Authentic Leadership, Work Engagement, and Job Stress Among Dental Nurses in Stomatological Hospitals, Guizhou Province, the People's Republic of China*

ภาวะผู้นำที่แท้จริง ความผูกพันในงาน และความเครียดในงานของพยาบาลทันตกรรม
ในโรงพยาบาลช่องปาก มณฑลกุ้ยโจว สาธารณรัฐประชาชนจีน*

JunYao   Yang**   จันเหยา   หยาง**
Somjai   Sirakamon***   สมใจ   ศิระกมล***
Thitinut   Akkadechanunt****   ฐิติณัฏฐ์   อัคคะเดชอนันต์****

Abstract

Most dental nurses are under a great deal of job stress, yet increased job stress can lead to adverse consequences for health care systems, for example, reducing creativity, generating conflicts in the workplace, and causing job dissatisfaction and health problems among dental nurses. Therefore, reducing job stress among this group is a top priority for nursing administrators. This descriptive correlational study aimed to examine the level of job stress, and the relationships between authentic leadership, work engagement, and job stress among dental nurses in Guizhou province, the People's Republic of China. The sample included 198 dental nurses from three stomatological hospitals selected using stratified random sampling. The Authentic Leadership Questionnaire (ALQ), 9-Utrecht Work Engagement Scale (UWES-9), and the Job Stress Questionnaire (JSQ) were applied, and the Cronbach's alpha coefficients were 0.98, 0.98, and 0.94, respectively. Data were analyzed using descriptive statistics, Spearman's rank-order correlation, and Pearson's correlation coefficient.

The results of this study showed that:

1. Dental nurses' overall job stress (M = 3.00, SD = 0.53), the dimension of workload (M = 3.14, SD = 0.77), and role conflict (M = 2.42, SD = 0.85) were at moderate levels, while role ambiguity (M = 2.28, SD = 0.91) and utilization of skills (M = 2.22, SD = 0.82) were at low levels.

2. Authentic leadership and work engagement had weak negative correlations with job stress (r_s = -.22, p < .01; r = -.21, p < .01, respectively).

Nursing administrators should create strategies for improving the authentic leadership of head nurses and the work engagement of dental nurses to help reduce their job stress. As the relationships between authentic leadership, work engagement, and job stress were not strong, further studies need to be done to explore other factors influencing job stress to find more appropriate strategies in order to help lessen dental nurses' job stress.

Keywords: Job stress; Authentic leadership; Work engagement; Dental nurses; Stomatological hospitals

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

62

บทคัดย่อ

พยาบาลทันตกรรมส่วนใหญ่อยู่ภายใต้ความเครียดในงานในระดับสูงมาก ในขณะที่ความเครียดในงาน สามารถนำมาซึ่งผลที่ไม่พึงประสงค์ในระบบสุขภาพ เช่น ทำให้ความคิดสร้างสรรค์ลดลง สร้างความขัดแย้ง ในที่ทำงาน และเป็นสาเหตุทำให้เกิดความไม่พึงพอใจในงานและปัญหาสุขภาพในพยาบาลทันตกรรม ดังนั้น การลดความเครียดในงานจึงมีความสำคัญในระดับต้น ๆ สำหรับผู้บริหารการพยาบาล การศึกษาแบบพรรณนา หาความสัมพันธ์นี้ มีวัตถุประสงค์เพื่อศึกษาระดับของความเครียดในงาน และความสัมพันธ์ระหว่างภาวะผู้นำ ที่แท้จริง ความผูกพันในงาน และความเครียดในงานของพยาบาลทันตกรรมในมณฑลกุ้ยโจว สาธารณรัฐประชาชน จีน กลุ่มตัวอย่างเป็นพยาบาลทันตกรรมจำนวน 198 คน จากโรงพยาบาลช่องปาก 3 แห่ง คัดเลือกโดยใช้การ สุ่มตัวอย่างแบบชั้นภูมิเก็บข้อมูลโดยใช้แบบสอบถามภาวะผู้นำที่แท้จริง แบบสอบถามความผูกพันในงานฉบับ 9 ข้อคำถาม และ แบบประเมินความเครียดในงาน ซึ่งมีค่า Cronbach's alpha coefficient เท่ากับ 0.94, 0.98 และ 0.98 ตามลำดับ วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา สถิติ Spearman's rank-order correlation และ Pearson's correlation coefficient

