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Analysis on the Correlation Between Perceived Stress, Job Burnout, and Subjective Well-being Among Undergraduate Nursing Interns

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Abstract: *Objective*: To analyze the correlation between perceived stress, job burnout, and subjective well-being among undergraduate nursing interns. *Methods*: A total of 260 clinical nursing interns who interned in tertiary hospitals from July 2024 to April 2025 were selected as the survey subjects. They were administered the Chinese version of the Perceived Stress Scale (CPSS), the Maslach Burnout Inventory-Human Services Survey (MBI-HSS), and the General Well-being Schedule (GWB) to evaluate the correlation between perceived stress, job burnout, and subjective well-being. *Results*: The subjective well-being scores of those with higher perceived stress were lower than those with moderate stress; individuals with severe job burnout had lower subjective well-being compared to those without job burnout or with mild to moderate job burnout levels ($p < 0.05$). Correlation analysis revealed that the subjective well-being of undergraduate nursing interns was negatively correlated with perceived stress and job burnout ($p < 0.05$). *Conclusion*: Undergraduate nursing interns experience significant perceived stress and a strong sense of job burnout. Their subjective well-being is correlated with their perceived stress and job burnout. It is necessary to optimize the clinical teaching model and provide psychological skills training to alleviate the interns' perceived stress and job burnout, thereby significantly enhancing their subjective well-being.

Keywords: Undergraduate nursing interns; Perceived stress; Job burnout; Subjective well-being; Correlation

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1. Introduction

Perceived stress refers to the psychological response an individual makes, guided by self-cognition and evaluation, when faced with stimulating events. Its level can reflect an individual's mental health status. Undergraduate nursing interns need to master nursing skills within a short period, regularly undergo theoretical and practical assessments, and simultaneously write their graduation theses. Facing multiple pressures such as graduation and internships, they are prone to elevated perceived stress [1]. Job burnout refers to psychological issues such as

emotional exhaustion or a decline in a sense of accomplishment that individuals exhibit in highly stressful, high-demand work environments. Undergraduate nursing interns, at a turning point in their career development, are susceptible to job burnout due to the demanding nursing tasks and night shifts they face. Subjective well-being refers to an individual's evaluation of happiness in their current life and work, encompassing multiple dimensions such as cognition and emotion [2,3]. The subjective well-being of undergraduate nursing interns can directly affect their work enthusiasm, and the level of well-being is influenced by factors such as perceived stress. Based on this, this study selected 260 undergraduate nursing interns to evaluate the correlation between perceived stress, job burnout, and the subjective well-being of the interns.

2. Materials and methods

2.1. General information

The survey subjects were 260 clinical nursing interns who entered Grade-A Tertiary Hospitals for internships from July 2024 to April 2025. Among them, there were 19 males and 241 females; their ages ranged from 19 to 24 years old, with an average age of (22.05 ± 2.18) years; 242 were of Han ethnicity, and 18 were from ethnic minorities; 46 were only children, and 214 were non-only children; their family locations included 81 in cities, 42 in county towns, 39 in townships, and 98 in rural areas; they were enrolled in 8 private junior colleges, 3 public junior colleges, 140 public undergraduate institutions, 41 Double First-Class universities, and 68 private undergraduate institutions; 178 applied for nursing as their first choice, and 82 did not.

2.1.1. Inclusion criteria

Clinical nursing interns in tertiary-level hospitals; internship duration exceeding 10 months; complete basic information of interns; interns capable of independently completing questionnaire surveys, informed and consenting to participate in this study.

2.1.2. Exclusion criteria

Presence of mental illnesses such as depression or anxiety; currently on academic leave; difficulty in cooperating with questionnaire completion and related tasks; participation in other studies; withdrawal from this study midway.

2.2. Methods

Clinical instructors distributed survey questionnaires to the interns, clarifying the assessment significance and purpose of each questionnaire, explaining the completion methods and precautions, and requiring the interns to complete them independently, ensuring no items were missed or incorrectly filled out. The questionnaires were collected on-site. The questionnaire results showed 261 valid responses (260 agreed to participate, 1 did not agree). Due to the exclusion of the one who "did not agree to participate", the final analysis included 260 questionnaires. The specific questionnaires included

(1) CPSS questionnaire

It contains dimensions of a sense of loss of control and tension, each with 7 items. Each item is scored from 0 to 4 points, totaling 56 points. Perceived stress is positively correlated with the score, with a critical value of 26 points. Scores below 26 indicate moderate stress, while scores of 26 or above indicate high stress. The Cronbach's α coefficient of this questionnaire is as high as 0.78, indicating good reliability and validity.

