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Work addiction in nurses: a cross-sectional correlational study of latent profile analysis and burnout

Xinhui Liang[1,2†], Yue Yin[3†], Lating Zhang[4†], Fang Liu[4], Yao Jia[2], Xiaoxia Liu[5], Mengyi Hu[4], Lijuan Gao[2] and Xue Jiang[2*]

Abstract

Background The nursing profession is known for its high intensity and high pressure, and burnout is prevalent among nurses.In recent years, work addiction has attracted attention as an emerging occupational psychological problem.However, there is a relative lack of research on nurses' work addiction, especially in the case of its underlying features and its relationship with burnout.Identifying the underlying characteristics of nurses' work addiction is of great significance for formulating targeted interventions to prevent and alleviate nurses' burnout and improve the quality of nursing services.

Aim To identify the distinct profiles of work addiction among clinical nurses, examine the demographic factors associated with profile memberships, and then explore the relationship between latent categories of work addiction and job burnout.

Methods A cross-sectional study was conducted in nurses in Northwest China using convenience sampling from January to March 2024.The clinical nurse completed the online completion of the General Information Questionnaire, the Work Addiction Scale, and the Burnout Scale.Latent profile analysis, analysis of variance, chi-square test, binary logistic regression and multiple regression analysis were used to analyze the data.

Results In this study, 550 questionnaires were distributed and 524 questionnaires were effectively recovered, with an effective recovery rate of 95.27%.The detection rate of work addiction was 60.50%.The study identified two possible attributes of nurse work addiction: the low addiction group (level 1) and the high addiction group (level 2).These two groups comprised 67.9% and 32.1% respectively of the entire sample of nurses.The work addiction categories of clinical nurses were found to be influenced by nurses' job titles, employment type, Education background and emotional exhaustion. The dimension of emotional exhaustion in burnout explains 18.70% of the variation in work addiction on its own.

Conclusions There are obvious categorical characteristics of clinical nurses' work addiction, and more than half of clinical nurses' work addiction is at a low level.Identifying demographic" characteristics"and internal and external

† Xinhui Liang, Yue Yin and Lating Zhang contributed equally to this work.

*Correspondence:
Xue Jiang
jiangxue6391@163.com

Full list of author information is available at the end of the article

predictors' of different types' of work addiction can help inform interventions.hospital administrators should actively monitor nurses who exhibit a high degree of work addiction and implement focused interventions to reduce the degree of burnout of nurses and ensure the quality of nursing work.

Keywords Latent profile analysis, Nurses, Burnout, Work addiction

Introduction

Over the last few years, numerous healthcare organizations across the globe have encountered difficulties stemming from economic crises and shortages of care [1]. Over the past three years, the new coronavirus outbreak has exacerbated these issues, resulting in a heightened workload, an influx of patients, and a scarcity of nurses. As a result, the enduring effects of this circumstance have adversely impacted the physical and emotional health of nurses, contributing to burnout within the nursing profession [2, 3]. Burnout is a prolonged reaction to interpersonal stressors and negative emotions in the workplace, manifesting in three primary domains: diminished self-actualization, emotional exhaustion, and personality disintegration [4]. Burnout is a pervasive phenomenon in the healthcare sector. Prior research has found that burnout impacts nearly half of general ward nurses and over 70% of intensive care unit nurses [5]. Furthermore, an examination of the occupational prevalence of burnout symptoms among nurses worldwide was undertaken by Woo et al. in 2019;the study revealed that burnout symptoms were present in 11.23% of nurses worldwide [6]. Consequently, burnout has emerged as a critical concern within the healthcare sector [7].

