**Exploring The Relationship Between Job Stress and Sleep Quality of Community Nurses in China**

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**Abstract**

It is necessary that nurses have a proper sleep schedule to be able to serve their duty with proper dedication. However, in China it has been noticed that challenges within the healthcare system are affecting the sleep schedule of nurses indirectly. The lack of a proper working environment or job security has affected the sleep schedule for Chinese nurses majorly, one of the significant reasons being job stress. A quantitative study has been adopted in this research to identify the main reasons why nurses in China are having an imbalance over sleep quality. The findings of the study have shown high reliability of the methods used with the testing of the Cronbach Alpha value. Policymakers can use the findings of this study to entail different laws for improving the stress at work for the nurses to enhance their respective sleep qualities.

***Keywords:*** *Community Nurse, Patient Interaction Frequency, Work schedule, Sleep Quality of Community Nurses*

**1. Introduction**

**1.1 Background of the Study**

The well-being of the healthcare professionals working in the Chinese healthcare settings has become a crucial concern for the researchers (De Kock, 2021). Community nurses in the country have also been facing challenges related to the growing urbanisation and healthcare facilities being at par with the same (Zhou, 2022). This lack of quality of work has also led to the lack of sleep quality among these community nurses (Song, 2020).

**1.2 Problem Statement**

Community nurses are known for providing specific healthcare facilities to the diverse population in China (Søvold, 2021 "Prioritizing the mental health and well-being of healthcare workers: an urgent global public health priority."). The challenges were always a lot for these nurses but with the growing urbanisation and the population increase in the country, the work stress for these nurses have also increased (Denning, 2021). The problem considered for this study is ***how the healthcare system’s challenges and the challenges faced by the community nurses can both impact the sleep quality of these nurses*** in China (Chen, 2020). It is evident that job stress can have a significant impact on the sleep quality of the nurses and this study shall help understand the same.

**1.3 Research Aim and Objectives**

The main aim of this study is to understand the relationship between the different factors of job stress on the sleep quality of the community nurses working in the healthcare facilities in China. The following are the research objectives for the current study:

RO1: To analyse the impact of work schedule on the sleep quality of community nurses.

RO2: To understand the effect of job security on the sleep quality of community nurses.

RO3: To examine the influence of professional development and patient interaction frequency on the sleep quality of community nurses.

**1.4 Research Questions**

The following are the key research questions for the current study:

RQ1: What is the effect of work schedule on the sleep quality of community nurses?

RQ2: How does job security impact the sleep quality of community nurses?

RQ3: What is the impact of professional development and patient interaction frequency on the sleep quality of community nurses?

**1.5 Scope and Significance of the Study**

The study can be effective for the understanding of which factors related to work stress can lead to poor sleep quality among the nurses who work in community healthcare facilities in China. The findings of the study can help many healthcare policymakers to understand which factors impact job stress among the community nurses the most and make changes in the same for enhancing the sleep quality as well the performances of these community nurses.

**2. Literature Review**

**2.1 Theoretical Underpinning *(Robert Karasek's Job Demand-Control Model)***



**Figure 1: Robert Karasek's Job Demand-Control Model**

Improving team and staff productivity has always been a problem for administrators and HR specialists (La Torre, 2022). The nature of those issues has changed significantly in the last several years (Deng, 2021). Based on ***“McKinsey Global Institute”*** research, businesses with linked staff see increases in worker efficiency of ***20–25%***. Motivated staff members take delight in their jobs (Gritzka, 2022). According to a related Gallup poll, workers who are passionate about their jobs are ***27%*** happier to declare ***“excellent”*** efficiency.

The ***“Job Demand-Control Model”*** developed by ***“Robert Karasek”*** is a useful framework for learning about the connection between local nurses' sleep quality as well as occupational stress in China (Luo, 2021). According to this concept, an accumulation of elevated job expectations and limited job control leads to job strain (La Torre, 2022). This may have an impact on some consequences, notably health (Li, 2021). The model can assess the unique work demands that community nurses encounter, such as task regularity and severity, patient encounters, and mental strain (Perä, 2021). This may measure how much of control local nurses possess over their job duties, ways to make choices, and volume of work mobility (Dong, 2020). This might involve positioning in place stress prevention programmes, promoting increased personnel levels, or enacting laws governing work hours.