(2) MBI-HSS scale

It comprises emotional exhaustion (9 items), depersonalization (5 items), and reduced personal accomplishment (8 items), with each item scored from 0 to 6. The first and second dimensions of job burnout are positively correlated with scores, with Cronbach's α coefficients of 0.88 and 0.83, respectively. The third dimension of job burnout is negatively correlated with scores, with a Cronbach's α coefficient of 0.82. Using one-third of the total score for each dimension as the cutoff value, the scale further divides job burnout into four categories: no burnout, mild, moderate, and severe burnout.

(3) GWB scale

It includes satisfaction and interest in life (2 items), energy (4 items), concern for health (2 items), depressed or happy mood (3 items), relaxation and tension (4 items), and control over emotions and behaviors (3 items). Items 1, 3, 4, and 8–14 are scored from 1 to 6, items 2, 5, 6, and 7 are scored from 1 to 5, and items 15–18 are scored from 1 to 10, totaling 124 points. Subjective well-being is positively correlated with scores, with a Cronbach's α coefficient of 0.63, indicating good reliability and validity.

2.3. Observation indicators

Analyze the scores of all interns on each scale, compare the differences in scores among interns with different levels of perceived stress and job burnout, and assess the correlations between perceived stress, job burnout, and subjective well-being among interns.

2.4. Statistical analysis

Data processing was conducted using SPSS 28.0 statistical software. Count data were expressed as [n/%] and analyzed using the chi-square (χ^2) test. Measurement data were tested for normal distribution using the Kolmogorov-Smirnov (K-S) test and expressed as [$\overline{x} \pm s$]. Comparisons between two groups were made using the independent samples *t*-test, while comparisons among multiple groups were made using the *F*-test. Correlation analysis was performed using Pearson's method. A *p*-value less than 0.05 was considered statistically significant.

3. Results

3.1. Analysis of scale scores among undergraduate nursing interns

Among the perceived stress scores of undergraduate nursing interns, the score for tension was relatively high. In the job burnout scores, emotional exhaustion scored higher. In the subjective well-being scores, the score for energy was relatively high (refer **Table 1**).

Table 1. Analysis of scale scores among undergraduate nursing interns [$\overline{x} \pm s$, points]

Dimension	Subscale	Items (n)	Total score
Perceived stress	Sense of uncontrollability	7	20.53 ± 3.45
	Sense of tension	7	22.64 ± 3.74
Job burnout	Emotional exhaustion	9	32.66 ± 4.18
	Depersonalization	5	10.68 ± 1.74
	Reduced personal accomplishment	8	18.45 ± 2.93

Table 1 (Continued)

Dimension	Subscale	Items (n)	Total score
Subjective well being	Satisfaction & interest in life	2	6.37 ± 1.59
	Energy	4	16.92 ± 3.11
	Worry about health	2	11.85 ± 2.36
	Depressed or pleasant mood	3	15.46 ± 2.79
	Relaxation vs tension	4	15.99 ± 2.84
	Control over emotions & behaviors	3	7.98 ± 1.76

3.2. Comparison of subjective well-being scores among different levels of perceived stress

Based on the perceived stress levels, there were 152 individuals with high stress and 108 individuals with moderate stress. The subjective well-being scores of those with high perceived stress were lower than those with moderate stress ($p < 0.05$) (refer **Table 2**).

Table 2. Comparison of subjective well-being scores among different levels of perceived stress [$\overline{x} \pm s$, points]

Perceived stress level	n	Satisfaction & interest in life	Energy	Worry about health	Depressed or pleasant mood	Relaxation vs. tension	Control over emotions & behaviors
High stress	152	5.58 ± 1.64	14.56 ± 2.41	10.07 ± 1.98	13.75 ± 2.08	14.58 ± 2.44	8.94 ± 1.76
Moderate stress	108	6.08 ± 1.86	16.05 ± 2.78	11.92 ± 1.76	14.66 ± 2.97	15.94 ± 2.58	7.07 ± 1.63
t		2.290	4.607	7.770	2.906	4.324	8.703
p		0.023	0.000	0.000	0.004	0.000	0.000

3.3. Comparison of subjective well-being scores across different levels of job burnout

Based on job burnout levels, there were 26 individuals without burnout, 109 with mild burnout, 116 with moderate burnout, and 9 with severe burnout. The subjective well-being of those with severe job burnout was lower than that of those without job burnout and those with mild to moderate job burnout ($p < 0.05$) (refer **Table 3**).