Work addiction is an abnormal work state in which an individual spends more time at work than usual, which can trigger negative emotions such as anxiety and depression, which can have a negative impact on the individual's social development and physical and mental health [8–9]. Studies have confirmed a positive correlation between work addiction and burnout, i.e., the higher the level of work addiction, the more severe job burnout [10]. Among healthcare workers, work addicts account for 24% of the population, which is higher than that of other occupational groups [11]. Studies have pointed out that the age, qualifications, and education level of nurses may be the influencing factors of work addiction, and their personality traits are also closely related to work addiction [12, 13]. Nurses with a higher propensity for work addiction also experienced increased levels of secondary traumatic stress and burnout, which in turn had a significant negative impact on their quality of life [14, 15]. Ayar et al. [16]. Have established that work addiction has an impact on nurses' work-life balance, and that prolonged exposure to such working hours increases the risk of depression, burnout syndrome, and myocardial infarction.Nurses who work more than 40 h per week are more likely to make medical errors and provide lower-quality treatment [17]. There was a significant positive correlation between work addiction and missed care, indicating that work addiction may result in the omission or significant delay of nursing measures in nurses' work, increase the risk of complications, prolong recovery time, and lead to medical safety incidents, thereby compromising treatment efficacy and quality of life [18]. Nurse job addiction can have far-reaching consequences for the health-care system, including greater training costs due to high turnover rates and decreased organizational performance [19].

This study aims to investigate the factors influencing nurses' work addiction across various clusters, enabling nursing managers to recognize the detrimental effects of work addiction on nurses and to provide more support and work resources to help nurses work efficiently and appropriately.Therefore, it is particularly important to explore the patterns and predictors of nurses' work addiction in order to alleviate their work addiction, alleviate professional burnout, and improve the quality of nursing.

Conceptual framework and study objectives

The work demand-resource model divides job characteristics into two categories: work requirements and work resources, and the model indicates that a mismatch between work requirements and work resources can cause stress on the job [20]. The relationship between work addiction and burnout is explained by the work demand-resource model, which indicates that the demands of work in the work environment (e.g., workload and working conditions, etc.) deplete employees' cognitive and work resource resources, resulting in health problems and energy loss (increased occupational stress) [21]. The explanation of this theory in this study is that through moderate work, people's vitality and potential can be stimulated, and people can find creative happiness in work, so as to have a positive emotional impact. Overwork, on the other hand, (work addiction) increases occupational stress, exacerbates fatigue, and harms physical and mental health [22–24].

Significance of the studyand research gap

So far, there has been little research on nurse work addiction.The disadvantage of existing research is that it is based on the assumption of population homogeneity to explain the relationship between variables in demographic characteristics and work addiction.Considering

the devastating effects of work addiction on nurses, it is essential to reduce information work addiction among nursing staff and investigate whether there are different clusters of work addiction among nurses.Our study will go further to identify the different subtypes of work addiction among Chinese nurses and investigate the characteristics of different subtypes to improve their work efficiency.

Aims and hypotheses

Based on the work demand-resource model and previous research on work addiction, our hypothesis is as follows:

Hypothesis 1 There are subgroup differences in work addiction among nurses.

Hypothesis 2 Sociodemographic characteristics are predictors of nurse work addiction.

Hypothesis 3 Nurses' work addiction is a predictor of burnout.

The theoretical model is shown in Fig. 1.

Procedures

In order to ensure the validity of the questionnaire, we have set the number and time of filling the questionnaire before the official distribution of the questionnaire, and each participant is only allowed to fill out the questionnaire once for no less than 300 s. Before the study formally collected data, the main content and significance of the study were explained to the participants, and the consent of the participants was obtained. Following the completion of the questionnaire collection process, its quality was assessed by two researchers. In the process, questionnaires that were deemed unsatisfactory (e.g., incomplete, filled in for an excessively brief duration, or repetitive entry of the same field) were eliminated at Cautious.

Methods

Design

A cross-sectional correlational design was recruited From January to March 2024.This study followed the STROBE statement [25].

Participants

From January to March 2024, nurses from Northwest Regional General Hospital. The inclusion criteria are as follows: (1): who have worked in clinical positions for at least 1 years(Subjects who have sufficient experience to understand the work challenges and potential stresses) and (2) They willingly participated in this study and provided written informed consent online. Nurses who were rotating and interning were excluded from this study. (Rotational nurses and interns are excluded because they have limited clinical exposure and are less likely to experience work-related stress).