ผลการศึกษาพบว่า

1. ความเครียดในงานของพยาบาลทันตกรรมในภาพรวม (M = 3.00, SD = 0.53) ด้านภาระงาน (M = 3.14, SD = 0.77) และด้านความขัดแย้งในบทบาท (M = 2.42, SD = 0.85) อยู่ในระดับปานกลาง ในขณะที่ด้าน ความคลุมเครือในบทบาท (M = 2.28, SD = 0.91) และด้านการใช้ทักษะ (M = 2.22, SD = 0.82) อยู่ในระดับต่ำ

2. ภาวะผู้นำที่แท้จริงและความผูกพันในงาน มีความสัมพันธ์ทางลบกับความเครียดในงาน ในระดับต่ำ (r_s = -.22, p < .01; r = -.21, p < .01, ตามลำดับ)

ผู้บริหารทางการพยาบาล ควรหากลยุทธ์เพื่อพัฒนาภาวะผู้นำที่แท้จริงของหัวหน้าหอผู้ป่วย และความ ผูกพันในงานของพยาบาลทันตกรรมเพื่อลดความเครียดในงานของพยาบาลทันตกรรม และเนื่องจากความสัมพันธ์ ระหว่างภาวะผู้นำที่แท้จริง ความผูกพันในงาน และความเครียดในงานอยู่ในระดับต่ำ ดังนั้น จึงควรมีการศึกษา ต่อไปเพื่อค้นหาปัจจัยอื่นที่อาจมีอิทธิพลต่อความเครียดในงาน เพื่อนำไปสู่การคิดค้นกลยุทธ์ที่เหมาะสมในการช่วย ลดความเครียดในงานของพยาบาลทันตกรรม

คำสำคัญ: ความเครียดในงาน ภาวะผู้นำที่แท้จริง ความผูกพันในงาน พยาบาลทันตกรรม โรงพยาบาลช่องปาก

* วิทยานิพนธ์หลักสูตรพยาบาลศาสตรมหาบัณฑิต (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่
** นักศึกษา หลักสูตรพยาบาลศาสตรมหาบัณฑิต (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่
*** ผู้เขียนหลัก รองศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่ e-mail: ssirakamon@gmail.com
****รองศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

63

Background and significance

The World Health Organization (2020) predicted the global nursing shortage will reach 7.6 million by 2030. Nursing shortage in health care settings affect nurses' own health as it increases workload which may result in increased job stress (Ghafoor et al., 2021). The nursing shortage in China is increasing noticeably, and this includes dental nurses (Xinglian et al., 2023). China's dental nurses leave their jobs due to intense workload and inadequate pay (Xinglian et al., 2023). Moreover, there are no laws and regulations to regulate the scope of practice of dental nurses in China, and they have multiple roles in their work (Xinglian et al., 2023). They need to complete charging fees and make appointments in addition to cooperating with dentists to treat patients together (Xinglian et al., 2023). This situation makes dental nurses feel uncertain and conflicted with their ambiguous roles in daily practice. In addition, dental nurses in China work without training from specialized schools, mostly learning through their routine work. This results in inadequate capacity among these nurses and leads them to face job stress (Wenju et al., 2019).

Job stress is defined as any characteristics of the job environment which pose a threat to the individual (Caplan et al., 1975). It comprises four dimensions including workload, role conflict, role ambiguity, and underutilization of abilities. Many unfavorable consequences come from job stress; it can have a negative impact on quality of life of nurses, quality of care, and productivity, as well as increasing organizational costs (Babapour et al., 2022). Therefore, managing job stress is a major challenge for nurse administrators to improve nursing quality and organizational efficiency.

Several researchers have studied job stress around the world, using different measurements of job stress. However, few studies related to job stress among dental nurses were conducted in China and those findings showed an inconsistent level of job stress, ranging from low to high (Huang et al., 2008; Lei, 2012; Tingting & Yujing, 2021). Most studies on job stress among dental nurses in China have utilized the Chinese Nurse Stress Scale which has several items. However, this scale may not be suitable for measuring the job stress levels of dental nurses. In addition, no study has been previously conducted to explore job stress among dental nurses using the JSQ in China.

