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Coping strategies for nurse burnout：Combination of psychological counselling and institutional safeguards

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Abstract

With the increasing complexity of the healthcare environment, the issue of nurse burnout has gradually received attention. Based on the operating room, emergency centre, ICU and outpatient clinic of a tertiary hospital in Guangzhou City, this study explores the relationship between the scheduling system, psychological support and nurse burnout, and provides a basis for the development of intervention strategies; this study uses Burnout Theory and Demand-Control-Support Model as the theoretical basis for designing a questionnaire containing three dimensions: scheduling system, psychological support and nurse burnout. Burnout Theory and Demand-Control-Support Model As the theoretical basis, this study designed a questionnaire containing three dimensions: scheduling system, psychological support and burnout. Descriptive statistics, reliability and validity tests, and correlation analyses were conducted using SPSS 22.0 on 124 nurses; the study showed that nurses generally had a high level of burnout (mean value 4.82), scheduling system had a significant negative correlation with psychological support ($r=-0.390$, $p<0.01$), scheduling system had a weak negative correlation with burnout ($r=-0.212$, $p<0.01$), and scheduling system had a weak negative correlation with burnout ($r=-0.212$, $p<0.01$). 0.212, $p<0.05$), and a non-significant correlation between psychological support and burnout ($r=0.36$, $p=0.688$), proving that the current psychological support measures have limited effect or are insufficient to meet the needs of the nursing workforce; the existing scheduling arrangement leads to work-life imbalance, which increases the need for psychological support; however, the existing psychological support measures have not yet been effective in improving burnout.

1. Introduction

Nurse burnout has become a major concern for healthcare systems worldwide. Burnout is usually manifested as emotional exhaustion, dehumanising tendencies and a reduced sense of personal accomplishment, which not only affects nurses' physical and mental health but also reduces the quality of care and increases the incidence of medical errors (Maslach& Leiter, 2016) In China's tertiary hospitals, which are high-stress work environments, the problem of nurse burnout is particularly prominent due to the large number of patients and high work intensity. Zhang Qian et

al. (2021) conducted a questionnaire survey of 700 nurses in 13 general hospitals, which showed that about 80% or more of the nurses suffered from moderate to severe burnout. Zhong Qin et al. (2019); Min A et al., (2019) showed that excessive frequency of night shifts and unreasonable working hours are one of the important causative factors of burnout among nurses. In addition, nurses have limited channels for emotional support and psychological counselling, resulting in some nurses being unable to effectively cope with work pressure, resulting in low mood, decreased efficiency, and even a tendency to leave their jobs (Guo Na, 2022).

The current methods to deal with nurse burnout include psychological counselling and system optimisation. Psychological counselling, such as group psychotherapy and positive stress reduction therapy, has a certain effect in the short term, but its long-term impact is limited due to the systemic problems of the nursing work environment (Liu He, 2017; Yanrui et al., 2021). However, the lack of institutional safeguards, such as unfair or inflexible scheduling, is often cited as the underlying causative factor of burnout. Therefore, it isn't easy to comprehensively alleviate nurse burnout by relying only on a single instrument.

This study takes nurses in a tertiary hospital in Guangzhou City as the research object, The operating room, emergency centre, ICU and outpatient clinic, operating room, emergency centre and ICU are relatively high work intensity and technical requirements of a hospital, which is a representative group of nurses; outpatient nurses don't need to be on night shifts. The nurses in these four departments are representative of the hospital as a whole and reflect the main content of this study. Nurses need to deal with complex nursing tasks and patients' emotions, and at the same time face the physiological and psychological double pressure caused by irrational scheduling. The aim is to explore the comprehensive coping strategy combining psychological counselling and institutional safeguards, analyse the advantages of synergy between the two to alleviate nurse burnout, and put forward practical suggestions to provide a reference for optimising nursing management.

2. Literature Review

Nurse burnout is a prominent problem in the current global healthcare system, which is mainly manifested by emotional depletion burnout, dehumanising tendencies and a decrease in the sense of personal accomplishment (Yang Y, Hayes J A, 2020). This problem not only affects nurses' career development and psychological health, but also reduces the quality of nursing-level services and patient satisfaction, and even leads to healthcare safety concerns (Geuens N, et al. 2021; Song, G., & Landicho, L. C., 2023).