Sample size

The sample size in the study was calculated using Kendall sample estimates as standard [26]. A total of 47 items were included in this study, including 10 items in the General Information Questionnaire, 22 items in the Nurse Work Addiction Scale, and 15 items in the Burnout Scale. The minimum sample size required was 470, and we considered that there may be 10% of invalid questionnaires that end up needing 517 samples.All questionnaires were completed completely, but we found that questionnaires with obvious patterns and logical contradictions were filled out and then eliminated.In the end, 550 questionnaires were distributed and 524 questionnaires were effectively recovered, with an effective recovery rate of 95.27%.

Measurement

Demographic questionnaire

A demographic form was developed by researchers to collect data on participants' gender, Marital status, degree of education, monthly salary, and type of job.).

Maslach burnout inventory-general survey

The Burnout Scale was developed by Schaufeli et al. and translated and Chineseized by Chinese scholar ChaoPing LiKs [27, 28]. The burnout scale has strong validity and reliability and is frequently used in China, where it is appropriate for the cultural environment [29, 30]. There are a total of 15 items in the scale: 5 items assess emotional weariness, 4 things depersonalization, and 6 items lower sense of achievement. The questionnaire items are

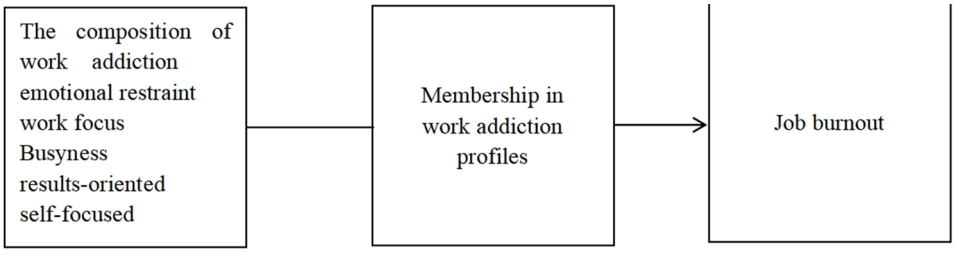

Fig. 1 Simple model of the relationship between the study variables of nurses

evaluated on a 7-point scale, with 0 to 6 points ranging from "never" ~ to "daily". The Cronbach's alpha coefficients for the three dimensions of the scale were 0.88, 0.83 and 0.82, respectively.In this study, the scale has a Cronbach coefficient of 0.875.

Work addiction item scale

The Chinese version of the Work Addiction Scale developed by Robinson and adapted by Chinese scholar Guo Li was used to test nurses' work addiction [31, 32]. The Work Addiction Scale comprises a total of 22 items, with the following five domains comprising the scale: self-focus, emotional restraint, work concentration, mental activity, and achievement-oriented thinking. A total of 22 ~ 88 points, a normal score of 22 ~ 49 points, a moderate addiction score of 50 ~ 58 points, and a high work addiction score of 59 ~ 88 points were obtained by applying the four-level Likert scoring system. 1 ~ 4 points were assigned from "not at all" ~ "always correct".The high and low scores represent the high and low levels of propensity for work addiction.The Cronbach α coefficients of the total scale and the 5 dimensions were 0.832, 0.856, 0.861, 0.856, 0.816 and 0.722, respectively.For this investigation, the scale had a Cronbach coefficient of 0.918 in this study.