Based on the Person Environment fit (P-E fit) theory (French, 1974), authentic leadership (AL) and work engagement (WE) have been found to be factors related to job stress as presented in several studies below. Authentic leadership was defined as a pattern of nurse leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate. It comprises four components including self-awareness, internalized moral perspective, balanced processing of information, and relational transparency (Walumbwa et al., 2008). Authentic leaders view their followers as a team with collective knowledge and skills, striving to develop connectedness. When followers feel supported and valued as a member of a team, their job stress will be decreased (Johnson, 2019). Several studies have found that AL was negatively correlated with job stress among workers and teachers (Ismail et al., 2019; Qiao, 2015)

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

64

while one study showed no relationship between AL and job stress among employees (Dar et al., 2016). Fang et al. (2017) studied the correlation between each dimension of AL and job stress among nurses and found a negative correlation between AL and job stress. Furthermore, no studies have explored the relationship between AL and job stress using the ALQ (Han & Yang, 2009) or the JSQ (Xue, 2019) among dental nurses in stomatological hospitals in Guizhou, China.

Work engagement is a positive state of mind; engaged employees feel enthusiastic, proud, and challenged about their work. Therefore, they can concentrate on their tasks and put all their energy into them (Schaufeli et al., 2002). Engaged employees are more willing to learn and change their abilities to meet job demands more than ordinary employees (Yu, 2009). In China, two researchers found that a negative relationship existed between work engagement and job stress (Aydin, 2022; Wang et al., 2021). However, no studies have explored the relationship between WE and job stress using the UWES-9 (Schaufeli et al., 2006) or the JSQ (Xue, 2019) among dental nurses in stomatological hospitals in Guizhou, China.

Guizhou Province has its own unique conditions. It is located in southwestern China, a less developed area. The province covers 176,200 square kilometers, occupying 1.8% of China's territory. The province of Guizhou has three Grade-A specialist tertiary stomatological hospitals, including 916 dental treatments chairs, 241 hospital beds, 986 dentists, and 694 dental nurses who provide 38.56 million patients with high quality dental care (Xinglian et al., 2023). The dental nurses' salaries were about 2,500 yuan per month in Guizhou (Affiliated Stomatology Hospital of Guizhou Medical University, 2022) while they needed to perform multiple roles, cooperating with dentists to solve patients' problems with dental diseases. Further, sometimes they need to act as a dental or a medical technician (Xinglian et al., 2023). Therefore from 2021 to 2023, more than 50% of the dental nurses intended to leave their jobs, because of heavy workload (Guiyang Stomatological Hospital, Affiliated Stomatology Hospital of Guizhou Medical University, et al., 2023).

Through a literature review, it was found that research studies on job stress among dental nurses in China have yielded inconsistent results in different regions, using various instruments. Further, most studies utilized the CNSS, which includes several items that may not be suitable or applicable to dental care services. In addition, no previous study has been conducted to explore job stress among dental nurses using the JSQ in China. At the same time, although many studies have been done related to AL in different settings, the findings were inconsistent. Even so, using different measurements, previous studies have shown a link between AL and job stress. Additionally, there has been no study researching the correlation between AL, WE, and job stress among dental nurses in the People's Republic of China, especially in Guizhou.

Therefore, this study aimed to investigate job stress, and the relationship between AL, WE, and job stress among dental nurses in stomatological hospitals, Guizhou province, the People's Republic of China. The results of this study can be beneficial for nursing administrators to develop appropriate strategies to improve AL and WE to decrease job stress among dental nurses in

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

65

Guizhou, the People's Republic of China.

Research objectives

This study aimed to investigate job stress and to examine the correlations between authentic leadership, work engagement, and job stress.

Conceptual framework

Three conceptual models were applied for this study, including job stress of Caplan et al. (1975), AL of Walumbwa et al. (2008), and WE of Schaufeli et al. (2002). Job stress refers to any characteristics of the job environment which pose a threat to the individual, including workload, role conflict, role ambiguity, and under-utilization of abilities (Caplan et al., 1975). Authentic leadership is a pattern of leader behavior that draws upon and promotes both positive psychological capacities and a positive ethical climate, fostering positive self-development. It includes four components: self-awareness, internalized moral perspective, balanced processing of information, and relational transparency (Walumbwa et al., 2008). Work engagement is a positive state of mind characterized by vigor, dedication, and absorption.