**2.2 Definition of Variables**

***Sleep Quality of Community Nurses:*** One of the most fundamental physiological needs for living is sleep (Jahrami). It is characterised as a time of lowered awareness, lowered muscle tone, and lowered metabolism (Søvold, Lene E., et al., 2020). A nurse's mental, physical, and state of mind, including their ability to think is negatively impacted by sleep deprivation.

***Work Schedule:*** Work schedules contemplate the duration that every worker is expected to work to maintain an appropriate staffing level for the company without putting too much pressure on any one person (Di Simone et al., 2020). Considering a work schedule is crucial if one hopes to attain a balanced life between work and personal life (Xie, 2021).

***Job Security:*** The degree of trust that a person has in their present position, including the possibility that they will have it throughout eternity, is referred to as job security. Numerous factors, like the status of the marketplace, the field the person specialises in, as well as the viability of the firm they are employed for, might have an impact (Wang, 2020).

***Professional Development:*** Educational certificates, seminars, and formal instruction classes are all examples of learning experiences that fall under the category of professional development.

***Patient Interaction Frequency:*** Conversation is one of the primary ways nurses build credibility with patients (Li, 2021). Successful communication between nurses and patients is essential since nurses and patients frequently experience the most direct connection (Boström, 2020) (Karhula et al., 2020). Nurses can employ established therapeutic conversations that support high-quality treatment.

***Social Support:*** A person's perception of their circle of connections is referred to as their social support system (Albrecht, 2022). The foundation of this community of individuals is the idea of support for one another, advice, and affirmation of choices and lessons learned in life (Huang, 2021).

**2.3 Conceptual Framework**

DV- Sleep Quality of Community Nurses

IV - Work schedule, Job security, Professional development, Patient Interaction Frequency

MV- Social support

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**2.4 Hypotheses Development**

**H1: Work schedules have a significant impact on the sleep quality of community nurses**

(Kim-Godwin, 2021) evaluated in a study that good sleep is essential for nurses to give patients the best care possible. Perhaps due to their profession, nurses have a greater chance of experiencing ongoing insomnia and reduced sleep overall (Chen, 2021) (Deng et al., 2020). Lack of sleep causes fatigue, which impairs a nurse's concentration and decision-making skills and increases the risk of mistakes and accidents (Zhu, 2020) (Stimpfel et al., 2020). For instance, inadequate sleep among nurses was linked to an increased likelihood of prescription mistakes. Shifting duty is a job for ***40%*** of medical staff in ***“Europe”*** (Di Muzio et al., 2020) (Kang et al., 2020). Cognitive productivity decline is also linked to night shift nurses' changed sleep/wake patterns.

**H2: Job Security has a significant impact on the sleep quality of community nurses**

Maintaining a sufficient ratio of nurses per patient is essential for delivering excellent treatment and improving the health of patients (An et al., 2022) (Dong et al., 2020) (Di Muzio et al., 2020). Still the COVID-19 pandemic makes the predicted ***“5.9 million”*** worldwide nursing deficit becomes clearer.

**H3: Professional development has a significant impact on the sleep quality of community nurses**

A proper sleep schedule is highly necessary for effective professional development (Zhao, 2020) (Kim-Godwin et al., 2021) (Gillet et al., 2020) (Zeng et al., 2020). According to Meaklim, 2020, "Sleep education for healthcare providers: Addressing deficient sleep in Australia and New Zealand”. healthcare providers end up getting less amount of time for sleep since they must give more time towards training and end up having less time for relaxation (Zheng, 2021) (Zhao et al., 2020) (James et al., 2020). In relevance to this, (Y. S. Kim-Godwin, 2021) has provided how crucial it is for nurses to have better quality of sleep-in order to be able to serve their patients with more care and concern.

**H4: Patient Interaction Frequency has a significant impact on the sleep quality of community nurses**

Numerous work-related stresses raise the possibility of negative consequences for one's mental health, such as emotional distress (Lu et al., 2023) (Nelson et al., 2022). Three necessities are enough sleep, a healthy diet, and exercise. The standard of one's sleep is a crucial indicator of the boundary between wellness and illness (Korkmaz et al., 2020) (Qiu et al., 2020). Sudden and prolonged stress, a lack of sleep, insomnia, along other neurological issues can all affect brain function and the ability to make choices (Luo et al., 2021) ( Zhu et al., 2020). It can lower clinical job efficiency and raise the possibility of medical mistakes.