Data analysis

SPSS 27.0 and Mplus 8.3 were used to analyze the results of this study.Nurses' demographic characteristics are described as mean ± standard deviation if they are continuous variables, and frequency and percentage if they are categorical. ANOVA and chi-square analysis were used to further identify the influencing factors associated with work addiction in nurses.The analysis of the various classifications of work addiction among clinical nurses was conducted using the Mplus 8.3 software. The number of potential profiles ranged from one to three, and the log-likelihood (LL), Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), sample-adjusted BIC, mean information index (entropy), LMR-based likelihood ratio test, and Bootstrap likelihood ratio test were utilized to evaluate the smaller the AIC, BIC, and BIC. With a significant best fit attained by entropy 0.8, LMR, and BLRT, the optimal model was identified. This test was employed to compare groups on the basis of the classification outcomes of latent categories. By conducting an exhaustive assessment of the aforementioned indicators, the optimal model was identified. Binary logistic regression analysis was utilized to investigate the determinants of work addiction, and hierarchical regression analysis incorporated the demographic attributes of nurses as covariates in the model.A two-sided test was used, with $p < 0.05$ as the test level.

Table 1 Descriptive characteristics of the participants ($n = 524$)

Name of variable	Categories	*N* (%)
Gender	Male	68(12.97)
	Female	456(87.03)
Age	< 30	167(31.87)
	30–50	351(66.98)
	> 50	6(1.15)
Employment type	Contract	384(73.28)
	system	119(22.71)
	Personnel Agency	21(4.01)
Education background	Junior college or below	75(14.31)
	Undergraduate or above	449(85.69)
Marital status	Married	365(69.66)
	Unmarried	154(29.39)
	Widowed or separated	5(0.95)
Monthly income per capita(yuan)	< 4,000	37(7.06)
	4,000–8,000	274(52.29)
	> 8,000	213(40.65)
job title	junior	251(47.90)
	intermediate	240(45.80)
	Senior	33(6.3)

Ethical considerations

The study was in line with the ethical principles required by the Helsinki Official Sayings and was approved by the Ethics Committee of Tangdu Hospital.

Results

Participant characteristics

In this study, 550 questionnaires were distributed and 524 questionnaires were effectively recovered, with an effective recovery rate of 95.27%.The following are the categorical characteristics of the 524 participants: 69.66% were married, 85.69% had a bachelor's degree or higher, 6.30% held senior-level positions.Furthermore, 7% earned less than four thousand yuan per month. Table 1 provides a summary of these characteristics.

Common method deviation

The data obtained in this study were measured by questionnaires filled by participants, and common methodological biases are not avoided. Therefore, the Harmanone factor is used for testing. Exploratory factor analysis tests for the presence of common method bias. In this study, the variation rate of the first common factor interpretation was 30.94%, which Less than 40% cut-off of the total variation explanation, indicating that there was no serious common method bias in the study.

Exploratory latent profile analysis

A two-class model is the most suited LPA. We choose to retain two classes of models in terms of interpretability since their AIC, BIC, and BIC are the lowest. The model

Table 2 Model fit indexes of latent profile analysis

Model	AIC	BIC	aBIC	Entropy	LMRT	BLRT	Category probability
1	24446.433	24633.939	24494.272	—	—	—	—
2	**22890.158**	**23175.678**	**22963.003**	**0.874**	**<0.001**	**<0.001**	**0.689/0.311**
3	22266.160	22649.694	22364.012	0.901	0.1652	<0.001	0.114/0.628/0.258
4	22043.997	22525.545	22166.856	0.881	0.386	<0.001	0.017/0.218/0.559/0.206

