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# The status quo and correlational analysis of nursing practices, burnout, and social support among nurses from private hospitals in Dazhou, a less developed area of China

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## Abstract

**Objective** To investigate the status quo of nursing practices, job burnout and social support among private hospitals in Dazhou, Sichuan Province, and perform correlational analysis.

**Methods** A cross-sectional study was conducted. A total of 244 nurses were surveyed via convenience sampling from 7 private hospitals, which were randomly selected from Dazhou city. A self-designed demographic sociology questionnaire was applied, and the Chinese versions of the Maslach Burnout Scale and the Social Support scale administered from September to November 2022.

**Results** The investigated nurses were relatively young ( $26.84 \pm 4.90$  years), had a short duration of service, a low academic background, a low professional title and a low income; however, they were highly satisfied with their working environment and had a low level of burnout, and their level of personal achievement was low. Overtime work, education level and number of children had significant impacts on the level of nurse burnout. The level of social support was high, and various dimensions were negatively correlated with the emotional exhaustion and depersonalization dimensions of burnout ( $r = -0.438, P < 0.01$ ;  $r = -0.372, P < 0.01$ ) and positively correlated with personal achievement ( $r = 0.291, P < 0.01$ ). However, the level of social support was not significantly associated with burnout ( $r = -0.060, p = 0.354$ ).

**Conclusions** Nursing managers in private hospitals should consider ways of improving nurses' education, professional titles, working environment and increasing nurses' income to stabilize the nursing team. Efforts should be made to relieve the nurses' pressure, and notice the overtime work and professional development of nurses to enhance the personal sense of achievement. More measures should be taken to improve the level of social support, thereby promoting the continuous improvement of nursing quality. Due to the uneven level of social and economic development in different parts of China, the extensibility of the research needs to be confirmed by more studies,

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but it still has important reference significance for Northeast Sichuan, which represents areas with similar social and economic levels.

**Keywords** Nurses, Private hospital, Nursing practice, Burnout, Social support, Status quo

### What is already known

- It is widely recognized that significant disparities exist in terms of culture, remuneration, working conditions, and professional advancement between private and public hospitals in China, which give rise to variations in the levels of burnout and social support.
- Many studies have investigated nursing practices, burnout levels, social support and their relationships in public hospitals, whereas few studies have been conducted in private hospitals in China.

### What this paper adds

- This study provides evidence for the status quo of the nursing practices of nurses in private hospitals in Dazhou city, which has a population of more than 5.3 million. Before this study, no one considered burnout among this group of nurses.
- The results of this study show that the phenomenon of 'five lows' (low age, low seniority, low education, low professional title and low income) is evident among nurses in Dazhou private hospitals, and the problem of low personal accomplishment among nurses is prominent.
- Social support and its dimensions were negatively correlated with emotional exhaustion and dehumanization and positively correlated with personal achievement, whereas the level of social support was not significantly correlated with the level of burnout.
- According to the findings of the present study, nurses in private hospitals in Dazhou face different challenges than the nurses in public hospitals. In addition, career development should remain a focus.

### Introduction

The concept of job burnout was initially introduced by the psychiatrist Freudenberger during the 1970s [1]. Burnout is a multifaceted manifestation of physical and mental fatigue and depletion of energy resulting from prolonged occupational stress. It primarily manifests as emotional exhaustion, depersonalization, and diminished personal achievement [1, 2]. Owing to the intricacies of the working environment, job burnout among medical staff is common, and nurses are particularly susceptible to burnout [3]. Burnout not only gives rise to physical,

psychological, and social distress among nurses but also directly correlates with the turnover rate, thus affecting nursing safety, quality, and patient satisfaction [4, 5]. Furthermore, during the COVID-19 pandemic, nurses have experienced heightened psychological strain and are more likely to suffer from severe burnout [6, 7]. The psychological concept of social support was introduced during the 1970s. Social support refers to the support obtained by individuals from social connections, such as effective reduction in mental tension, psychological stress response, and improvement in their own social adaptability [8]. Research has indicated that the provision of social support yields numerous advantages, with increased levels of social support being associated with heightened levels of employee confidence, job satisfaction, and work enthusiasm. Moreover, increased social support can mitigate the burnout level of nurses [9, 10].

