The Effects of Work Satisfaction and Work Flexibility on Burnout in Nurses

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ABSTRACT

Background: The World Health Organization has encouraged improving working conditions for nurses to decrease turnover and increase nurse staffing and nursing capacity. The International Council of Nurses has pointed out that a positive work environment can improve satisfaction and decrease burnout in nurses. However, the effects of working conditions and work satisfaction on burnout in nurses remain unclear.

Purpose: The purpose of this study was to explore the effects of working-condition-related flexibility and work satisfaction on burnout in nurses.

Methods: A cross-sectional design was employed, and 450 nurses from a single medical center participated in this study. In addition to demographic information, three survey instruments, including the Taiwanese Hospital Nurses’ Job Satisfaction Scale, the Working Conditions and Flexible System Scale, and the Maslach Burnout Inventory-Chinese Version, were used to measure working condition flexibility, work satisfaction, and burnout. Descriptive statistics, the Pearson correlation coefficient, and hierarchical linear regression were used to analyze the data.

Results: Four hundred thirty-five nurses were enrolled as participants. Most were female, with a mean age of 29 years. Over four fifths (83.1%) were unmarried, and 65.5% had at least 2 years of prior experience working at other hospitals. Although the participants reported experiencing burnout several times per month, they reported feeling satisfied with their work. They noted flexibility related to working conditions, especially task-related flexibility, as important. Four variables (satisfaction/professional autonomy, interpersonal interaction, workload, and working condition flexibility/task flexibility) were found to be significant predictors of emotional exhaustion (adjusted $R^2 = 0.212$). However, only professional autonomy was found to significantly predict a sense of low personal accomplishment (adjusted $R^2 = 0.077$), whereas nursing competence significantly predicted depersonalization (adjusted $R^2 = 0.086$).

Conclusions: Work satisfaction and flexibility related to working conditions were shown to relate negatively to burnout. Nursing managers should improve the level of satisfaction related to professional autonomy, interpersonal interaction, and workload as well as task flexibility for nurses.

Key Words: nurses’ burnout, work satisfaction, working condition flexibility.

Introduction

The World Health Organization (WHO, 2016) has identified the nursing workforce and nursing capacity as vital to achieving universal health. Although the number of professionals has been increasing gradually, nurse staffing numbers remain insufficient to meet current healthcare demands. Therefore, countries should strengthen the nursing workforce and nursing capacity by ensuring adequate equipment and resource supplies, including the provision of appropriate working conditions and remuneration, to promote nursing staff recruitment and retention efforts (WHO, 2016).

According to the 20th International Council of Nurses Asia Workforce Forum in 2019, the WHO has identified continuing shortages in the care workforce in East Asia as well as in Africa and Southeast Asia, which are expected to be the regions experiencing the worst care-workforce shortages by 2030 (L. Wang et al., 2017). In a large-sample survey, a positive relationship was found between work flexibility policies and human resources management (Huang et al., 2016). Therefore, hospitals have been encouraged to develop flexible working conditions that meet the job needs of nursing staff to improve job satisfaction levels. According to the Ministry of Health and Welfare, Taiwan, ROC (2019), the turnover rate for the country’s nursing workforce is about 10%, and 35%–75% of hospitals face difficulties recruiting nurses. Moreover, the pool of nurses aged 20–30 years is declining annually, and an increasing number of nurses are retiring early, when they are in their 40s.

An important relationship between the reasons for nursing shortages and burnout has been shown in previous studies (Back et al., 2020; Kelly et al., 2021; Lee et al., 2019). Burnout is an emotional condition arising from interacting with one’s environment that includes three dimensions: emotional exhaustion, low sense of personal accomplishment, and...
Depersonalization. Individuals who are under continuous work stress may perceive their environment as dehumanizing and promoting a reduced sense of personal achievement.

A survey of a stratified random sample of nursing staff at 35 hospitals in Taiwan showed that 80% reported moderate or severe burnout (Lee & Yen, 2017), indicating that the problem of nursing staff burnout in Taiwan is critical and should be treated proactively. The International Council of Nurses has encouraged fostering positive practice environments that promote job satisfaction and reduce burnout in nurses to promote higher rates of retention. High-quality workplace environments have been shown to increase staff satisfaction and reduce burnout in nurses (Asiret et al., 2017; L. Wang et al., 2017; Wu et al., 2020), which may be expected to reduce intention to leave.