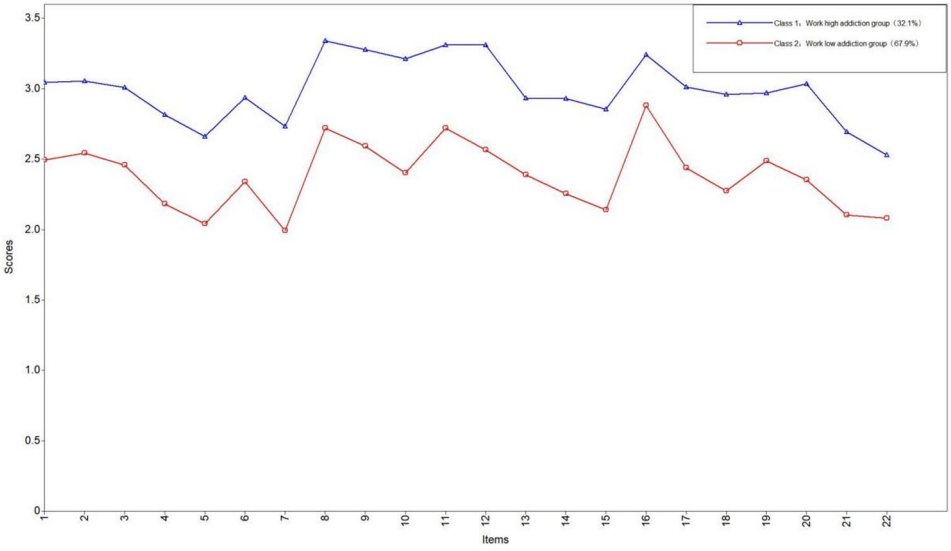

Fig. 2 The latent profiles of the work addiction of clinical nurse

Table 3 The average attribution probability of the potential profile

Potential section category	The probability of belonging to the potential category	
	C1	C2
C1	96.6	3.4
C2	4.2	95.8

was statistically significant, as indicated by the LMR est and BLRT ($P<0.05$).

The LPA model's charts for classes 2 and 3 show that the two nurse courses showed comparable patterns in three dimensions. Out of the two categories of nurses, nurses in category 1 scored highly in two performance kinds; we dubbed this group of nurses, which made up 32.10% of the total, the high addiction group. On the other hand, nurses in category 2 scored poorly, and we dubbed this group of nurses, which made up 67.90% of the total, the low addiction group. Table 2 displays the model fits the index, while Fig. 2 depicts the possible form of the work addiction dimension.Profile 1, which included 32.1% of participants named the "High Work Addiction" group, reported the highest scores for all items.Profile 2 was the "low work addiction group" group, accounting for 67.9%, and the item score was lower than that of profile 1.

Based on Table 3's attribution probabilities for the two latent categories, it can be inferred that each profile has a 95.8–96.6% chance of falling into this category, suggesting that the two latent profiles' model is plausible. The two profiles chosen were the best fit for the classification of work addiction among clinical nurses, according to the data above.

Sociodemographic and burnout characteristic differences in the trait categories of work addiction in nurses.

Univariate analysis of the characteristics of work addiction among various categories of clinical nurses revealed that gender, age, marital status, and monthly income did not differ significantly between the two groups ($P>0.05$). Educational attainment and hiring style differed significantly ($P<0.001$), as did emotional exhaustion, depersonalization, and diminished sense of accomplishment (all $P<0.001$). Please refer to Table 4.

The possible profile of work addiction among clinical nurses served as the dependent variable (low addiction group = 1 and high addiction group = 2), while the statistically significant difference identified in univariate analysis functioned as the independent variable.To represent the dependent variables, the employment method was designated as a dummy variable with the reference term "establishment," while the remaining independent variables retained their initial values.The results showed that the variables that entered the regression model were emotional exhaustion in job burnout (OR = 0.874, $P<0.001$), while the two dimensions of depersonalization

Table 4 Sociodemographic and burnout characteristic differences in the categories of work addiction traits($n=524$)