In China, public hospitals play a dominant role, and the existence and development of private hospitals is an important supplement to the existing public medical system. In recent decades, private hospitals have rapidly developed. In 2022, the number of private hospitals in China was 25,230, accounting for 68.23%, and the number of beds accounted for 30.0% [11]. Substantial research has been conducted on the nursing practices, burnout and social support of nurses in public hospitals in China. However, only a few studies have focused on nurses from private hospitals in the past 10 years, and no studies have been performed in the past 5 years in China [12–14]. Therefore, there is a lack of information on the current situation of nursing work in private hospitals, and the situation of this large nurse group needs to receive social attention. Moreover, major changes have taken place in the health care system, especially since the COVID-19 pandemic, and studies in this area are needed. Our study focused on the work situation of nurses in private hospitals in western China, which is currently less reported. According to the cultural, geographical, economic and social development level, the situation of private hospitals in Dazhou can well represent most private hospitals in central and eastern Sichuan, Guizhou and northern Yunnan, etc. Although researchers have studied the problem of medical personnel burnout for many years, the research results differ because of different investigation tools, sampling methods and investigation groups.

By investigating the practice status of nurses in Dazhou private hospital in Sichuan Province and the correlation between job burnout and social support, this paper aims to reduce job burnout, promote nurses' psychological

endurance, improve nurses' satisfaction, and provide a reference for hospital managers to formulate scientific human resource management policies.

## Methods

### Design, setting, and participants

A cross-sectional study was conducted between September 2022 and October 2022. One private hospital that had operated for more than 5 years and that had more than 100 beds was randomly selected from each administrative district in the Dazhou area, which consists of 5 counties and 2 municipal districts (Xuanhan County, Kaijiang County, Wanyuan County, Dazhu County, Quxian County, Tongchuan District and Dachuan District, respectively), and a total of 7 hospitals were selected. A total of 30–40 nurses were sampled from each hospital via convenience sampling. Convenience sampling was most appropriate because all the nurses were working in wards. After sampling, a total of 249 nurses were surveyed in 7 private hospitals, all of which were classified as second-class or third-class hospitals by the government.

The inclusion criteria were as follows: registered nurses, working in the surveyed hospital for  $\geq 6$  months, and clinical nursing staff directly involved in patient care. The exclusion criteria were as follows: head nurse and nonclinical nursing staff.

This study was approved by the Ethics Committee of Dazhou Central Hospital. The participating nurses were asked to read the informed consent form before completing the questionnaire. After the relevant research purposes, procedures, confidentiality principles and rights and obligations of the subjects were read, if the participating nurses were willing to participate in the research, they selected "Agree to participate in the investigation" to enter the formal investigation. All of the nurses voluntarily participated in this study. The survey team consisted of 7 nursing staff who received centralized training before the investigation. The investigation was conducted in pairs. The questionnaire was distributed to the respondents in paper format after the purpose of the study was explained face-to-face by the investigators. Mobile phone use was not permitted when nurses were working in some hospitals, so electronic questionnaires were not adopted. A total of 250 questionnaires were distributed, 249 were returned, 244 were valid, and the effective response rate was 97.6%.

### Measurements

The questionnaire consists of four parts, namely, the informed consent form, the self-designed demographic questionnaire for nursing practice (including general information and professional status), the Chinese version of the Maslach Burnout Inventory, and the Social Support Scale. The demographic questionnaire includes

13 items such as gender, age, highest education level, marital status, number of offspring, monthly income, length of service, hospital, department, professional title, night shift rotation, overtime work, and job satisfaction. The Maslach Burnout Inventory (MBI) was created by Maslach in 1986 [15] and was translated and revised by Li Xiaomei et al. [16]; the Chinese version, one of the most referenced Chinese instruments for burnout, includes three dimensions (emotional exhaustion, depersonalization, and reduced personal accomplishment) and 22 items. A 7-point (0~6) scoring method was used. In the emotional exhaustion dimension, a score of  $\leq 18$  points indicates low risk, a score of 19–26 points indicates medium risk, and a score of  $\geq 27$  points indicates high risk. In the depersonalization dimension, a score of  $\leq 5$  points indicates low risk, a score of 6–9 points indicates medium risk, and a score of  $\geq 10$  points indicates high risk. In the personal accomplishment dimension, a score of  $\leq 33$  points indicates high risk, a score of 34–39 points indicates medium risk, and a score of  $\geq 40$  points indicates low risk. The Cronbach's  $\alpha$  of the scale was 0.93, and those of the three dimensions were 0.91, 0.84, and 0.81, respectively.