Liu et al. (2016) presented three characteristics of nursing job satisfaction: (a) The working environment meets the expectations of the nurse, (b) the working conditions make the nurse happy, and (c) the nurse feels the value and fairness of the work. Tseng et al. (2017) identified the following five components of job satisfaction in nurses: (a) supportive practice environment, (b) professional autonomy and development, (c) interpersonal interaction and cooperation, (d) leadership style of supervisors, and (e) workload. Therefore, the factors that affect job satisfaction in nursing staff are multifaceted and need to be considered based on multiple aspects of the entire practice environment such as work job demand, job control, and social support (Abadi et al., 2021). Other researchers have identified a positive relationship between professional autonomy and personal accomplishment (Carvalho et al., 2020; O’Connor et al., 2018) and that excessive task workloads increase burnout (Hornung et al., 2019; MacPhee et al., 2017; Yestiana et al., 2019). Furthermore, interpersonal interaction has been shown to be an important factor underlying emotional exhaustion (S. Wang et al., 2015; Zhao & Jiang, 2021).

Fostering a positive working environment requires providing good working conditions for staff and a flexible system that increases willingness to stay on the job (Huang et al., 2016). Huang and colleagues explored the relationship between intention to leave and flexibility related to working conditions, finding that more-flexible working conditions led to greater work engagement among nurses. Flexibility in working conditions was found to comprise the dimensions of (a) task, (b) numerical, (c) divisional, (d) temporal, (e) wages, and (f) leadership (Huang et al., 2016; Huang & Lu, 2017). Task flexibility refers to functional changes used to improve employee mobility and adaptability or to develop the multiple skills necessary to respond quickly to changes in job requirements and technological developments. Numerical flexibility refers to when an enterprise, in the face of changes in output demand, adjusts the number of employees in a timely manner to meet real needs, maintain the balance between labor supply and demand, and reduce labor costs. Divisional flexibility refers to the division of the required manpower into core and peripheral human resources. Temporal flexibility refers to providing employees with the flexibility to work and take time off by changing hours or the number of hours worked to meet both the employee’s needs and the needs of the business in terms of operational patterns and customer needs. Wage flexibility refers to changing the traditional fixed pay structure and adopting a personalized and payroll system. Leadership flexibility refers to the need for leaders to be flexible in terms of leadership and management in the face of changes and challenges in the practice environment (Huang & Lu, 2017). Task flexibility has also been found to be correlated with clinical competence, with the capacity to face complex tasks higher at higher levels of competence (Hornung et al., 2019; Ose et al., 2019) and job-induced stress affecting the level of emotional exhaustion (Liao et al., 2020).

The effects of working condition flexibility and job satisfaction on burnout in nurses remain unclear in extant research. Thus, the purpose of this study was to explore the effects of flexibility in terms of working conditions and job satisfaction on burnout.

**Methods**

**Design and Sample**

This cross-sectional study was designed to explore the relationships between burnout and, respectively, work satisfaction and work flexibility. The study setting was the medical, surgical, and intensive care units of the nursing department in a medical center in southern Taiwan. On the basis of the G*Power estimation (effect size $f^2 = 0.15$, error probability $= .03$, power $= 0.8$, number of predictors $= 11$), the required minimum sample size was 123. However, as the participants were from three different areas (general surgical, general medical, and adult intensive care units), the final sample size targeted was 369. After considering the 20% loss rate, 450 participants were enrolled. The inclusion criterion was nurses who had worked for over 1 month, and the exclusion criterion was nurses who had taken sick leave for over 1 month. Data were collected from May to June 2019.