Variables	Respondents	Low addiction	High addiction	χ2/F	*P*
Gender					
Male	68 (12.98%)	42 (61.76%)	26(38.24%)	1.853	0.206
Female	456 (87.02%)	319 (69.96%)	137 (30.04%)		
Age					
< 30	167 (31.87%)	120(71.86%)	47 (28.14%)	1.006	0.605
30–50	351 (66.98%)	237(67.52%)	114(32.48%)		
> 50	6 (1.15%)	4 (66.67%)	2 (33.33%)		
Employment type					
Personnel Agency	119 (22.71%)	86 (72.27%)	33 (27.73%)	59.506	< 0.001
Contract	384 (73.29%)	257 (66.93%)	127 (33.07%)		
system	21(4.00%)	18 (85.71%)	3 (14.29%)		
Education background					
Junior college or below	188 (82.07%)	50 (26.60%)	138 (73.40%)	244.762	< 0.001
Undergraduate or above	336 (17.93%)	311 (92.56%)	25 (7.44%)		
Marital status					
Married	365 (69.66%)	246 (67.40%)	119 (32.60%)	1.279	0.548
Unmarried	154 (29.39%)	111 (72.08%)	43 (27.92%)		
Widowed or separated	5(0.95%)	4 (80%)	1 (20%)		
Monthly income per capita(yuan)					
< 4,000	213 (40.65%)	143(67.14%)	70(32.86%)	1.861	0.394
4,000–8,000	274 (52.29%)	189 (68.98%)	85 (31.02%)		
> 8,000	37 (7.06%)	29(78.38%)	8(21.629%)		
job title					
junior	251(47.90%)	173(68.92%)	78 (31.08%)	3.592	0.166
intermediate	240 (45.80%)	170 (70.83%)	70 (29.17%)		
Senior	33(6.30%)	18 (54.55%)	15 (45.45%)		
Burnout	51.12 ± 13.50	48.35 ± 11.73	57.27 ± 15.12	53.952	< 0.001
Emotional exhaustion	17.38 ± 6.46	15.70-±5.45	21.10 ± 6.99	91.840	< 0.001
Depersonalization	11.80 ± 5.52	10.72 ± 4.78	14.20 ± 6.28	48.608	< 0.001
A reduced sense of accomplishment	27.52 ± 7.80	26.91 ± 7.80	28.88 ± 7.69	7.196	0.008

Table 5 Multivariate analysis of the potential profile of work addiction in nurses($n=524$)

Variable	*B*	*SE*	Waldχ^2	*P*	OR (95%CI)
Employment type (take system as reference)					
Contract	−0.176	0.267	0.433	0.510	0.839(0.497 ~ 1.416)
Personnel Agency	1.167	0.733	2.532	0.112	3.212(0.763 ~ 13.514)
Education background(take as Undergraduate or above as reference)					
Junior college or below	0.047	0.296	0.025	0.874	1.048(0.587 ~ 1.871)
Burnout					
Depersonalization	−0.126	0.111	1.284	0.257	0.881(0.708 ~ 1.097)
Emotional exhaustion	−0.134	0.017	62.539	< 0.001	0.874(0.846 ~ 0.904)
A reduced sense of accomplishment	0.025	0.014	3.012	0.083	1.025(0.997 ~ 1.054)

and achievement reduction were not included in the regression model, as presented in Table 5.

Stratified regression analysis of work addiction

The outcomes of a hierarchical regression analysis utilizing work addiction as the dependent variable are presented in Table 6. The results indicated that the job title of clinical nurses was included in the regression equation of work addiction ($F=11.899$, $R^2=0.022$, $P<0.001$). Significantly predictive of work addiction in nurses, The dimension of emotional exhaustion in burnout explains 18.70% of the variation in work addiction on its own ($\Delta R^2=0.187$.$P<0.001$). (The full data can be found in the supplementary material Table 6)

Discussion

The following are the study's primary findings

"The purpose of this study was to identify latent profiles of work addiction among nurses and investigate their cross-sectional associations with burnout." Using LPA,

we found two unique subtypes: low addiction (level 1) and strong addiction (level 2).We discovered that 32.1% of nurses had a severe job addiction, whereas 67.90% had a little addiction.Nurses' job titles, emotional exhaustion, and low sense of success ($P < 0.05$) all had an impact on their potential work addiction categories. This study found that burnout nurses tend to have high levels of work addiction, which can be utilized to predict nurse work addiction. These findings emphasize the diversity of work addiction and its varying effects on burnout characteristics."