2.1 Causes of Burnout

The causes of professional burnout in nurses are mainly manifested in the conflict between high-intensity work status and low autonomy life freedom, at the same time, they cannot get due humanistic care and material protection in their work, and the double pressure of physiology and psychology cannot be released to produce professional burnout emotions. Job stress is one of the causes of professional burnout, and Bourbonnais R et al. (1998) showed that high workload, low autonomy, and poor interpersonal relationships are the main predictors of burnout. akovljevic B et al. (2021) found that nurse burnout includes job stress, workload, lack of support, tense work environment and work-family conflict. Khan et al. (2019) found that working more than two nights a week in Lahore, working more than 40 minutes of overtime per day, and working in the operating theatre led to burnout. Role conflict and role ambiguity are also important factors contributing to burnout among nurses, Zubairi and Noordin (2016) stated that low job satisfaction,

long working hours, poor co-worker relations and lack of autonomy were associated with an increased risk of burnout. Lack of social support has also been identified as an important factor in burnout. Ayala and Carnero (2013) found that higher emotional exhaustion scores were associated with having children, while lower personal accomplishment scores were associated with having children. Health hazards and lack of resources in the work environment can also affect nurse burnout. For example, Colindres et al. (2018) found that an increased imbalance in reward for effort was associated with an increased risk of burnout. Burnout is not only detrimental to nurses‘health (e.g., depression, and anxiety) but also significantly reduces the quality of care and patient safety (Dall'Ora et al., 2020) Kelly et al. (2020) concluded that emotional exhaustion was significantly associated with nurses’ intention to leave the organisation.

2.2 Intervention role of counselling

Counselling aims to enhance nurses‘psychological capital (e.g., resilience, optimism) to cope with work stress, and several studies have shown that Positive Thought-Based Barometric Pressure Therapy (MBSR) and Behavioural Cognitive Therapy (CBT) have shown significant effects in reducing nurses’ burnout levels. Multiple quantitative meta-analyses have also supported the significant effectiveness of the Positive Mindfulness-Based Approach in reducing psychological symptoms such as stress, anxiety, depression, and burnout (Ruiz-Fernández et al., 2019; Spinelli, Wisener, & Khoury, 2019).Suleiman -Martos N, et al. (2020) showed through a systematic review and meta-analysis that a positive thinking programme was effective in decreasing nurses' emotional exhaustion (EE) scores and increasing work-related accomplishment (PA) scores, but had a non-significant effect on work drive (D). Tang et al. (2023) showed that positive thinking training significantly reduced emotional exhaustion and dehumanisation in nurses. Positive thinking interventions come in a variety of forms, including positive stress reduction (MBSR), compassionate positive thinking meditation, body scanning, and positive breathing (dos Santos et al., 2016), and these interventions not only help to reduce burnout, but also enhance self-compassion, empathy for others, a sense of belonging, and overall positive emotions (Bianchini C, Copeland D, 2021). A study by Verweij H, et al. (2018) observed a sustained reduction in burnout scores up to 12 months after the intervention, however, it was also noted that some studies failed to observe significant sustained improvements due to low adherence by the nurses participating in the study (Mealer et al., 2014). In addition, cognitive behavioural therapy (CBT) enhances coping by reframing negative thinking (Payne N, 2001). Although counselling is effective for individual stress management, relying on this approach alone makes it difficult to address systemic problems at the organisational level, and irrational scheduling and high workloads cannot be changed through counselling alone (Sharin I A, et al., 2024).

2.3 The role of institutional safeguards

Institutional safeguards play a crucial role in alleviating burnouts. Laschinger & Fida (2014) showed that positive management styles of leaders and flexible work arrangements can help to improve nurses‘ mental health; a public tertiary hospital in Jilin City significantly improved nurses’ job burnout and improved patient satisfaction and quality of care by implementing a motivational campaign of ‘Improve self-skill, show self-styling ‘ motivational activities significantly improved nurses' burnout and increased patient satisfaction and quality of care (Li, 2013); also providing adequate social support, improving the work environment, and managing workloads are considered effective institutional safeguards (Lambrou P, et al., 2014). High-quality organisational support (e.g., work environment optimisation, co-worker collaboration) significantly reduces the level of burnout (Cao et al., 2016); Kapu A N, et al.