The Social Support Scale used in this study is a scale developed by Xiao Shuiyuan [17]. The scale includes three dimensions, namely, subjective support, objective support, and support utilization, with a total of 14 items. It adopts a 4-point (1~4) scoring system, and the total score is the sum of the scores of the 14 items. A higher score indicates a higher level of social support. Scores below 20 indicate low social support, scores between 20 and 30 indicate moderate social support, and scores above 30 indicate high social support. The Cronbach's  $\alpha$  of the scale is 0.920, and the Cronbach's  $\alpha$  values of the three dimensions are 0.849, 0.825 and 0.833 [18].

### Statistical analysis

The data were first input into an Excel spreadsheet and then imported into SPSS 23.0 for analysis. The measurement data are presented as the means  $\pm$  standard deviations ( $\bar{x} \pm s$ ), and the count data are presented as percentages (%). When analysing data, if the data followed a normal distribution and had homogeneity of variance, a t test or one-way analysis of variance (ANOVA) was used. If the data did not conform to a normal distribution or had heterogeneity of variance, the Mann-Whitney U test was used. Pearson correlation analysis was used to analyse the correlation between burnout and social support.  $P < 0.05$  indicated a statistically significant difference.

## Results

### General situation

Among the 244 surveyed nurses, the average age was  $26.84 \pm 4.90$  years, and other sociodemographic indicators are shown in Table 1 or Fig. 1.

### Employment status

The practice status of the surveyed nurses is shown in Table 2 or Fig. 2.

### Level of burnout

The burnout score of the 244 nursing staff members was  $47.13 \pm 14.69$  points. The scoring situation of each entry is shown in Table 3. Table 4 shows the high-, medium-, and low-risk situations for each item.

### Analysis of burnout score single factor

A univariate analysis was conducted on the burnout scores of the surveyed subjects, and the results are shown in Table 5. Nurses who work overtime, have different educational backgrounds, and have different numbers of offspring have significantly different burnout scores ( $P < 0.05$ ).

Post hoc comparisons revealed significant differences in burnout levels among nurses with different frequencies of overtime work; nurses with college degrees had significantly higher burnout levels than those with vocational school or undergraduate degrees did, and nurses with one child had significantly higher burnout levels than those with no children or two children did.

### Level of social support

The social support score of the 244 nursing staff members was  $36.82 \pm 6.09$  points. The score distribution for each item is shown in Table 6. Among the nurses, 84.4% had high social support ( $> 30$  points), 15.2% had moderate social support (20–30 points), and 0.4% had low social support ( $< 20$  points).

### Correlation analysis between burnout and social support

Table 7 shows that social support and its dimensions are negatively correlated with the emotional exhaustion and depersonalization dimensions of burnout and positively correlated with low personal accomplishment. However, the level of social support was not significantly correlated with the level of burnout ( $r = -0.060$ ,  $p = 0.354$ ).

**Table 1** Demographic indicators of the surveyed nurses

Entry	Item Category	Number of entries	Percentage
Gender	Male	6	2.5%
	Female	238	97.5%
Education	Undergraduate	56	23.0%
	Associate degree	153	62.7%
	Secondary vocational school	35	14.3%
Professional title	(Deputy) Chief Nurse	0	0
	Nurse in charge	16	6.6%
	Senior nurse	104	42.6%
	Nurse	124	50.8%
Marital status	Married	134	54.9%
	In a romantic relationship	57	23.4%
	Single (not in a romantic relationship)	50	20.5%
Number of offspring	Divorced	3	1.2%
	0	128	52.5%
	1	86	35.2%
	2	28	11.5%
Length of service (yrs)	3	2	0.8%
	$\geq 1, < 3$	64	26.3%
	$\geq 3, < 5$	66	27.5%
	$\geq 5, < 10$	76	31.1%
	$\geq 10, < 15$	30	12.3%
	$\geq 15, < 20$	4	1.6%
Monthly income (RMB)	$\geq 20, < 30$	4	1.6%
	below 3000	74	30.3%
	3000~4999	153	62.7%
	5000~6999	16	6.6%
	7000~9999	1	0.4%
Total	10,000 and above	0	0
		244	100%