In the P-E fit model (French, 1974), the person-supervisor fit dimension can explain the relationship between AL and job stress. Supervisors with AL help shape their employees' environmental experiences through their own values and actions. Supervisors can thus increase the trust of subordinates and align the goals of superiors and subordinates (Johnson, 2019). Authentic leadership, hence, can increase the person-supervisor fit, resulting in reduced job stress (Johnson, 2019). The person-job fit dimension in the P-E fit model can explain the relationship between WE and job stress. Engaged employees are more willing to learn and change their abilities to meet job demands than ordinary employees (Yu, 2009). Employees with better demands-abilities fit experience less job stress (Peng & Mao, 2015). Therefore, this study examined the level of job stress, the relationship between AL and job stress, and the relationship between WE and job stress among dental nurses.

Methodology

Descriptive correlational research was used in this study.

Population and sample

The target population of this study was 363 nurses from three Grade-A specialist tertiary stomatological hospitals in Guizhou province, China.

The sample, calculated by the Yamane formula, consisted of 229 participants, including 20% for potential attrition. A proportional stratified random sampling method was then used to select participants from each hospital, and dental nurses were identified by simple random sampling from the selected list until the required number of nurses was obtained. The inclusion criteria were dental nurses who had at least one year of working experience at one of the three stomatology hospitals. The exclusion criteria were dental nurses who were on leave, on vacation,

or in continuing education programs during the study period, and nurse administrators.

Research instruments

Instruments used in this study included four parts.

1. A demographic data form including age, gender, marital status, number of children, work experience, job contract category, name of the hospital, and working department.

2. The 16-item Chinese Version of the ALQ developed by Walumbwa et al. (2008) and translated by Han and Yang (2009). This questionnaire uses a 5-point Likert-type scale ranging from 0 = strongly disagree to 4 = strongly agree and is comprised of self-awareness (4 items); moral perspective (4 items); balanced processing (3 items); and relational transparency (5 items). Authentic leadership was classified into three levels: low (0-1.33), average (1.34-2.67), and high (2.68-4.00).

3. The 9-item Chinese Version of the UWES developed by Schaufeli et al. (2006). The nine items cover vigor (3 items); dedication (3 items); and absorption (3 items) and are rated on a 7-point Likert-type scale ranging from 0 ("never") to 6 ("every day"). Five levels of work engagement were identified: very low (≤ 1.77), low (1.78-2.88), average (2.89-4.66), high (4.67-5.50), and very high (≥ 5.51).

4. The 15-item Chinese version of the JSQ developed by Caplan et al. (1975) and modified by Xue (2019) includes 15 items in four subscales: workload (7 items), role conflict (2 items), role ambiguity (3 items), and utilization of skills (3 items). Among these dimensions, utilization of skills (3 items) was reversed scored. The items are scored on a 5-point Likert-type scale ranging from 1 = strongly disagree to 5 = strongly agree. The mean scores of job stress (overall and each dimension) were divided into three levels: low (1.00-2.33), moderate (2.34-3.66), and high (3.67-5.00). In this study, it was used to measure the participant's current job stress.

With permission from the authors, the researcher used the ALQ, UWES-9, and JSQ without any modification; therefore, the researcher did not test for validity prior to the study. The reliability of the ALQ, UWES-9, and JSQ was tested with 15 participants from the Affiliated Stomatology Hospital of Guizhou Medical University and Cronbach's alpha coefficients were 0.98, 0.98, and 0.94, respectively.

Ethical considerations

This research proposal was approved by the Research Ethical Committee (No. 086/2023) of the Faculty of Nursing, Chiang Mai University. Permission for data collection was obtained from the directors of the nursing departments in the three stomatological hospitals. The participants gave their consent to participate in the study after receiving information on the research purposes, processes, instruments, confidentiality, and anonymity, and their right to refuse to participate in this research.