Diversity exists in clinical nurse work addiction

We found significant heterogeneity in the sample for clinical nurse work addiction in this study. The rationale behind this is as follows: China has demonstrated a renewed dedication to delivering superior patient care in recent years. As a result, clinical nurses are burdened with not only managing substantial workloads but also devising innovative approaches to ensure the provision of high-quality care. Furthermore, the escalating demands of their positions have compelled nurses to dedicate more time and effort to their duties, giving rise to the phenomenon known as nurse work addiction [33, 34]. Kunecka D. discovered in a 2018 survey of Polish nurses that they were at a high risk of developing work addiction, with 6% of nurses affected by work addiction and 40% likely to develop workaholism in the future [13]. Our study found that 39.5% of nurses did not have work addiction, with a low course of work addiction constituting the majority.A consistent condition of work addiction has the potential to result in adverse work-related incidents, which in turn could compromise the standard of care provided [35]. We speculate that cultural factors may play a key role in explaining these results. For example, Cai D et al. [36] pointed out that nurses' attitudes and behaviors may vary significantly across different cultural backgrounds, which can also have different effects on work outcomes. In Chinese culture, overwork may be seen as a sign of dedication and responsibility, which may lead to healthcare workers being more likely to develop work-addictive behaviors. In European and American cultures, work-life balance may be more valued, reducing the risk of work addiction and burnout.

Potential profiling influencing factors of work addiction in clinical nurses

Our study used potential profiling to classify nurses' work addictions into two categories: low addiction group (category 1) and high addiction group (category 2). Although less than 50% of nurses in the high-work addiction group are nurses, it is the kind of population that we care managers need to pay attention to.Previous studies have shown that female nurses have an average score higher on work addiction than male nurses, which may be due to the fact that women have to shoulder not only heavy departmental tasks, but also family tasks and are unable to better balance work and life, female nurses tend to work harder, and work and family pressures are greater than those of male nurses, resulting in more serious work addiction [37, 38]. Our findings suggest that nurses with advanced job titles have higher levels of work addiction.

According to studies, the majority of Chinese nurses with senior professional titles are promoted after completing their college degrees. However, due to increased hospital requirements, nurses with senior professional titles also have to demonstrate that they have accomplished scientific research, which is more difficult for them. As a result, they frequently spend a lot of time in this area, and the tasks they perform at work are increasingly complex and tedious, which causes overwork and continuity [39–41]. Numerous elements, including as socioenvironmental elements and individual-related elements like work environment and personal traits, can have an impact on nursing addiction [42, 43]. The results of this study, which examined the clinical work addiction of nurses from the perspective of the three aspects of job burnout (Table 4), indicated that depersonalization and a diminished sense of accomplishment were also factors influencing work addiction in nurses. A person experiencing emotional exhaustion at work is one who is mechanically busy with daily tasks and is compelled to immerse themselves in their work. It is characterized as a state of work in which people are emotionally overwhelmed for an extended period of time and resemble an emotionless machine [44].

Correlation with work addiction

The results of the multiple linear regression analysis revealed that the dimension of emotional exhaustion independently accounted for 18.70% of the variance in work addiction. This finding underscores its significant role as a predictor, demonstrating that elevated levels of emotional exhaustion correspond with heightened propensities toward work addiction [45]. Barreto et al. [46] showed that individuals with overwork and compulsive work were more likely to experience emotional exhaustion and dehumanization, further confirming the results of this study.Individuals with emotional exhaustion may experience decreased occupational effectiveness (e.g., decreased quality of task completion, impaired decision-making ability), impaired interpersonal interactions, and persistent chronic fatigue, irritability, and negative cognitive patterns, which may further develop into maladaptive work behaviors [47]. Extant research consistently demonstrates a positive correlation between heightened exhaustion levels and work addiction propensities [48, 49]. Murray DD et al. [50] showed that support systems

or management styles may significantly affect nurses' job performance.A supportive management style can reduce burnout rates, while a high-pressure management style may exacerbate work addiction and burnout. These findings underscore the critical importance of prioritizing nurses' emotional resource recovery—through interventions such as optimized rest periods and heightened perceived self-efficacy—as more effective strategies for curbing work addiction tendencies than mere reductions in working hours.