**Instruments**

The data collected included demographic data as well as three inventories, including the Taiwanese Hospital Nurses’ Job Satisfaction Scale, the Working Conditions and Flexible System Scale (WCFS), and the Maslach Burnout Inventory-Chinese Version. The Taiwanese hospital nurses’ job satisfaction scale

The Taiwanese Hospital Nurses’ Job Satisfaction Scale, developed by Tseng et al. (2017), comprises five dimensions with 31 items measured using a 5-point Likert scale ranging from 1 = very unsatisfactory to 5 = very satisfactory. The five dimensions include supportive working
environment (nine items), professional autonomy and growth (nine items), interpersonal interaction and collaboration (six items), leadership style (four items), and nursing workload (three items), for which the Cronbach’s α values are .96, .93, .93, .88, .95, and .86, respectively.

The working conditions and flexible system scale
The WCFS, developed by Huang et al. (2016), is a 113-item working conditions and flexible system scale with six dimensions, including task (19 items), numerical (eight items), divisional (eight items), temporal (21 items), wages (24 items), and leading flexibility (33 items). The WCFS is measured using a 5-point Likert scale ranging from 1 = very unimportant to 5 = very important. The overall Cronbach’s α is .88.

The Maslach burnout inventory-Chinese version
The 22-item Maslach Burnout Inventory with three dimensions was developed by Maslach (1982). The Maslach Burnout Inventory is scored using a 7-point Likert scale ranging from 0 = never to 6 = always. The three dimensions include emotional exhaustion (eight items), low personal accomplishment (nine items), and depersonalization (five items). The 20-item Maslach Burnout Inventory-Chinese Version with three dimensions was modified by Lee et al. (2013) to include emotional exhaustion (eight items), low personal accomplishment (eight items), and depersonalization (four items). The overall Cronbach’s α values for overall, emotional exhaustion, low personal accomplishment, and depersonalization are .85, .91, .86, and .65, respectively.

Ethical Considerations
Data collection began after approval from the institutional review board of the National Cheng Kung University Hospital, Taiwan (No. A-ER-108037). No information that could be used to identify individual participants was collected. The participants answered the questionnaires via an online Google sheet, and nurse leaders were not informed regarding who participated in the study or the survey results.

Data Analysis
The data were analyzed using IBM SPSS Statistics Version 18.0 (IBM Inc., Armonk, NY, USA). The descriptive data were presented in a frequency and percentage format for categorical data and in a mean and standard deviation format for continuous data. Pearson’s product–moment correlation coefficient was used to measure the correlations between the continuous data. The predictive value of the variables was analyzed using a hierarchical regression.

Results

Demographic Characteristics
Four hundred fifty inventories were delivered to nurses, and 437 responses were received. Because of incomplete data, 435 were included in the final analysis.

Most of the participants were female and educated at the bachelor’s level. The mean age was 29 years, 83.1% were unmarried, 81% had no prior working experience in other hospitals, and 65.5% were employed at a senior (over 2 years) level. The mean burnout score was 1.99, and the

Table 1
Demographic Characteristics of Participants (N = 435)

| Variable                                  | n   | %    |
|-------------------------------------------|-----|------|
| Gender                                    |     |      |
| Male                                      | 19  | 4.4  |
| Female                                    | 416 | 95.6 |
| Education                                 |     |      |
| College                                   | 12  | 2.8  |
| University                                 | 422 | 97.2 |
| Marital status                            |     |      |
| Single                                    | 360 | 83.1 |
| Married                                   | 73  | 16.9 |
| Working experience in other hospitals     |     |      |
| No                                        | 349 | 81.2 |
| Yes                                       | 81  | 18.8 |
| Nursing competence level                   |     |      |
| Novice (under 2 years)                    | 154 | 35.5 |
| Senior (over 2 years)                     | 280 | 65.5 |

| Variable                                  | Mean | SD  |
|-------------------------------------------|------|-----|
| Age                                       | 29.00| 6.15|
| Seniority                                 | 5.77 | 7.55|
| Burnout total                             | 1.99 | 0.85|
| Burnout: emotional exhaustion             | 2.93 | 1.26|
| Burnout: low personal accomplishment      | 1.78 | 0.99|
| Burnout: depersonalization                | 1.27 | 1.25|
| Satisfaction total                        | 3.77 | 0.51|
| Satisfaction: supportive environment      | 3.81 | 0.57|
| Satisfaction: professional autonomy       | 3.76 | 0.54|
| Satisfaction: interpersonal interaction   | 3.86 | 0.55|
| Satisfaction: leadership                  | 3.87 | 0.69|
| Satisfaction: workload                    | 3.40 | 0.72|
| Work flexibility total                    | 3.66 | 0.82|
| Work flexibility: task                    | 3.86 | 0.55|
| Work flexibility: numerical               | 3.83 | 0.69|
| Work flexibility: divisional              | 3.72 | 0.70|
| Work flexibility: temporal                | 3.49 | 0.63|
| Work flexibility: wage                    | 3.73 | 0.72|
| Work flexibility: leadership              | 3.81 | 0.65|