Data collection

Data were collected from the three stomatological hospitals in Guizhou province, the P.R. China. Researchers prepared two links using the software WenJuanXin. Then, the researcher put

an information sheet and informed consent form in one link and put the questionnaire in the next link. The three research coordinators from the hospitals created three Wechat groups and distributed the links to the participants. The completed questionnaires were collected using the researcher account of the WenJuanXin software. In total, 201 (87.88%) questionnaires were returned out of 229. After excluding those that were incomplete, 198 (86.46%) questionnaires were used for data analysis.

Data analysis

Statistical Package for Social Sciences (SPSS) 16.0 was used to analyze the data. The demographic data, job stress, AL, and WE were analyzed by using descriptive statistics. The overall, and each dimension of, WE and job stress were found to have normal distribution while the overall and each dimension of AL was found to be non-normal. Therefore, Pearson's correlation was used to test the correlation between the overall, and each dimension of, WE and job stress, and Spearman's rank-order correlation was used to analyze the relationship between the overall, and each dimension of, AL and job stress.

Results

Most participants were between 26 and 30 years of age (51.01%). Most were female (91.41%) and over half of them were married (61.62%). The largest number (64.14%) had more than one child in their family. The vast majority (90.40%) had less than 10 years' work experience. Most of the subjects held a temporary contract (93.43%). The largest number of them (35.86%) were from Guiyang Stomatological Hospital and worked in the oral and maxillofacial surgery unit (13.64%).

The average score for overall job stress was at a moderate level (M = 3.00, SD = 0.53). Workload (M = 3.14, SD = 0.77) and role conflict (M = 2.42, SD = 0.85) were also at moderate levels, while role ambiguity (M = 2.28, SD = 0.91) and utilization of skills (M = 2.22, SD = 0.82) were at low levels (Table 1).

Table 1 Level of Job Stress of Participants (n = 198)

Variable	M	SD	Level
Overall job stress	3.00	0.53	Moderate
Dimension of job stress			
Workload	3.14	0.77	Moderate
Role conflict	2.42	0.85	Moderate
Role ambiguity	2.28	0.91	Low
Utilization of skills	2.22	0.82	Low

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

68

The average score for overall AL was at a high level (M = 3.02, SD = 0.78). Relational transparency (M = 3.00, SD = 0.84), moral perspective (M = 3.00, SD = 0.81), and self-awareness (M = 3.00, SD = 0.84) were also at high levels, while balanced processing (M = 2.64, SD = 0.84) was at a moderate level (Table 2).

Table 2 Mean, Standard Deviation, and Level of Each Dimension of AL (n = 198)

Variable	M	SD	Level
Overall AL	3.02	0.78	High
Dimension of AL			
Relational transparency	3.00	0.84	High
Moral perspective	3.00	0.81	High
Balanced processing	2.64	0.84	Moderate
Self-awareness	3.00	0.84	High

The average score for overall WE was at an average level (M = 3.43, SD = 1.32). The three dimensions for WE, vigor (M = 3.45, SD = 1.28), dedication (M = 3.71, SD = 1.35), and absorption (M = 3.14, SD = 1.54), were also at average levels (Table 3).

Table 3 Mean, Standard Deviation, and Level of Each Dimension of WE (n = 198)

Variable	M	SD	Level
Overall WE	3.43	1.32	Average
Dimension of WE			
Vigor	3.45	1.28	Average
Dedication	3.71	1.35	Average
Absorption	3.14	1.54	Average

Overall AL had a weak negative correlation with job stress (r = -.22, p < .01). In addition, relational transparency (r = -.19, p < .01), internalized moral perspective (r = -.17, p < .05), and self-awareness (r = -.21, p < .05) also had a weak negative correlation with job stress while balanced processing (r = -.91, p > .05) had no correlation with job stress (Table 4).

Table 4 Spearman's Rank Correlation Coefficient Between Overall and Each Dimension of Authentic Leadership and Overall Job Stress (n = 198)

	Overall job stress
Authentic leadership	
Overall AL	-.22*
Relational transparency	-.19*
Internalized moral perspective	-.17**
Balanced processing	-.91
Self-awareness	-.21**

* p < .01 ** p < .05

Overall WE had a weak negative correlation with job stress (r = -.21, p < .01). At the same time, vigor (r = -.19, p < .01), dedication (r = -.26, p < .01), and self-awareness (r = -.16, p < .05) also had a weak negative correlation with job stress (Table 5).