(2019); Klein C J, et al. (2020) studies point out that fair management support, good leadership, organisational promotion of health and well-being, and work-life balance are the burnout; Sergey L E E, et al (2020) in a study in Pakistan, workplace support is critical in mitigating burnout, and when leadership support is high, secondary trauma and willingness to change shift schedules are reduced. Although institutional optimisation improves the work environment, it is difficult to change the psychological state of nurses in the short term and therefore needs to be combined with counselling to form a two-way intervention mechanism (Taormina & Law, 2000).

Intervention strategies that combine counselling and institutional support have synergistic effects. Research has found that psychological capital partially mediates the relationship between organisational support and burnout (Peng et al., 2013). In addition, institutional reforms (e.g., rational scheduling system) provided nurses with sufficient recovery time, while counselling helped them better adapt to work stress, and this combined model significantly reduced turnover and burnout (Luo et al., 2022). Although studies have explored the roles of psychological counselling and institutional safeguards in burnout, the specific implementation pathways of the combination of the two still need further research, as to how to systematically integrate the two strategies in actual nursing scenarios, as well as the evaluation of their long-term effects, are important future research directions. This study focuses on the combination of psychological counselling and institutional safeguards to improve the phenomenon of nurse burnout.

3. Research Methodology

3.1 Theoretical basis

This study develops a relevant questionnaire based on the Burnout Theory proposed by psychologist Christina Maslach (1981) and the Demand-Control-Support Model proposed by psychologist Karasek (1979). Christina Maslach emphasised that burnout is caused by chronic job stress and emotional exhaustion, which usually manifests itself as a result of factors such as emotional exhaustion, dehumanisation (establishing a detached relationship with the person with whom you are working), and a low sense of personal accomplishment, Karasek's research found that stress in the workplace not only stems from the workload (demand) but is also affected by the employee's ability to control the work (control) and the job support (support), a work environment with high job demands, low control and insufficient support leads to higher stress and burnout.

Nurses inevitably need to work night shifts due to the scheduling system, holidays and weekends also need to be on duty and lost due to personal time; in the work not only have to withstand the high intensity of work pressure and the double layer of pressure at any time to rescue the patient and lead to a high degree of personal mental tension; and thus lose the passion for the work of the sense of belonging, resulting in a negative mood of burnout.

3.2 Questionnaire Setting

The questionnaire is a total of 13 questions on a five-point Likert scale, the first module is personal information, and the second module is divided into three dimensions: the first dimension measures the scheduling system; the second dimension measures the need for psychological support; the third-dimension measures burnout. The questionnaire setup is shown in Table 1:

Table 1. Questionnaire set-up

Basic Personal Information

No.	Question	Option				
1	Gender	Male	Female			
2	Age group	18-25	26-30	31-35	36-40	＞40
3	Years of working experience	＜1	1-3	4-6	7-10	＞10
Variable Question						
No.	Question					1-5
Q1	The scheduling system causes my mood and working conditions to be low, especially on the night shift.					
Q2	The current scheduling system makes me feel unable to balance my work and personal life.					
Q3	Reducing night shifts and increasing breaks would allow for better rejuvenation.					
Q4	I think counselling would help my work ethic.					
Q5	I would like the hospital to provide more psychological support and emotional counselling to nurses.					
Q6	Group counselling would help me reduce stress at work more than individual counselling.					
Q7	I would try to relieve my stress at work by using methods such as meditation or deep breathing.					
Q8	I would like to get advice and support on career development.					
Q9	I often feel emotionally drained at work .					
Q10	I am overburdened with the work I complete and usually struggle to get everything done.					

Remarks: Questions related to scheduling system: Q1, Q2, Q3 explore nurses‘ perception of scheduling system and analyse how scheduling affects their work status, work-life balance and feelings of burnout; Questions related to psychological support needs: Q4, Q5, Q6, Q7, Q8 explore nurses’ needs for psychological counselling, emotional support and career development, reflecting their needs and psychology for alleviating burnout; Burnout-related Questions: Q9, Q10 explored nurses' feelings of burnout and analysed their workload, energy drain and emotional exhaustion.1 as strongly disagree, 2 as disagree, 3 as average, 4 as agree, 5 as strongly disagree.

