55] and depressive symptoms [56], leading them to be more introverted, negative, and avoidant in social interactions, making it difficult for them to seek psychological help from others [37, 38]. Additionally, individuals with depression symptoms are more sensitive and tend to amplify negative perceptions and evaluations of seeking professional psychological help from others or society, thereby exacerbating the internalization of stigma [18, 34]. Furthermore, studies have indicated that short sleep duration is associated with reduced self-efficacy among individuals, reflecting their diminished confidence in completing tasks and overcoming challenges [57]. Individuals with lower self-efficacy are more prone to internalizing negative labels in the context of social stigma [58]. This increased susceptibility can be attributed to the fact that low self-efficacy compromises psychological resilience, making it more challenging for individuals to maintain confidence and a sense of control when facing negative evaluations from others. Consequently, short sleep duration indirectly heightens individuals' sensitivity to and internalization of stigma by diminishing their self-efficacy [58]. Therefore, at the hospital level, leaders in relevant departments should pay close attention to the sleep problems of clinical HCWs, strengthen the reserves of frontline personnel, arrange shifts reasonably, ensure adequate sleep time for HCWs working night shifts, provide necessary medical and psychological counseling services to HCWs, and focus on their physical and mental health to alleviate their psychological stress, anxiety, depression, and other negative emotions. At the individual level, HCWs should improve their professional skills, correctly face clinical work pressure and challenges, not neglect their mental health, enhance awareness of actively seeking help and support, and actively seek assistance from professional psychologists.

Level of social support

The results of this study show that the higher the social support level among HCWs, the lower their level of self-stigma in seeking professional psychological help ($P < 0.001$), consistent with the findings of Karaçar Y et al. [23, 31]. When individuals experience negative emotions, family, friends, or other social networks become their main avenues for seeking help and support [59]. Social support, which encompasses both instrumental and emotional support, provides individuals with guidance and practical assistance, such as sharing valuable information, positive knowledge, and effective coping skills; while also offering emotional encouragement by enhancing feelings of being loved, cared for, respected, and connected to a supportive

network [23, 60]. It helps individuals reduce self-stigma associated with seeking psychological help through various pathways and mechanisms, including enhancing individual self-efficacy, improving sleep quality, reducing negative emotions, diminishing the internalization of public stereotypes and discrimination, and promoting social integration [22, 23, 54, 60, 61]. For example, empirical studies have shown that social support not only enhances individuals' self-efficacy and sleep quality but also mediates the relationship between variables such as sleep quality and self-stigma, thereby indirectly reducing self-stigma [22, 54, 61]. Individuals who interact with these social networks exhibit lower levels of self-stigma and are more willing to consider treatment [62, 63]. There have been relevant studies reporting that social support interventions have shown good application effects in reducing self-stigma among women who have experienced domestic violence [64] and patients with hepatitis B [65]. Therefore, it is necessary to further strengthen social support for HCWs and implement intervention measures that are based on social contact to reduce their self-stigma and facilitate their seeking of professional psychological help.

Levels of depression symptoms and anxiety symptoms

The results of the multifactorial analysis in this study show that depression symptoms and anxiety symptoms are positively correlated with self-stigma of seeking professional psychological help, with higher levels of depression symptoms and anxiety symptoms among HCWs associated with more severe self-stigma of seeking professional psychological help ($P < 0.05$). This is consistent with the findings of Pellet J et al. [24, 28]. Individuals with anxiety symptoms and depression symptoms are more sensitive to topics related to anxiety symptoms or depressive symptoms and tend to amplify negative attitudes and evaluations from others or society. This perception can contribute to self-stigma [34]. Therefore, when considering whether to seek professional psychological assistance, negative stereotypes have a more significant impact on them, potentially leading them to feel discriminated against. Furthermore, individuals with anxiety or depression symptoms are more likely to show inhibited behavior [66], be more introverted, pessimistic, and more likely to avoid situations, and less likely to maintain social interaction [38], resulting in less social support for them. Feelings of self-shame can further exacerbate individual levels of depression. Therefore, paying attention to the mental health status of HCWs and identifying high-risk individuals early is crucial for promoting their seeking of professional psychological assistance.