Table 5 Pearson's Rank Correlation Coefficient Between Overall and Each Dimension of Work Engagement and Overall Job Stress (n = 198)

	Overall job stress
Work engagement	
Overall WE	-.21*
Vigor	-.19*
Dedication	-.26*
Absorption	-.16**

* p < .01   ** p < .05

Discussion

This study found that the job stress of dental nurses in the stomatological hospitals of Guizhou province was at a moderate level. Similarly, workload and role conflict were also at moderate levels, whereas role ambiguity and utilization of skills were at low levels. Therefore, the findings were inconsistent with the study among Chinese pharmacists by Lan et al. (2020) which found that overall job stress was at a high level. These different results might be because that study was conducted among different subjects in a different context.

Several reasons might explain the moderate level of job stress among dental nurses. The first explanation is the reason of participants' high workload as the patient-to-dental nurse ratio was high (8.5:1) while the standard ratio should be 3:1 (Affiliated Stomatology Hospital of Guizhou Medical University, 2023). Moreover, the three Grade A stomatological institutions in this study must provide their 38.56 million patients with high-quality oral care under demanding workloads, resulting in job stress among dental nurses (Ghafoor et al., 2021).

A second possible explanation is the reason regarding role conflict. In China, because of shortages of dental nurses, they need to complete many tasks simultaneously. They not only need to cooperate with dentists to provide treatment to their patients, but sometimes they also need to act as dental or medical technicians leading to feelings of conflict and job stress (Xinglian et al., 2023). The third possible explanation for the moderate level of job stress of dental nurses is the insufficient resources supplied by the hospitals. In addition, the nurses' average salaries were about 2,500 yuan per month (Affiliated Stomatology Hospital of Guizhou Medical University, 2022). That amount of money is not enough to meet their needs as the average cost of daily living per month is about 3200 yuan (National Bureau of Statistics of China, 2023). However, hospital policies and variables may reduce dental nurses' job stress. The three hospitals in this study are teaching institutes; thus, nursing students can help dental nurses lessen their workload

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

70

(Guiyang Stomatological Hospital, SHGMU, et al., 2023).

Additionally, the hospitals use an integrated management model that encourages effective communication between doctors and nurses (Lingyun, 2021), thus reducing the role conflict and leading to decreased job stress. Another possible explanation is that the dimension of utilization of skills among the subjects in this study was low. Although there is no specialized school for dental nurses with standardized training (Xinglian et al., 2023), the hospitals provided continuous learning and training among personnel. Therefore, the abilities of dental nurses could be improved. A final reason involves the low level of role ambiguity. A possible explanation for this is that before beginning to work, new staff must attend a training program and rotate to work in all departments to learn essential knowledge, skills, and roles related to the stomatology of each position (Guiyang Stomatological Hospital et al., 2018). For these reasons, the dental nurses perceived role ambiguity at a low level which led them to feel less job stress.

Additionally, based on the P-E fit theory, according to the reasons mentioned above, the environmental demands were higher (job requirements, role expectations), while the personal abilities of dental nurses were also constantly increasing. Therefore, the demands-abilities fit was reasonable, and thus, job stress was moderate (Peng & Mao, 2015).

The results of this study revealed a weak negative correlation between AL and job stress. The relation between both variables can be explained as follows. If nurses feel that their head nurses are frank, have the courage to admit mistakes, and display objectivity and fairness, the nurses will feel trust, and be optimistic, confident, and hopeful. This AL style of head nurses could create a relaxed working environment that helped dental nurses as subordinates to handle their job stress (Johnson, 2019). The results of this study are similar to Qiao (2015) and Ismail et al. (2019) who found that AL was negatively related to job stress. However, the result is inconsistent with the study by Dar et al. (2016) who found that AL was not correlated with job stress. A possible reason for these diverse results might be due to different research fields, samples, locations, and cultural discrepancies.

Likewise, the results of this study showed that there was a weak negative significant correlation between WE and job stress. A possible reason to explain the relationship between WE and job stress may be that when dental nurses perceive high work engagement, they can contribute to proactive stress coping. In addition, when they face challenges, they actively learn and adapt their abilities to the demands (Aydin, 2022). These learning behaviors make dental nurses have a higher demands-abilities fit, and the high fit makes for less job stress (Choi, 2004). The results of this study are consistent with studies by Aydin (2022) and Wang et al. (2021) which found a negative relationship between job stress and work engagement.