4. Data Analysis

The main analytical tool used in this study was SPSS version 22.0 software.

4.1 Descriptive statistical analysis

The survey was filled out anonymously by 129 nurses in the operating room, emergency centre, ICU and outpatient clinic of a tertiary hospital in Guangzhou City, and 4 invalid questionnaires with the same options were manually eliminated, and 124 valid questionnaires were retrieved, with an effective rate of 96.1%. The basic information of the respondents is shown in Table 2:

Table 2. Basic information of respondents

Name	Option	Frequency	Percentage (%)	Cumulative percentage (%)

Gender	Male	40	67.7	67.6
	Female	84	32.3	100
Age	18-25	40	32.3	32.3
	26-30	67	54.0	86.3
	31-35	13	10.5	96.8
	36-40	3	2.4	99.2
	＞40	1	0.8	100
Years of working experience	＜1	2	1.6	1.6
	1-3	40	32.3	22.9
	4-6	76	61.3	95.2
	7-10	4	3.2	98.4
	＞10	2	1.6	100
Total		**124**	**100**	

In the descriptive statistical analysis, the author compiled and analysed the basic information of the respondents. The results showed that the proportion of male nurses (32.3%) was higher than that of female nurses (67.7%) among the respondents. This reflects the higher physical demands on nurses in specific departments such as operating theatres, emergency centres and ICUs, and male nurses may be more inclined to take on this type of high-load, high-intensity work. In terms of age, the main age groups of respondents were concentrated between 26-30 years (54%) and 18-25 years (32.3%) in line with the age distribution of nurses in high-intensity work environments. In terms of years of working experience, 61.3% of the nurses had 4-6 years of working experience. In a high-stress clinical environment, nurses need to have a certain amount of work experience to cope with the challenges, with a relatively balanced proportion of young and senior nurses. To further understand the characteristics of the overall sample, descriptive analyses of three variables (as shown in Table 2-1), scheduling system, psychological support, and burnout, were conducted next.

Table 2-1. Table of descriptive analysis of variables

Name	Number of measurement questions	Minimum value	Maximum value	Mean value	Standard deviation	Skewness	Kurtosis
Scheduling system	3	4	5	4.57	0.291	-0.592	-0.231
Psychological support	5	4	5	4.74	0.132	-0.609	-0.547
Burnout	2	4	5	4.82	0.265	-1.607	0.84

For the evaluation of the three dimensions of the scheduling system, psychological support and burnout, the mean scores of all items were high, and the skewness and kurtosis indicators showed that the respondents' answers to the questionnaire tended to be consistent, with overall more positive perceptions of the scheduling system and psychological support but more negative perceptions of burnout, indicating that a certain degree of burnout was prevalent in the nurse population.

4.2 Reliability analysis

Table 3. Reliability Analysis

Dimension	Number of items	Sample size	Cronbach's alpha coefficient
Scheduling system	3	124	0.75

Psychological support	5	124	0.72
Burnout	3	124	0.74

Reliability analyses were conducted to test the internal consistency of the questionnaire by calculating the Cronbach alpha coefficient. The results showed that the Cronbach alpha coefficients for the scheduling system (α = 0.75), psychological support (α = 0.72), and burnout (α = 0.74) were all greater than 0.7. According to Nunnally (1978), Cronbach alpha coefficient greater than 0.7 indicates that the questionnaire has good reliability and can effectively measure the dimensions under study. This means that the individual question items have a high degree of internal consistency within the same dimension and can reflect more accurately the factors associated with nurse burnout.

4.3 Validity Analysis

This study focuses on the structural validity of the questionnaire, which refers to the degree of fit between the structure of the questionnaire and the expected theoretical structure. The structural validity of the questionnaire was analysed using exploratory factor analysis. The results of the analysis are as follows. As shown in table 4:

Table 4. KMO and Bartlett's test

KMO value		0.564
Bartlett sphericity test Approximate square card	rough square	368.527
	df	45
	p-value	0.000

In this paper, KMO and Bartlett's test of sphericity will be used to test the suitability of the data for factor analysis. The validity analysis was conducted to verify the structural validity of the questionnaire through the KMO value and Bartlett's test of sphericity. The KMO value of 0.564 > 0.5 indicates that the data is suitable for factor analysis. The result of Bartlett's test of sphericity is significant (p = 0.000), which further verifies that the data's correlation is suitable for factor analysis.