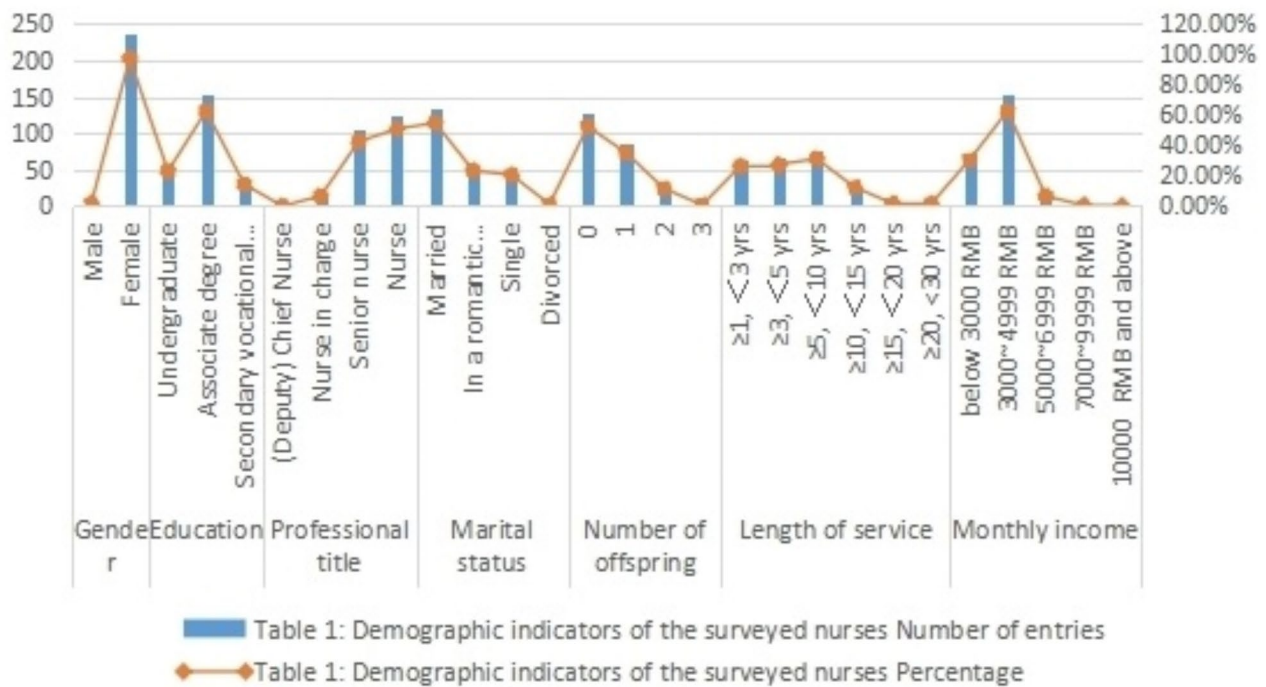


Fig. 1 Demographic indicators of the surveyed nurses

Table 2 The practice status of 244 nurses

Entry	Item Category	Number of entries	Percentage
Night shift situation	Rotating Night Shift	146	59.84%
	No night shift	98	40.16%
Overtime work situation	Never	111	45.49%
	Occasionally	100	40.98%
	Often	25	10.25%
Job satisfaction	Always	8	3.28%
	Very satisfied	57	23.36%
	Satisfaction	168	68.85%
	Dissatisfied	17	6.97%
Total	Very dissatisfied	2	0.82%
		244	100%