**H5: Social Support significantly influences Job security**

According to (Saud et al., 2020), social support is effective in developing communication between individuals and highly beneficial for the medical sector. People in the society can communicate in the society to understand the benefits of medical support (Zeng et al., 2020) (Jahrami et al., 2021) (Gupta et al., 2020). In addition to this, social support of groups can allow individuals to have better support to individuals in analysing threats and identify whether they have a stability in their job roles (Cohen et al., 2020) (Epstein et al., 2020).

**H6: Social Support mediates the relationship between job security and sleep quality of Community nurses through**

Sleep quality of nurses is affected by job security they have, since they would be assured of the stability of the role they are playing in their professional lives (Kowalczuk et al., 2021) (Song et al., 2020) (Lin et al., 2021). According to (Sayılan et al., 2021), excessive burnout in nurses affects their sleep patterns and they turn to social help to achieve surety that their career would be settled in manner.

**2.5 Literature Gap**

There has been a lack of study regarding the way healthcare-sector challenges and job stress can add on to hampering the sleep quality of nurses (Lu et al., 2023). The challenges in the industry are directly related to the development of job stress that affects the quality of sleep nurses can get in their time of relaxation.

**3 Research Methodology**

**3.1 Research Framework**

Positivism research philosophy is the one, which ensures that the factual observations are used as the information for the study. This ensures that no subjective inferences are used for the result conclusions (Park et al., 2020). The same has been used for the current study to carry the numerical inferences related to the different concepts of the study.

The deductive research approach has also been used for the current study that has allowed the research to begin with the theoretical understanding and the development of the hypotheses (Love et al., 2022). The study after this has tested these hypotheses for deducing conclusive results.

The descriptive research design has been used for the current study as it helps to answer the different research questions which are of the types “what”, “how”, “when”, and “where”, instead of the “why” types of questions. This ensures that numerical observations are followed throughout the study and there is less error.

**3.2 Data Collection**

Primary data collection is conducted in the current study, which ensures that all the relevant data for the study are collected from first-hand sources or the individuals who are directly influenced with the conducting of this study (Franzitta et al., 2020). This ensures that the most recent data regarding the study is collected (Zhang et al., 2021). The survey is the most used method of collecting primary data for a study. Survey method allows a researcher to collect a large amount of data related to the study in short period of time (Shrestha, 2021). The current study has also the survey method to collect data from the community nurses.

**3.3 Research Instrument**

A survey method often uses the questionnaire as the instrument to collect the data (Littlejohns, 2020). The current study has also used the same with the use of the five-point Likert scale that had assigned responses of “strongly agree”, “agree”, “neutral”, “disagree” and “strongly disagree”.

**3.4 Sampling and Population**

The data used for analysing the situation of the study is gathered from a specific population. This population generally faces consequences of the identified research problem and hence it is selected for the study to generate accurate information (Chaokromthong et al., 2021). However, respondents of such problems may be quite large, making the analysis procedure very difficult. Hence, it is necessary to select relevant sample sizes.

The selected sample size is generated in a manner that allows covering all the characteristics that are prevailing over the identified population. In the case of this study, a sample size of 205 has been selected for the study. This data was adopted based on the Krejcie and Morgan table that portrays a population of 440 nurses. This group of nurses have been identified for the study since they have a minimum experience of five years and it would be able to provide relevant data that can be used to identify the cause of the problem in the study.

**3.5 Data Analysis**

Data analysis is conducted with the aim of interpreting the information that has been collected for the study to analyse the situation in research. Data analysis process can be either quantitative or qualitative (Rahman et al., 2021). In case of this study, a quantitative data analysis process has been adopted to analyse the numerical data that has been collected for the research. Using this process of analysis. It is possible to generate accurate interpretation through the graphs and tables that would be produced (Fard). The IBM SPSS software is being adopted to analyse the collected information through the survey.