Table 4-1. Variance explained

No.	Initial eigenvalue			Extracted loadings sum of squares			Rotated loadings sum of squares		
	Total	Variance %	Cumulative %	Total	Variance %	Cumulative %	Total	Variance %	Cumulative %
Q1	2.802	28.021	28.021	2.802	28.021	28.021	2.333	23.326	23.326
Q2	1.719	17.192	45.213	1.719	17.192	45.213	1.961	19.605	42.931
Q3	1.490	14.902	60.115	1.490	14.902	60.115	1.718	17.183	60.115
Q4	1.111	11.112	71.227						
Q5	0.989	9.887	81.113						
Q6	0.582	5.817	86.931						
Q7	0.428	4.280	91.210						
Q8	0.369	3.687	94.897						
Q9	0.309	3.093	97.991						
Q10	0.201	2.009	100.00						

Extraction method: Principal Component Analysis

The variance explained ratio indicates that the three factors extracted cumulatively explained 60.115% of the total variance, which meets the requirements of factor analysis. The contribution rate of the first factor is 23.33%, the second is 19.61% and the third is 17.18%, the total variance

contribution rate is more than 60%, which indicates that the questionnaire is well structured to better reflect the relationship between burnout, scheduling system and psychological support.

4.4 Correlation analysis

In order to study the correlation of each dimension of scheduling system, psychological support and burnout, and each dimension is a fixed-order variable, therefore, this study used Spearman's correlation coefficient to analyse each dimension, and the results obtained are shown in Table 5:

Table 5. Pearson correlations

Dimension		Scheduling system	Psychological support	Burnout
Scheduling system	Correlation coefficient	1		
	p-value (two-tailed)			
	N	124		
Psychological support	Correlation coefficient	-0.390**	1	
	p-value (two-tailed)	0.000		
	N	124	124	
Burnout	Correlation coefficient	-0.212*	0.36	1
	p-value (two-tailed)	0.18	0.688	
	N	124	124	124

**Significant when correlated at a confidence interval (two-sided) of 0.01.

*Significant when correlated at a confidence interval (two-sided) of 0.05.

There was a significant negative correlation between the scheduling system and psychological support ($r = -0.390$, $p = 0.000$), which implies that irrational scheduling systems may lead to an increased need for psychological support among nurses; there was a weak negative correlation between scheduling system and burnout ($r = -0.212$, $p = 0.018$), which suggests that irrational scheduling may lead to an increase in burnout, but the correlation is not strong. The correlation between psychological support and burnout was positive ($r = 0.36$) but not significant ($p = 0.688$), which indicates that the scope and manner of implementation of psychological support provided by the unit has not yet been able to effectively reach the needs of all nurses, which is a side effect of the nurses' need for psychological support.

The sample for this study was selected from four departments, namely the operating room, emergency centre, ICU, and outpatient clinic of a tertiary hospital in Guangzhou. The nature of work and environment in these departments is unique, which has an impact on the correlation between the scheduling system and burnout. Operating theatres, emergency centres and ICUs are high-stress, high-intensity work environments where nurses need to be on call at all times to respond to emergencies and critically ill patients, working at a fast pace and with a high degree of mental stress. This working condition makes nurses more prone to burnout when faced with unreasonable scheduling. However, due to the special nature of work in these departments, the scheduling system may be relatively fixed and difficult to make substantial adjustments, which to

a certain extent restricts the impact of the scheduling system on burnout, thus leading to the weakening of the correlation between the two. For example, prolonged night shifts or continuous work may lead to extreme physical and psychological exhaustion of nurses, which in turn exacerbates burnout, but the fixed nature of the scheduling system prevents this effect from fully manifesting itself. The work characteristics of outpatient departments are different from those of the three departments mentioned above. Outpatient nurses mainly face a large number of outpatients, and their work is relatively tedious, requiring frequent communication, explanation and guidance. Although the work pressure in the outpatient department is relatively low, the workload is large and the mobility of patients is high, which also brings some psychological pressure to the nurses. In the outpatient department, the scheduling system is more flexible and nurses can make appropriate adjustments according to their work pace and patient flow. This relatively flexible scheduling may have alleviated nurses' burnout to some extent, making the correlation between the scheduling system and burnout less significant.