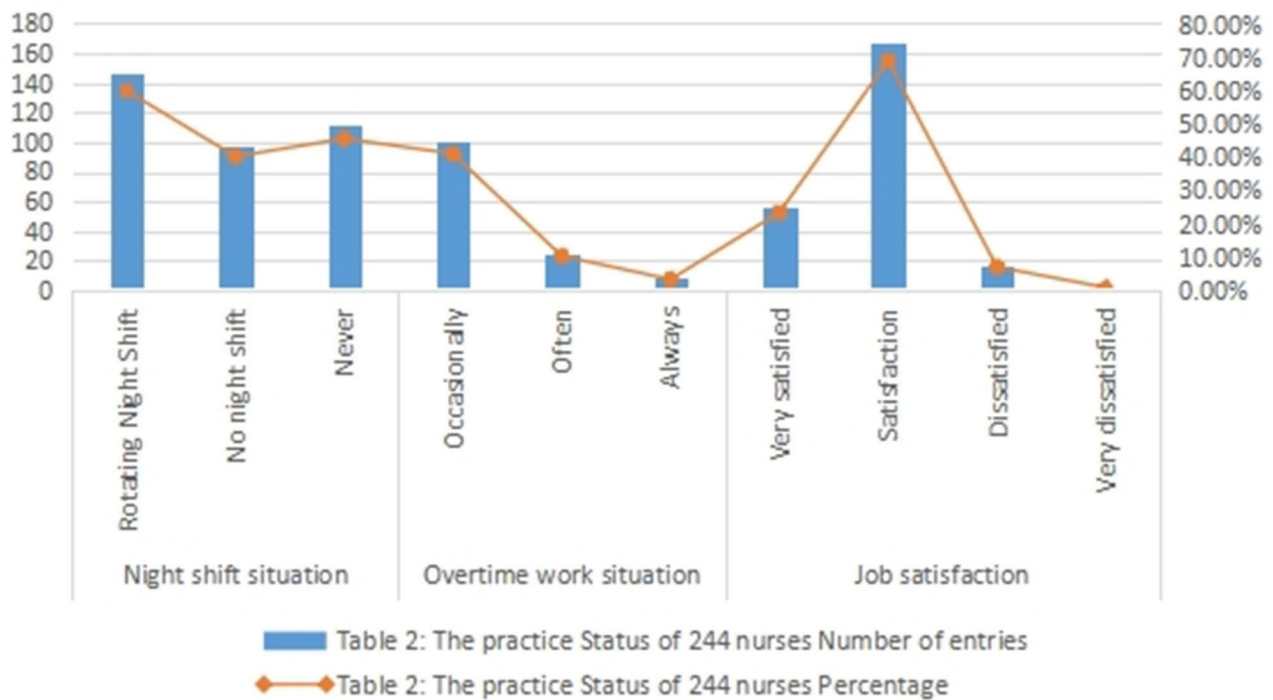
**Discussion**

**Obvious phenomenon of ‘five lows’ among surveyed nurses**

In this study, there was a significant ‘five lows’ phenomenon among the surveyed nurses, specifically, low age, low length of service, low education level, low professional title, and low income. Among the 244 nurses surveyed from 7 private hospitals, the average age was only  $26.84 \pm 4.90$  years, and nurses with less than 5 years of work experience accounted for 53.8% of the sample. The National Nursing Quality Data Platform [19] shows that as of December 2022, the median proportion of nurses with less than 5 years of work experience in secondary non-public hospitals nationwide was 33.93%, whereas in Sichuan Province, it was 48.89%. This may be attributed

to the relatively short establishment time of private hospitals and the high turnover rate of nurses. Research has shown that a reasonable age structure is crucial for promoting the healthy development of organizations [20, 21]. Nursing managers of private hospitals should consider how to build stable nursing teams with reasonable structures to improve the enthusiasm of nurses and improve the quality of nursing.

Only 22.95% of the surveyed nurses had a bachelor’s degree, and all of them were working while studying. Additionally, 14.34% had a vocational school diploma. According to the National Nursing Quality Data Platform [19], among hospitals at the same level nationwide, the median percentages of those with undergraduate education and secondary vocational education are 37.11% and



**Fig. 2** The practice status of 244 nurses

**Table 3** Score of three dimensions of burnout

Entry	Number of entries	Score Range	Actual score ( $\bar{x} \pm s$ )	Average score of entries ( $\bar{x} \pm s$ )
Emotional exhaustion	9	0~54	8.95 ± 7.31	0.99 ± 1.04
Depersonalization	5	0~30	3.64 ± 4.00	0.73 ± 1.01
Low personal accomplishment	8	0~48	34.54 ± 13.13	4.32 ± 2.07
In total	22	0~132	47.13 ± 14.69	2.14 ± 2.22

**Table 4** High-, medium-, and low-risk situations for burnout items

Entry	High-risk population (%)	Number of individuals at moderate risk (%)	Low-risk population (%)	Total
Emotional exhaustion	9 (3.7%)	16 (6.6%)	219 (89.8%)	244 (100%)
Depersonalization	23 (9.4%)	31 (12.7%)	190 (77.9%)	244 (100%)
Personal achievement	93 (38.1%)	33 (13.5%)	118 (48.4%)	244 (100%)

3.3%, respectively; in Sichuan Province, the percentages are 21.73% and 23.70%, respectively. This finding indicates that, compared with domestic hospitals of the same level, the educational background of nurses in our city's private hospitals is generally low, and significantly lower than the national average. Multiple studies both domestically and internationally have shown a positive correlation between nurses' education level and the quality of nursing care [22]. Therefore, how to improve the educational level of nurses is a question that nursing managers in private hospitals need to consider. Hospitals should introduce relevant measures to encourage the promotion of academic qualifications, such as evaluating the best, performance rewards, etc., to encourage nurses to take the initiative to improve their academic qualifications.