The findings of this study also revealed a weak negative correlation between each dimension of both AL and WE and job stress, except for the relation between balanced processing of AL and job stress which showed no association between them (Table 4 and 5). Such findings supported the correlation found between AL and job stress and between WE and job stress which

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

71

showed a weak negative relationship. A possible reason for these results might be because there are many mediating factors affecting AL, WE, and job stress, such as psychological capital and others (Qiao, 2015). Therefore, the relationships between AL and job stress and WE and job stress in this study were not strong.

Conclusion

Stress levels of dental nurses in the stomatological hospitals of Guizhou Province were at a moderate level. Workload and role conflict were also at moderate levels, while role ambiguity and utilization of skills were at low levels. Authentic leadership and work engagement had weak negative correlations with job stress.

Application of research findings

Hospitals and nurse administrators should be concerned and create strategies to provide head nurses with leadership skills training to help them improve their AL, especially the balanced processing aspect. They should also create effective strategies to improve WE through providing nurses with reasonable payment and benefits, resulting in reduced job stress.

Suggestions for further research

Further studies should be conducted in different levels of hospitals throughout all areas of China. Additional research should be conducted on job stress among other levels of dental nurses, such as head nurses. Future studies investigating the relationship between WE, AL, and job stress should be replicated in Grade-A specialist tertiary stomatological hospitals in other parts of China to confirm the findings of this study. In addition, further studies need to be done to explore other factors influencing job stress to find more appropriate strategies to help lessen dental nurses' job stress.

References

Affiliated Stomatology Hospital of Guizhou Medical University. (2022). *Income statistics of medical staff*. *Report on salary standard of employees of unplanned contract system.*

Affiliated Stomatology Hospital of Guizhou Medical University. (2023). *Daily workload registration*. *Hospital Annual Review Report*. (in Chinese)

Aydin, I. (2022). Effects of work-related stressors and work engagement on work stress: Healthcare managers' perspective. *Central European Business Review, 11*(4), 47-62. https://doi.org/10.18267/j.cebr.299

Babapour, A. R., Gahassab-Mozaffari, N., & Fathnezhad-Kazemi, A. (2022). Nurses' job stress and its impact on quality of life and caring behaviors: A cross-sectional study. *BMC Nursing, 21*(1), 75. https://doi.org/10.1186/s12912-022-00852-y

Caplan, R. D., Cobb, S., French, J. R. P., Van Harrison, R. V., & Pinneau, S. R. (1975). *Job Demands and worker health: Main effects and occupational differences*. Government Printing Office.

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

72

Choi, J. N. (2004). Person-environment fit and creative behavior: Differential impacts of supplies-values and demands-abilities versions of fit. *Human Relations, 57*(5), 531-552. https://doi.org/10.1177/0018726704044308

Dar, F., Bukhari, I., & Hamid, M. (2016). Relationship between authentic leadership, work engagement and job stress among employees of telecommunication organizations. *Peshawar Journal of Psychology and Behavioral Sciences (PJPBS), 2*(2), 235-248. https://doi.org/10.32879/pjpbs.2016.2.2.235-247

Fang, J., Shiqun, Z., Zhi, L., Chunyan, T., & Dongxue, L. (2017). Study on the influence of head nurses' authentic leadership on nurses' work stress. *Chongqing Medical Journal, 46*(7), 999-1001.

French, J. R. P. (1974). *Adjustment as person-environment fit*. Coping and adaptation. https://ci.nii.ac.jp/naid/10016045575/

Ghafoor, Y., Yaqoob, A., Bilal, A., & Ghafoor, M. (2021). Impact of nurse shortage on patient care. *Saudi Journal of Nursing and Health Care, 4*(4), 114-119. https://doi.org/10.36348/sjnhc.2021.v04i04.003

Guiyang Stomatological Hospital, Affiliated Stomatology Hospital of Guizhou Medical University, & Affiliated stomatology hospital of Zunyi Medical University. (2023). *Dental nurse turnover report*. Hospital Annual Review Report.