a Missing data.
scores for the three subscales were all less than 3, indicating that the participants experienced burnout around 2 times per month. Emotional exhaustion earned the highest score of the three subscales. The mean score for work satisfaction was 3.77 and ranged between 3.40 and 3.87 for the subscales. This meant that the participants' satisfaction with the leadership was ranked the highest. The mean score for work flexibility was 3.66, and all subscales earned scores over 3.5, indicating that the participants considered work flexibility to be important, with task flexibility earning the highest subscale score (Table 1).

**Correlations Among Burnout, Satisfaction With the Hospital, and Work Flexibility**

A low-to-medium negative correlation was found between the emotional exhaustion dimension of burnout and all dimensions of satisfaction with the hospital ($r = -0.312$ to $-0.425$). Moreover, a low correlation ($r = -0.274$ to $-0.328$) was identified between emotional exhaustion and all dimensions of work flexibility. The two variables (the professional autonomy dimension of satisfaction and the divisional dimension of work flexibility) exhibited the strongest correlations with emotional exhaustion. With regard to the low personal accomplishment dimension of burnout, a low and negative correlation was identified between low personal accomplishment and all dimensions of satisfaction with the hospital ($r = -0.129$ to $-0.278$). Similar results were also found for all dimensions of work flexibility ($r = -0.117$ to $-0.182$), with a low negative correlation between the depersonalization dimension of burnout and all dimensions of satisfaction with the hospital ($r = -0.185$ to $-0.264$) and work flexibility ($r = -0.123$ to $-0.203$).

The supportive environment dimension of satisfaction with the hospital was found to be highly related to all dimensions of work flexibility ($r = 0.608$ to $0.720$), especially task work flexibility ($r = 0.720$; Table 2).

**The Hierarchical Regression Analysis of the Variables Predicting Burnout**

The demographic variables and all dimensions of satisfaction and work flexibility were included in the hierarchical regression analysis (Table 3). The four variables of professional autonomy ($\beta = -0.252$, $p = 0.002$), interpersonal interaction ($\beta = -0.194$, $p = 0.008$), low workload ($\beta = -0.171$, $p = 0.005$), and task flexibility ($\beta = -0.273$, $p = 0.001$) were found to be significant predictors of emotional exhaustion, with an adjusted variance of explanation of 21.2%. This finding indicates that professional autonomy, interpersonal interaction, workload, and task flexibility are negatively related to emotional exhaustion. Thus, emotional exhaustion should decrease in nurses with greater professional autonomy, better interpersonal interaction, lower workloads, and higher task flexibility.

However, only professional autonomy ($\beta = 0.338$, $p < 0.001$) was found to significantly predict personal accomplishment, with an adjusted variance of explanation of 7.7%. This finding indicates that improving professional autonomy has a positive effect on personal accomplishment.

Furthermore, nursing competence ($\beta = 0.184$, $p = 0.002$) was the only variable identified as a predictor of depersonalization, with an adjusted variance of explanation of 8.6%.