The proportion of nurses with primary professional titles (nurse, senior nurse) in the surveyed group was as high as 93.44%, while the proportion of nurses with titles in charge or (deputy) chief nurse was 6.6%. There were no personnel with (deputy) chief nurses. According to the National Nursing Quality Data Platform [19], the median number of junior nursing titles in non-public secondary hospitals nationwide is 73.81%, the median number of intermediate nursing titles is 27.37%, and the median number of (deputy) chief nurses is 1.42%; in Sichuan Province, these percentages are 92.10%, 5.93%, and 1.98%, respectively. Therefore, promoting the professional titles of the investigated nurses is also one of the issues that hospital managers should consider. We should fully analyse the reasons why nurses are not promoted

**Table 5** Single-factor analysis of burnout

Variable	Number of cases	Average value	Standard deviation	F	P
Age (yrs)				2.82	0.04
≥ 18, <25	82	50.46	14.54		
≥ 25, <30	108	46.58	13.57		
≥ 30, <40	47	43.21	15.63		
≥ 40, <50	7	42.86	17.39		
Education				8.08	0.00
Secondary vocational school	35	46.66	12.70		
College degree	153	49.61	14.38		
Undergraduate	56	40.64	14.66		
Marriage				1.06	0.35
Married	134	48.01	16.73		
In a romantic relationship	57	49.04	15.98		
Single	50	48.13	16.05		
Divorced	3	35.00	16.52		
Number of offspring born (count)				2.77	0.04
0	128	47.99	14.81		
1	86	48.23	13.75		
2	28	39.68	15.26		
3	2	49.00	0.00		
Monthly income (RMB)				0.60	0.61
Below 3000	74	48.73	14.77		
3000~4999	153	46.24	14.91		
5000~6999	16	47.69	11.45		
7000~9999	1	56.00	/		
Length of service (yrs)				0.66	0.65
≥ 1, <3	64	47.89	14.52		
≥ 3, <5	66	48.88	15.40		
≥ 5, <10	76	46.16	14.55		
≥ 10, <15	30	45.1	12.50		
≥ 15, <20	4	48.25	3.11		
≥ 20, <30	4	38.75	22.08		
Professional title				1.14	0.32
nurse	124	48.11	16.00		
senior nurse	104	46.68	12.60		
Nurse-in-charge	16	42.44	15.00		
Night shift				0.03	0.87
Shift night shift	146	47.26	15.01		
No night shift	98	46.94	14.19		
Overtime work situation				6.00	0.001
Never	111	44.08	13.29		
once in a while	100	47.92	15.57		
often	25	52.72	11.41		
always	8	62.13	15.20		
Satisfaction with working environment				2.83	0.06
Dissatisfied	19	54.05	15.20		
be satisfied	168	47.13	14.47		
Very satisfied	57	44.84	14.43		

and the difficulties encountered in nurses getting promoted, and we should pursue multiple pathways to solve the difficult problem of nurses getting promoted.

The overall income of the investigated nurses was relatively low, with 93.03% earning a monthly income

of ≤5000 RMB and 30.33% earning less than 3000 RMB per month. This is one of the main reasons for the high turnover rate of nurses and can also lead to a low sense of personal achievement [23]. We suggest that managers of private hospitals consider the optimal performance

**Table 6** The score of each item of social support

Entry	Number of entries	Score Range	Actual score (mean ± standard deviation)	Average score (x ± s)
Objective support	4	6~16	11.81 ± 2.30	2.95 ± 1.11
Subjective support	5	6~20	14.58 ± 3.98	2.92 ± 1.30
Support for utilization	5	3~14	10.43 ± 1.99	2.09 ± 1.22
Total Score	14	17~49	36.82 ± 6.09	2.63 ± 1.28

**Table 7** Correlation analysis between burnout and social support

	Objective support	Subjective support	Support for utilization	Total social support score
Emotional exhaustion	-0.295**	-0.355**	-0.293**	-0.438**
Dehumanization	-0.243**	-0.313**	-0.233**	-0.372**
Personal achievement	0.205**	0.183**	0.288**	0.291**
Total score of burnout	-0.030	-0.098	0.048	-0.060

Note: \*\* $P < 0.01$

plan, optimize the performance plan according to various characteristics, such as post competence, and improve the overall income of nurses.