In summary, descriptive statistical analyses revealed the basic situation of the survey respondents and their attitudes towards the scheduling system, psychological support and burnout. Reliability and validity analyses verified the reliability and applicability of the questionnaire, while correlation analyses revealed the interrelationships among the variables, especially the effects of scheduling systems and psychological support on burnout. The results of the data analysis provide a theoretical basis for the subsequent in-depth exploration of the intervention strategy of combining psychological counselling and institutional security.

5. Discussion and Suggestions

In this study, the author conducted an in-depth analysis of the influencing factors of nurses' burnout, mainly considering the role of the two dimensions of the scheduling system and psychological support and comparing them with the relevant studies at home and abroad. Through the analysis, the author draws some important conclusions and puts forward several recommendations for improvement on this basis.

5.1 Relationship between scheduling system and burnout

According to Maslach and Leiter's (2016) burnout theory, burnout is mainly manifested as emotional exhaustion, dehumanisation, and reduced personal accomplishment. In this study, the weak negative correlation between the scheduling system and burnout ($r = -0.212$, $p = 0.018$) suggests that an irrational scheduling system may lead to emotional exhaustion and work-life imbalance among nurses, which may increase burnout. This is consistent with the burnout theory that mentions that chronic work stress and emotional exhaustion lead to burnout. Also in this study, the irrationality of the scheduling system increased workload (demand), while nurses had limited control over scheduling (control) and inadequate psychological support (support), which together led to increased burnout. Prolonged night shifts, overloaded work hours, and irrational scheduling often lead to burnout among nurses (Xiao, 2014; Abbaszadeh R, et al., 2024)\. There is a significant association between nurses' working hours, scheduling arrangements, and burnout (Maslach & Leiter, 2016); this echoes the findings of Şenol Çelik S, et al. (2024), who found that psychological support is a key factor in reducing burnout among nurses. Hospitals should rationalise and optimise the scheduling system to avoid long night shifts and excessive overtime for nurses. Developing a flexible scheduling plan and personalising it according to the individual needs of nurses will help alleviate nurse burnout. At the same time, hospitals can introduce advanced scheduling management systems to ensure the fairness and transparency of scheduling

and reduce the negative emotions caused by unfair scheduling.

5.2 Relationship between psychological support and burnout

According to burnout theory, emotional exhaustion is a core component of burnout, and psychological support can effectively alleviate emotional exhaustion. In this study, the correlation between psychological support and burnout was positive ($r = 0.36$) but not significant ($p = 0.688$). This suggests that although psychological support is theoretically important in alleviating burnout, its practical implementation is limited. This is related to the manner and scope of implementation of psychological support for nurses in hospitals. The need-control-support model emphasises the importance of job support. In this study, the effect of psychological support as part of work support was not significant because the type and manner of support failed to meet the actual needs of nurses. This resulted in its insignificant mitigating effect on burnout. Nurses‘ burnout is not only a personal problem, it is also closely related to social support, work environment and management system (Choi et al., 2024). Salazar J et al. (2021) study emphasised that the establishment of a multi-level psychological support system, such as co-workers’ support, leaders‘support, and professional counselling can help to alleviate nurses’ burnout effectively. To improve the effectiveness of psychological support, hospitals should build a more comprehensive and diversified psychological support system. On this basis, in addition to traditional psychological counselling services, emotional support and mutual assistance among colleagues should be strengthened to create a more supportive and friendly working environment. At the same time, hospital administrators should communicate with nurses regularly to understand their psychological needs and provide timely support. In addition, it is recommended that hospitals provide regular mental health training for nurses to help them recognise the early symptoms of burnout and master methods of self-regulation to avoid the accumulation of negative emotions.