Strengths and limitations

To the best of our knowledge, this study is the first to investigate self-stigma of seeking professional psychological help, as well as associated factors, among a large sample of Chinese HCWs across multiple centers. The results of this study could guide mental health providers in developing targeted interventions aimed at reducing self-stigma and promoting help-seeking behaviors among HCWs at high risk of depression and anxiety, ultimately enhancing their mental well-being.

This study has several limitations. Firstly, it uses a cross-sectional design, limiting the ability to establish causal relationships between self-stigma of seeking professional psychological help and its influencing factors. Secondly, in our study, the sample was predominantly composed of nurses (87.3% of the total) and female HCWs, which resulted in an underrepresentation of doctors, other healthcare professionals, and male participants. This bias may be attributed to the methods used for questionnaire distribution. Specifically, because the questionnaires were primarily distributed through nursing managers, the majority of the responses were from female nurses, which likely contributed to the insufficient participation from doctors and male HCWs. The underrepresentation of male participants and doctors in our study may limit the generalizability of our findings to these groups. Future research should develop more comprehensive recruitment strategies and strive to recruit a more diverse sample to ensure that the experiences and perspectives of all healthcare professionals, including male participants and doctors, are adequately represented. Thirdly, the lack of data on the distribution of hospital types and grades in this study limits our ability to generalize the findings to different healthcare settings. Future research should consider collecting such data to provide a more comprehensive understanding of the factors influencing self-stigma of seeking professional psychological help among healthcare workers. Fourthly, the limitations of this study include the challenges in using the PHQ-9 and GAD-7 alone to fully differentiate between work-related stress and clinical symptoms. Future research should consider additional tools or questions to better address this distinction.

Conclusion

The results of this study indicate that the level of self-stigma of seeking professional psychological help among Chinese HCWs at high risk of depression and anxiety is relatively moderate. The sleeping time, social support, depression symptoms, and anxiety symptoms are important influencing factors. These findings suggest that the presence of self-stigma associated with

seeking professional psychological help may hinder HCWs from obtaining necessary psychological support when needed. This issue may be exacerbated by inadequate sleep, insufficient social support, and the presence of depressive and anxiety symptoms. Addressing these factors can, in turn, promote their professional help-seeking behaviors. This study further elucidates the current situation and influencing factors of self-stigma of seeking professional psychological help among HCWs in China, providing a reference basis for the formulation of strategies to promote professional psychological help-seeking behaviors in the future. To address the mental health needs of HCWs at high risk of depression and anxiety, policymakers should integrate mental health promotion into HCWs' training to ensure continuous education and support, thereby enhancing their understanding of mental health and reducing stigma around seeking psychological help. Establishing convenient and confidential counseling services can alleviate HCWs' concerns when seeking professional psychological help. Additionally, media campaigns and social advocacy should be utilized to enhance public awareness of mental health, reduce stigma, and foster a supportive environment for HCWs. These strategies can mitigate self-stigma, encourage professional help-seeking, and improve the mental health of the healthcare workforce.

Abbreviations

HCWs	Chinese Health Care Workers
SSOSH	Self-Stigma of Seeking Help
PSSS	Perceived Social Support Scale
GAD-7	Generalized Anxiety Disorder-7
GSES	General Self-Efficacy Scale
GLM	Generalized Linear Model
VIF	Variance Inflation Factor

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Clinical trial number

Not applicable.

Authors' contributions

All authors contributed to this manuscript. RR-H, BM-L, YR-L, DL-L and LJ-Z conceived, planned, and designed the study. RR-H, BM-L and YR-L wrote the original draft of the manuscript. DL-L and LJ-Z administrated the project, interpreted the data, and oversaw the writing of the paper; RR-H, BM-L and YR-L performed this experiment, supervised the execution of the study, and checked the quality of data; RR-H, BM-L and YR-L analyzed the data under the supervision of DL-L and LJ-Z; RR-H, BM-L and YR-L revised the manuscript under the supervision of DL-L and LJ-Z. All authors reviewed and approved the submitted manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Before being permitted to participate in the study, all the participants clicked on the online survey link voluntarily and were informed of the purpose of the research, the meaning and data security. In addition, they were informed of their rights and responsibilities. They voluntarily completed and submitted the questionnaire, which is considered as their consent to participate in this study. The research was conducted in accordance with the Declaration of Helsinki. Ethical approval for the study was obtained from the medical ethics committee of the Hunan University of Medicine, in Hunan Province, China (No. 2022/H120020).

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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