#### The work intensity is low, and the satisfaction with the working environment is high

A total of 86.47% of the investigated nurses stated that they never work overtime or work overtime occasionally, and 92.21% of them expressed that they were very satisfied or satisfied with the working environment. The upper limit of the social support rate reached 84.4%, which indicates that nurses in private hospitals have lower work intensity and pressure and often have better working environments. This is consistent with the findings of the study by Zhiwei Zhou et al. [24]. This may be related to private hospitals' emphasis on providing better ward environments for patients and better working environments for nurses [25, 26].

#### The level of burnout is low, but low personal achievement is prominent

Low personal achievement manifests as a lack of career satisfaction. This survey revealed that 3.7% of nurses are at high risk of emotional exhaustion, 9.4% are at high risk of depersonalization, and 51.6% are at medium to high risk of low personal achievement. Low personal achievement indicates that employees begin to hold a negative and sceptical attitude towards their value and contribution at work and believe that they are not functional and cannot be satisfied at work [27]. This finding indicates that the surveyed nurses suffer less from emotional exhaustion and depersonalization; however, their low personal achievement is highly prominent. This may be related to the traditional view of "focus much more on treatment than nursing", which suggests that nurses can only play a supporting role for doctors and cannot achieve a complementary role with doctors, resulting in the weakening of the professionalism of nursing. Nurses in private hospitals have low income, lack professional

belonging, lack occupational stability, and have a relatively high probability of external work [28]. Hospital managers should realize that nursing is an important part of hospitals and provide nurses with more opportunities to participate in various positions, improve their self-value recognition, and constantly improve their sense of accomplishment.

#### Education level, number of children, and overtime work are related to burnout level

Univariate analysis of burnout revealed that demographic factors such as education level ( $F=8.08$ ,  $P=0.000$ ), number of children ( $F=2.77$ ,  $P=0.042$ ), and overtime work ( $P=6.00$ ,  $P=0.001$ ) can affect the level of burnout. The survey results revealed that the greater the amount of overtime work, the greater the level of job burnout, which is consistent with the research results of Hong Mengyuan et al. [29]. Education level also affects nurse burnout. The survey found the highest degree of burnout among those with a college degree and the lowest degree of job burnout among those with an undergraduate degree, which is inconsistent with the findings of Jiang Yanhua [11]. The degree of burnout among undergraduates is lower than that among junior college and technical secondary school nurses. This may be due to the relatively low proportion of nurses with undergraduate degrees in private hospitals. Highly educated nurses are highly valued in private hospitals, corresponding to higher working status and salary levels. These nurses consciously reflect their self-value within the organization and low job burnout. Thus, it is suggested that nursing managers consider greater recruitment of highly educated nurses or develop policies to encourage education promotion, enhance the sense of achievement of nurses, and reduce job burnout.

#### The nurses had high social support, but the level of social support is unrelated to burnout

Studies have shown that social support can play a regulatory role in mental health and work stress, encouraging



individuals to actively cope with the problems they face [30]. Among the surveyed nurses, 84.4% had high social support, among which the highest average score of all dimensions of social support was subjective support, indicating that nurses at Dazhou Private Hospital have a strong emotional experience of being respected, supported and understood by social groups. The score rate of the support utilization dimension was the lowest, possibly because the majority of young nurses in this study had unstable working environments and less help and support available, which is consistent with the research results of Liu et al. [31]. Hospital managers should provide more care to young nurses and night-shift nurses, help them build an ideal social support system, and provide visible and practical objective support resources. In addition, they should work on creating conditions for nurses to make reasonable use of support resources to ensure the maximum use of social support. The results of this study revealed that social support and its various dimensions are negatively correlated with the emotional exhaustion and dehumanization dimensions and positively correlated with low personal achievement, which is the same as the results of Weigl and Kumari [32, 33]. However, there was no correlation between a high level of social support and job burnout. This may be because although the surveyed nurses had a high level of social support, their stress levels and their ability to withstand and relieve stress differed, leading to different levels of job burnout. Some studies have shown that an important factor of burnout is nurse stress. When nurses perceive greater stress at work, they experience burnout. After controlling for nurse stress, the main effect of social support on burnout is not significant [34]. Studies have also shown [35] that nurses' stress plays an intermediary role in the relationship between social support and job burnout. Nurses believe that social support is conducive to relieving their pressure, which reduces their job burnout. These findings indicate that nurse stress has a significant effect on job burnout. In the future, the nursing management of private hospitals should consider the stress management of nurses, such as the source of pressure and the discharge of pressure, and provide more humanized anti-stress measures, including psychological support activities and special places for decompression, to relieve the pressure of nurses to reduce their job burnout.