5.3 Advantages of collaboration between scheduling system and psychological support

According to burnout theory, burnout is the result of chronic work stress and emotional exhaustion. The irrationality of the scheduling system increases workload and psychological stress, which is further exacerbated by inadequate psychological support. The results of this study suggest that the combination of a scheduling system and psychological support can be more effective in alleviating burnout among nurses. The demand-control-support model emphasises the balance of workload, control and work support. In this study, the optimisation of the scheduling system can reduce workload (demand) and increase nurses' ability to control their work (control), while the enhancement of psychological support can increase work support (support). This multidimensional intervention can alleviate nurse burnout more comprehensively. Optimising the scheduling system alone can reduce nurses' physiological fatigue, but without the appropriate psychological support to complement it, nurses may still feel emotionally depleted and disengaged at work. The enhancement of psychological support, even if it can alleviate some psychological stress, may lead to nurses struggling to recover psychologically from physical fatigue if the scheduling system is not reasonable. Therefore, the synergy between the scheduling system and psychological support is a more comprehensive strategy to address nurse burnout.

5.3.1 Personalised Scheduling Arrangements

Hospitals should provide individualised scheduling arrangements (Zheng, S., & Han, M., 2024) that consider nurses' years of experience, personal health status and family responsibilities to reduce the burden of night shifts and intense work on nurses. This can increase nurses' control over their work (control) and reduce workload (demand).

While the scheduling system is being optimised, hospitals should also consider scheduling during special holidays and periods of high demand to ensure that nurses' work pressures are distributed appropriately.

5.3.2 Establishing a systematic psychological support system

Hospitals should set up special mental health departments to provide regular counselling, emotional support and career development planning. This can enhance work support (support) and relieve nurses' emotional stress.

Regular mental health lectures, group counselling and other activities should be conducted to enhance nurses' mental resilience. Hospitals should also provide nurses with individualised psychological counselling services to help them cope with emotional problems in high-pressure environments (Zheng, S., Song, M., & Han, M. ,2024).

5.3.3 Establishment of collaborative working mechanism

The adjustment of the scheduling system and the enhancement of psychological support should form a linkage mechanism to ensure that psychological support can intervene promptly when nurses are under high work pressure. For example, when implementing the new scheduling system, hospitals can simultaneously launch psychological support programmes to ensure that nurses can receive emotional support and psychological counselling when adapting to the new work arrangements.

5.4 Limitations of the Study and Directions for Improvement

This study provides a theoretical basis for exploring the intervention strategies for nurse burnout, but there are still some limitations. The sample of this study mainly originated from nurses in the department of a tertiary hospital in Guangzhou, which is a small sample size and may not be representative of the groups of nurses in other regions or different types of hospitals across the country. Future studies could expand the sample to include data from nurses from different regions and different types of hospitals to improve the generalisability and extensiveness of the results. This study relied mainly on the questionnaire method, and the subjective bias of the respondents may have influenced the results. Future studies could incorporate methods such as interviews or behavioural observations to further validate the findings.

6. Conclusion

Through the study of nurse burnout in the department of a tertiary hospital in Guangzhou, this study found that nurse burnout is mainly influenced by various factors such as the scheduling system. The results of this study not only deepen the understanding of the causes of nurse burnout, but also provide practical suggestions for hospital administrators and policymakers to improve the situation. The study shows that there is a significant relationship between scheduling systems and burnout. Unreasonable scheduling arrangements increase nurses' psychological burden and physical fatigue, thus exacerbating the occurrence of burnout. Therefore, optimising the scheduling system is an important entry point to alleviate nurse burnout. There is some complexity in the effect of psychological support on burnout. Although the importance of psychological support has been widely recognised, its specific implementation and effects still need to be further explored and improved.

This study also has some limitations, including the singularity of the sample source and the limitations of the way the data were collected. It did not take into account the fact that the

scheduling system of the outpatient clinic is different from that of the clinical departments, and only the total number of hours worked and the intensity of work were taken into account.

In summary, by adjusting the scheduling system and strengthening psychological support, the burnout of nurses can be effectively alleviated, providing useful insights for hospital management and policy formulation. It is hoped that the results of this study will promote the occupational health and well-being of healthcare workers, as well as promote the continuous improvement of the nursing work environment in China.

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