In order to attain work-life balance, nurses should help themselves to change their perspective and logically prioritize their professional and personal responsibilities. This will help to prevent and lessen the likelihood that they will become addicted to their jobs [51]. Research has shown that the implementation of meditative awareness training can lead to various positive outcomes, including alleviation of psychological distress, job satisfaction, and symptoms of workaholism [52]. Hence, through the implementation of meditative awareness training, clinical nurses may be able to mitigate and prevent psychological issues stemming from work addiction, including anxiety and depression. This can be achieved through the enhancement of working conditions and organizational structure, ultimately leading to increased job satisfaction [53].

Limitations

There are certain restrictions on our research. First, our research team did not execute a nationwide random sample and instead surveyed clinical nurses in tertiary hospitals located in a single province. Second, our study was conducted online, and the results may not be entirely objective. Third, we did not explore the causal relationship between burnout and work addiction, and did not combine the burnout groups to explore. These limitations limit the extrapolation of our results. We will conduct a broader sampling in future studies to explore the relationship between work addiction and burnout in depth by integrating various burnout subtypes. In addition, a longitudinal study of nurses' work addiction and burnout should be considered in the future to better understand the dynamic relationship between the two. The next step in this study will be to investigate how different potential categories of work addiction affect burnout through psychological/physiological pathways. To further reveal the heterogeneous mechanism of work addiction subtypes, and provide targets for precise intervention.

Conclusions

Work addiction is becoming more common in the field of nursing. The results of this cross-sectional survey found that there were different types of work addiction in Chinese nurses, and different characteristics of work addiction would have a negative impact on nurses' burnout.Nurses can prioritize urgent duties by employing the "Four Quadrants of Time Management" method, avoid excessive overtime for non-urgent work, and allocate a designated time each week for sports, social, or artistic activities to avoid focusing on work.The senior nursing managers of hospitals should pay attention to the differences in the work addiction status of nurses, and take targeted measures to reduce the degree of nurses' work addiction, For example, organizations can reduce the risk of nurse job addiction and burnout by providing flexible work arrangements, establishing psychological support systems, setting realistic work goals and boundaries, encouraging effective communication and seeking support, focusing on employee well-being and health, and conducting regular self-reflection and assessments. At the workplace management level, measures include the prohibition of consecutive night shifts or over-long shifts (e.g., limiting working hours to ≤ 40 h per week), the implementation of regular anti-work addiction training, and the substitution of "working hours" with "work efficiency" as a core measurement indicator.

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Author contributions

LXH, YY and ZLT authored the manuscript's text, LF, LXX and HMY were responsible for distributing questionnaires. Both JY and GLJ contributed to the composition and revision of the article. JX contributed to the data processing and analysis. All authors approved of the version of the article that was submitted for publication.

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Data availability

The raw data of this study can be obtained from the corresponding author Jiang Xue in this paper upon reasonable request.

Declarations

Ethics approval and consent to participate

This study is in line with the ethical principles required by the Declaration of Helsinki, and the study has been approved by the Ethics Committee of Tangdu Hospital.All subjects were informed of the study prior to the survey and they had the right to withdraw at any time during the study.Signed informed consent was obtained from all participants.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

[1]Department of Anesthesiology, Tangdu Hospital, Fourth Military Medical University, No. 569 Xinsi Road, Xi'an, ShanxiProvince, China
[2]Department of Neurosurgery, Tangdu Hospital, Fourth Military Medical University, No. 569 Xinsi Road, Xi'an, Shanxi Province, China

[3]School of International Education, Hubei University of Chinese Medicine, Wu han, Hubei Province, China
[4]School of Nursing, Shaanxi University of Chinese Medicine, Shaanxi Province, Xian yang, China
[5]Dongtai People's Hospital, Dong tai, Jiangsu Province, China

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