### Strengths and limitations

Domestic research on nurses' occupational status, job burnout and social support level has focused mostly on medical staff in public hospitals or nurses in certain departments of public hospitals, whereas few studies have focused on nurses in private hospitals. With the gradual increase in the number of private hospitals, nurses in private hospitals are becoming an important

part of the nursing team in China. It is necessary to study the correlations among the practice status, job burnout and social support level of nurses in private hospitals. Owing to the uneven level of social and economic development in China, the generalizability of the research results needs to be confirmed by more studies, but it remains highly important for Northeast Sichuan, which contains areas with similar social and economic levels.

Due to the limitations of research and personal conditions, the sample size of this study is relatively small, and the sampling scope is only limited to 7 secondary degree and above general private hospitals in a city in Sichuan Province. Whether the research results can reflect the universal characteristics of nurses in private hospitals needs to be expanded in the later stage for further research. In addition, this study is only a cross-sectional study, and the practice status, burnout and social support of nurses are all dynamic processes, so it is necessary to continue to conduct follow-up research, with the hope of strengthening this research in the future. Finally, in view of the relationship between job burnout and the level of social support, this study has made some preliminary conclusions, which need to be further improved and deepened. In particular, how to intervene effectively in real situations and put forward suggestions and opinions that are in line with the actual conditions in private hospitals, as well as the feasibility of these suggestions in practice and other issues, are important topics. Further verification studies are needed in the later stage.

### Conclusion

The results of this study show that the phenomenon of 'five lows' (low age, low seniority, low education, low professional title and low income) is evident among nurses in Dazhou private hospitals, and the problem of low personal accomplishment among nurses is prominent. Social support and its dimensions were negatively correlated with emotional exhaustion and dehumanization and positively correlated with personal achievement, while the level of social support was not significantly correlated with the level of burnout.

In conclusion, nursing managers in private hospitals, especially those in northeast Sichuan, whose economic level is similar to that of Dazhou, should pay attention to improving nurses' education and professional titles and increasing nurses' income to stabilize the nursing team. In addition, importance should be attached to overtime work because it is related to the level of burnout. Moreover, efforts should be made to create a healthy working environment, relieve the pressure of nurses, and give attention to the professional development of nurses to enhance the personal sense of achievement. High social support is related to a low level of burnout, so more measures should be taken by nursing managers to improve

the level of social support, thereby promoting the continuous improvement of nursing quality. Due to the uneven level of social and economic development in different parts of China, the extensibility of the research results needs to be confirmed by more studies, but it remains of great reference significance for Northeast Sichuan, which contains areas with similar social and economic levels.

### Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12912-024-02369-y>.

Supplementary Material 1

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Not applicable.

### Author contributions

Conception and design: Jia Cao and Chengli Yan. Jia Cao, Chengli Yan contributed equally to this work and share first authorship. Data collection: Jia Cao, Lianghui Kang, Jie Chen. Drafting of the manuscript: Jia Cao, Chengli Yan. Methodology, software, data curation, formal analysis: Jia Cao, Chengli Yan. Manuscript revision: Chengli Yan, Yanpeng Chu, Xiaoli Zhong, Yuyu Chen. Translation: Jia Cao, Yanpeng Chu, Xiaoli Zhong, Yu Lei. Supervision: Yanpeng Chu.

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### Data availability

Sequence data that support the findings of this study have been deposited in the Figshare. (<https://doi.org/10.6084/m9.figshare.24473446.v2>)

### Declarations

#### Ethics approval and consent to participate

The Medical Ethics Committee of Dazhou Central Hospital reviewed the approval 2019 Review No. 043. Written informed consent was obtained from all individuals included in this study. All experiments were performed in accordance with relevant guidelines and regulations.

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare no competing interests.

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