Table 3. Comparison of subjective well-being scores across different levels of job burnout [$\overline{x} \pm s$, score]

Job burnout level	n	Satisfaction & interest in life	Energy	Worry about health	Depressed or pleasant mood	Relaxation vs. tension	Control over emotions & behaviors
No burnout	26	8.13 ± 1.35	19.06 ± 2.76	13.14 ± 2.15	18.02 ± 1.84	17.96 ± 2.76	9.12 ± 1.92
Mild burnout	109	7.28 ± 1.31	18.01 ± 2.63	12.12 ± 2.06	17.13 ± 1.74	16.05 ± 2.16	8.04 ± 1.72
Moderate burnout	116	6.05 ± 1.43	16.44 ± 2.37	10.78 ± 1.73	16.05 ± 1.42	13.55 ± 1.64	7.11 ± 1.06
Severe burnout	9	5.33 ± 1.06	14.02 ± 2.33	8.99 ± 1.43	14.33 ± 1.54	11.52 ± 1.60	6.03 ± 1.14
F		27.864	16.678	20.876	21.136	58.378	20.148
p		0.000	0.000	0.000	0.000	0.000	0.000

3.4. Correlation analysis of perceived stress, job burnout, and subjective well-being

Correlation analysis revealed that the subjective well-being of undergraduate nursing interns was negatively correlated with perceived stress and job burnout ($p < 0.05$) (refer **Table 4**).

Table 4. Correlation analysis of perceived stress, job burnout, and subjective well-being (r-value)

Variable		Satisfaction & interest in life	Energy	Worry about health	Depressed or pleasant mood	Relaxation vs. tension	Control over emotions & behaviors	Total score
Perceived stress	Sense of Uncontrollability	-0.114	-0.081	-0.208	-0.345	-0.050	-0.487	-0.182
	Sense of Tension	-0.125	-0.075	-0.163	-0.320	-0.048	-0.445	-0.159
Job burnout	Emotional Exhaustion	-0.113	-0.106	-0.149	-0.284	-0.043	-0.498	-1.164
	Depersonalization	-0.190	-0.109	-0.115	-0.255	-0.052	-0.491	-0.182
	Reduced Personal Accomplishment	-0.182	-0.080	-0.190	-0.264	-0.071	-0.441	-0.180

4. Discussion

Undergraduate nursing interns, during their clinical internships, need to balance their graduation theses, knowledge assessments, and clinical nursing responsibilities. As they assume dual roles as students and quasi-nurses, they face significant physical and mental stress. Therefore, it is essential to comprehensively evaluate the perceived stress and job burnout levels of undergraduate nursing interns, analyze their relationship with subjective well-being, and subsequently develop scientific and reasonable intervention measures [4].

The results showed that undergraduate nursing interns had relatively high scores in tension and emotional exhaustion, but also scored high in the energy aspect of subjective well-being. The reasons for this are as follows: Interns may face complex nurse-patient relationships, challenging nursing techniques, and heavy academic workloads in the hospital environment, which can easily lead to psychological issues such as anxiety and unease, significantly increasing their sense of tension. Prolonged physical and mental stress can induce avoidance behaviors in interns, affecting their personal lives and work performance, manifesting as emotional exhaustion [5]. However, in terms of subjective well-being, interns scored high in energy because they are relatively young and in a phase of vigorous energy. With appropriate guidance and scientific interventions, interns demonstrate strong self-regulation abilities, which are expected to alleviate their perceived stress and occupational burnout [6,7]. Among the results, those with higher perceived stress scored lower in subjective well-being compared to those with moderate stress, and those with severe burnout scored lower in subjective well-being than those without occupational burnout or with mild to moderate burnout. Correlation analysis revealed a negative correlation between subjective well-being and perceived stress as well as occupational burnout ($p < 0.05$). The reasons for this are: Transitioning from a campus environment to a hospital setting, most interns experience significant discomfort when faced with heavy tasks, strict standards, and a fast-paced work life, perceiving their emotional labor intensity as high [8]. Interns have limited abilities in handling peer relationships, teacher-student relationships, and nurse-patient relationships, and they face multiple pressures, leading to significant occupational burnout and a subsequent decrease in their subjective well-being. Additionally, the clinical teaching system primarily revolves around department rotations, resulting in low communication frequency between teaching instructors and interns. This

makes it difficult to provide emotional support, easily causing feelings of tension or anxiety among interns, which in turn affects their work enthusiasm and subjective well-being [9,10].

Based on the above research findings, it is necessary to improve the clinical teaching system by implementing a "dual-mentor system", where each intern is assigned a growth mentor responsible for their psychological counseling. The mentor can engage in one-on-one communication with the intern at irregular intervals, assess their sources of psychological stress, and provide targeted psychological counseling [11,12]. It is also essential to strengthen psychological skills training by incorporating psychological skills courses into the internship content. Mindfulness-based stress reduction therapy or cognitive-behavioral therapy can be conducted in small class settings to enable interns to master psychological adjustment techniques [13]. Meanwhile, a psychological counseling center should be established to provide free psychological counseling services to interns, encouraging them to undergo regular psychological assessments. Psychological counselors can then provide long-term interventions based on their psychological issues [14].

5. Conclusion

In conclusion, undergraduate nursing interns experience significant perceived stress and notable occupational burnout, with their subjective well-being negatively correlated with these indicators. Targeted interventions are necessary to improve the mental health of interns.

Disclosure statement

The authors declare no conflict of interest.

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