**Table 2**

**Correlations Among Burnout, Satisfaction, and Work Flexibility (N = 435)**

| Variable       | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| B-EE           | .115* | .490**| -.312**| -.425**| -.412**| -.342**| -.398**| -.274**| -.287**| -.328**| -.304**| -.274**| -.323**|
| B-LPA          | .197**| -.157**| -.278**| -.173**| -.129**| -.092**| -.182**| -.117**| -.131**| -.094**| -.143**| -.172**|
| B-DP           | -.241**| -.229**| -.264**| -.185**| -.210**| -.203**| -.155**| -.172**| -.123**| -.128**| -.192**|
| S-SE           | .709**| .636**| .604**| .526**| .720**| .612**| .649**| .608**| .630**| .705**|
| S-II           | .718**| .621**| .612**| .697**| .535**| .596**| .577**| .573**| .679**|
| S-PA           | .660**| .574**| .677**| .529**| .611**| .554**| .555**| .660**|
| S-L            | .518**| .602**| .564**| .553**| .530**| .514**| .653**| .653**|
| S-WL           | .560**| .489**| .559**| .551**| .476**| .540**| .709**| .721**| .649**| .662**| .746**|
| WF-Task        | .703**| .660**| .668**| .664**| .658**| .664**| .677**| .679**| .685**| .724**| .698**| .804**|       |

Note: B = burnout; EE = emotional exhaustion; LPA = low personal accomplishment; DP = depersonalization; S = satisfaction; SE = supportive environment; PA = professional autonomy; II = interpersonal interaction; L = leadership; WL = workload; WF = work flexibility.

*p < .05. **p < .01.
This finding indicates that, for nurses, competence level is positively associated with depersonalization.

**Discussion**

In this study, the perceptions of the participants related to satisfaction with the hospital and work flexibility ranged between moderately satisfied and satisfied and reflected low levels of burnout. Moreover, a high and positive correlation was found between satisfaction and work flexibility, and a low and negative correlation was found between burnout and both satisfaction and work flexibility. The predictors of emotional exhaustion were identified as follows: professional autonomy, interpersonal interaction, workload, and task flexibility. Professional autonomy was the only predictor of low personal accomplishment, and nursing competence level was the predictor of depersonalization.

Professional autonomy was found to be a predictor of emotional exhaustion and low personal accomplishment, which is similar to the findings of previous studies (Carvalho et al., 2020; O’Connor et al., 2018). In an unhealthy work environment, emotional exhaustion is perceived to be more significant when professional autonomy is restricted. Professional autonomy is also related to the concept of personal accomplishment, under which personal accomplishment is increased when professional autonomy is strengthened (Carvalho et al., 2020). Therefore, when nurses have insufficient professional autonomy or competence, they become stressed or do not trust themselves, leading to emotional exhaustion and a reduced sense of personal accomplishment.

High workload was also found to be a predictor of burnout in this study. According to Yestiana et al. (2019), nurse workload may be distinguished into quantitative and qualitative workloads, both of which may result in burnout, with the former referring to the number of patient care services provided by nurses and the latter referring to the level of responsibility nurses have related to patient care. In the nursing context, Macphee et al. (2017) also identified high workload as associated with perceptions of time pressure and lack of sufficient time to complete work tasks. The number of patients under their care is positively associated with the physical labor burden of nurses, whereas self-perceived level of

### Table 3

Hierarchical Linear Regression of the Factors Related to the Burnout Subscales (N = 435)

| Level 1 | Emotional Exhaustion | Low Personal Accomplishment | Depersonalization |
|---------|----------------------|-----------------------------|------------------|
|         | Model 1 Beta | p   | Model 2 Beta | p   | Model 1 Beta | p   | Model 2 Beta | p   |
| Constant | .062 | <.001 | -0.064 | <.001 | .110 | <.001 |
| Gender (ref.: male) | .022 | .580 | 0 | 1 | -.062 | <.001 | .111 | .023 |
| Age | .047 | .017 | .826 | -.012 | .881 | .025 | .757 | -.101 | .233 |
| Education (ref.: college) | .042 | .014 | .751 | -.067 | .177 | .052 | .284 | -.007 | .893 |
| Marital status (ref.: unmarried) | .068 | .045 | .375 | .096 | .081 | .092 | .067 | -.053 | .333 |
| Other experience (ref.: no) | -.031 | .596 | -.028 | .595 | .005 | .930 | -.006 | .916 |
| Length of service | -.053 | .454 | -.101 | .109 | .038 | .585 | .057 | .399 |
| Competence (ref.: novice) | .033 | .575 | .033 | .540 | .051 | .382 | .013 | .818 |