Guiyang Stomatological Hospital, SHGMU, & SHZMU. (2018). *Personnel annual recruitment plan*. Hospital Annual Report.

Guiyang Stomatological Hospital, SHGMU, & SHZMU. (2023). *Nursing training base*. https://www.gmc.edu.cn/info/1131/13538.htm (in Chinese)

Han, Yi., & Yang, B. (2009). Authentic leadership: Theory, measurement and latest research progress. *Science and Science and Technology Management, 30*(2), 170-175.

Huang, H., Xiaoyun, J., & Yingli, Z. (2008). A survey on the working stress of outpatient nurses in stomatology department. *Chinese Journal of Nursing, 43*(10), 934-936.

Ismail, S. N., Abdullah, A. S., & Abdullah, A. G. K. (2019). The effect of school leaders' authentic leadership on teachers' job stress in the eastern part of Peninsular Malaysia. *International Journal of Instruction, 12*(2), 67-80.

Johnson, S. L. (2019). Authentic leadership theory and practical applications in Nuclear Medicine. *Journal of Nuclear Medicine Technology, 47*(3), 181-188. https://doi.org/10.2967/jnmt.118.222851

Lan, Y. L., Huang, W. T., Kao, C. L., & Wang, H. J. (2020). The relationship between organizational climate, job stress, workplace burnout, and retention of pharmacists. *Journal of Occupational Health, 62*(1), e12079. https://doi.org/10.1002/1348-9585.12079

Lei, S. (2012). Stress analysis of stomatology outpatient nurses. *A compilation of papers from the national symposium on new progress in oral care,* (pp. 422-424).

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

73

Lingyun, X. (2021). Application of integrated medical management model in oral care. *Dietary Health Care, 9*, 209.

National Bureau of Statistics of China. (2023). *National per capita income and expenditure*. https://www.stats.gov.cn/sj/ndsj/2023/indexch.htm (in Chinese)

Peng, Y., & Mao, C. (2015). The impact of person–job fit on job satisfaction: The mediator role of self efficacy. *Social Indicators Research, 121*, 805-813. https://doi.org/10.1007/s11205-014-0659-x

Qiao, Z. (2015). The *empirical research about perception of authentic leadership and employees' psychological capital impact on employees' job stress* [Master's thesis, Zhejiang Sci-Tech University]. https://d.wanfangdata.com.cn/thesis/D630811 (in Chinese)

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716. https://www.wilmarschaufeli.nl/publications/Schaufeli/251.pdf

Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being, 3*(1), 71-92. https://doi.org/10.1023/A:1015630930326

Tingting, Y., & Yujing, W. (2021). Correlation between work stress and work-related resilience among dental nurses. *Health Vocational Education, 39*, 133-135.

Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based measure. *Journal of Management, 34*(1), 89-126. https://doi.org/10.1177/ 0149206307308913

Wang, Y., Gao, Y., & Xun, Y. (2021). Work engagement and associated factors among dental nurses in China. *BMC Oral Health, 21*(1), 402. https://doi.org/10.1186/ s12903-021-01766-y

Wenju, Y., Renhui, Q., & Chun, H. (2019). Training and effect evaluation of dental nurses in hospital. *Modern Health Preservation, 14*, 248-249.

World Health Organization. (2020). *State of the world's nursing 2020: Executive summary*. World Health Organization. https://iris.who.int/handle/10665/331673

Xinglian, S., Taiping, W., & Li, L. (2023). Investigation on the status quo of oral medical human resources and health services in public hospitals in Guizhou Province. *Nurse Refresher Magazine, 38*, 1527-1530.

Xue. (2019). *Examining the causal relationships among information literacy, work stress, job performance and self-efficacy: A case study of the coast guard administration, ocean affairs council* [Unpublished master's thesis]. National Taitung University.

Yu, K. Y. T. (2009). Affective influences in person–environment fit theory: Exploring the role of affect as both cause and outcome of PE fit. *Journal of Applied Psychology, 94*(5), 1210-1226. https://doi.org/10.1037/a0016403

Nursing Journal CMU Volume 52 No.2 April-June 2025
พยาบาลสาร มหาวิทยาลัยเชียงใหม่ ปีที่ 52 ฉบับที่ 2 เมษายน-มิถุนายน 2568

74