| Level 2 | Emotional Exhaustion | Low Personal Accomplishment | Depersonalization |
|---------|----------------------|-----------------------------|------------------|
|         | Model 1 Beta | p   | Model 2 Beta | p   | Model 1 Beta | p   | Model 2 Beta | p   |
| Supportive environment | .023 | .756 | -0.055 | .496 | -0.128 | .109 |
| Professional autonomy | -.252 | .002 | .338 | <.001 | -.086 | .314 |
| Interpersonal interaction | -.194 | .008 | .051 | .521 | -.139 | .075 |
| Leadership | -.036 | .581 | -.034 | .627 | .037 | .592 |
| Workload | -.171 | .005 | -.075 | .255 | -.098 | .132 |
| Task flexibility | -.273 | .001 | -.035 | .698 | .054 | .549 |
| Numerical flexibility | -.066 | .361 | -.001 | .991 | -.023 | .769 |
| Divisional flexibility | -.122 | .125 | .058 | .505 | -.016 | .850 |
| Temporal flexibility | -.006 | .937 | -.120 | .137 | .121 | .122 |
| Wage flexibility | .014 | .873 | .084 | .360 | .051 | .571 |
| Leadership flexibility | .001 | .999 | -.038 | .713 | -.044 | .669 |

| R² | .011 | .264 | .266 | .117 | .048 | .126 |
| Adjusted R² | .006 | .212 | .009 | .077 | .032 | .086 |
| ΔR² | .011 | .235 | .026 | .091 | .048 | .077 |
| F change | 6.75 | 11.258 | 1.544 | 3.724 | 2.982 | 3.207 |
| p | .694 | <.001 | .151 | <.001 | .005 | <.001 |
responsibility and time pressure are positively associated with mental stress. Finally, once nurses perceive themselves as unable to cope with their workloads, they will experience burnout. Therefore, balancing job demand and resources is an important factor in increasing job satisfaction (Abadi et al., 2021).

Task flexibility was also identified as a predictor of burnout in this study. Previously, Hornung et al. (2019) identified three types of individual-level task flexibility (active use of task autonomy, self-initiated job crafting, and negotiation of task-related by superiors) as affecting burnout levels, with higher task overload resulting in more emotional exhaustion and lower job autonomy resulting in higher levels of emotional exhaustion (Hornung et al., 2019). The professional competence of nurses has been shown to be a critical factor affecting the relationship between patients and nurses (Billeter-Koponen & Fredén, 2005). Nurses who have the professional competence to meet patient needs experience a greater sense of personal accomplishment. Nursing competence includes not only clinical experience and capacity but also self-efficacy, as when nurses obtain the respect of others, their sense of accomplishment and belongingness increases (Li et al., 2012). However, nurses at higher levels of professional nursing status and competence typically assume greater responsibility in clinical settings and are thus more likely to perceive higher levels of stress and have a lower sense of accomplishment when not supported by their organization or society (Liao et al., 2020).

Furthermore, interpersonal interaction was found in this study to be a predictor of emotional exhaustion. An imbalance in interpersonal interaction may decrease team cooperation and result in emotional exhaustion (Zhao & Jiang, 2021). In a previous study, S. Wang et al. (2015) found that the relationship between physicians and nurses affects the perception of burnout. Therefore, interpersonal interaction affects not only the emotions of individuals but also the degree of team cooperation.

The findings of this study suggest several recommendations for nursing practice. First, hospital administrators should, based on considerations of professional autonomy, implement strategies to promote mutual respect within the organization and a cooperative organizational culture and provide opportunities for nurses to participate in decision-making committees. Second, policies related to staffing and task arrangement should be evaluated regularly, especially with regard to emergent situations such as significant and critical patient needs and severe health events. Third, educational programs targeting the communication skills necessary to build a positive working environment, various leadership styles and skills, and the simplification of care models and processes should be provided to leaders and primary nurses at different professional levels.

Conclusions
Professional autonomy and work flexibility are important predictors of burnout and job satisfaction in nurses. It is recommended that organizations provide preliminary and advanced training programs based on the needs of nurses to develop professional competence and higher professional autonomy in nurses. By improving their professional competence and job satisfaction through in-service education programs, nurses may effectively reduce and avoid job-related burnout.

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