**3.6 Ethical Considerations**

It is necessary to follow ethical considerations while conducting research to maintain the integrity of the study. The consent of the participants is to be acquired prior to considering their responses for the study (Brittain et al., 2020). All the information collected and processed are to follow the guidelines of the Data Protection Act 2010

**4 Results and Findings**

**4.1 Demographic Analysis**

|  |  |  |
| --- | --- | --- |
|   | Count | Column N % |
| age | 27-32 years | 120 | 58.5% |
| 32-37 years | 74 | 36.1% |
| Above 37 years | 11 | 5.4% |
| gender | Male | 44 | 21.5% |
| Female | 161 | 78.5% |
| Others | 0 | 0.0% |
| Working experience | 5-10 years | 84 | 41.0% |
| 10-15 years | 101 | 49.3% |
| more than 15 years | 20 | 9.8% |

**Table 1: Demographic Analysis**

This research surveyed 205 Chinese health care employees or staff where it was identified that most of them, 120 respondents, were aged between 27 to 32 years old. Similarly, it was also identified that 161 of the respondents were female and 49.3% of the overall respondents have working experiences of 10 to 15 years.

**4.2 Reliability Test**

|  |
| --- |
| **Reliability Statistics** |
| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
| .912 | .935 | 36 |

**Table 2: Reliability Analysis**

This research used the IBM SPSS software to form up a Cronbach Alpha test to measure the reliability against the collected survey responses using the research survey questionnaire. In previous research studies, it was identified that if the Cronbach Alpha succeeds to present the value of more than .7 the research is reliable. Over this specific research, a Cronbach alpha value of .912 was identified which presents that this research used a reliable and valid set of questionnaires to collect responses from the research respondent.

**4.3 Multiple Linear Regression Test**

Over the research, multiple regression analysis it was identified that 14 out of 30 research independent variables succeeded to present a statistically significant connection towards the dependent variable factor SQ1. It was identified over the multiple linear regression test that the first independent variable constants WS1, WS4, WS5 and WS6 were able to present significant connections towards dependent variable factor SQ1. Therefore, it can be said that, work schedules have a significant impact on the sleep quality of community nurses. On the other hand, the third research variable factors PD2, PD3, PD4, and PD5 were unable to present a statistically significant connection towards the dependent variable factor SQ1. Therefore, it was identified that Professional development does not present a significant impact on the sleep quality of community.

**4.4 Sobel Test**

|  |
| --- |
| **Coefficients** |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B |
| B | Std. Error | Beta | Lower Bound | Upper Bound |
| 1 | (Constant) | .164 | .071 |   | 2.327 | .021 | .025 | .303 |
| JS 1 | .937 | .043 | .834 | 21.539 | .000 | .851 | 1.022 |
| a. Dependent Variable: SS 5 |

**Table 3: Multiple Linear Regression Test between job security and social support**

A multiple linear regression test was used between the **job security** construct JS1 and the **social support** constructs SS5, where a t-value of 21.539 was identified.

|  |
| --- |
| **Coefficients** |
| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. | 95.0% Confidence Interval for B |
| B | Std. Error | Beta | Lower Bound | Upper Bound |
| 1 | (Constant) | .223 | .053 |   | 4.187 | .000 | .118 | .329 |
| SS 5 | .810 | .031 | .879 | 26.274 | .000 | .749 | .870 |
| a. Dependent Variable: SQ 1 |

**Table 4: Multiple Linear Regression Test between social support and sleep quality**

A multiple linear regression test was used between the **social support** construct SS5 and the **sleep quality** constructs SQ1, where a t-value of 26.274 was identified

**Sobel Test between** job **security, social support, and sleep quality**



**Figure 1: Sobel Test between job security, social support, and sleep quality**

This research used the Sobel test calculator to identify the strength of the medication effect of the research study. A Sobel test value of 16.657 was identified which is more than 1.96 (1.96 is the minimum value to present an effective mediation effect). Therefore, it can be stated that social support mediates the relation between job security and sleep quality.

**5 Conclusion**

**5.1 Linking with the Objectives**

***RO1: To analyse the impact of work schedules on the sleep quality of community nurses.***

The findings clearly suggest that stricter work schedules may hamper the sleep quality among the community nurses. More flexible work hours can help mitigate this issue.

***RO2: To understand the effect of job security on the sleep quality of community nurses.***

The study has been effective to understand that the more insecure the different community nurses are in their workplace, the less sleep they get. This in turn can become a reason for their productivity to fall.

***RO3: To examine the influence of professional development and patient interaction frequency on the sleep quality of community nurses.***

Lastly, the findings have highlighted that there is a definite effect of how professional development is implemented for the community nurses and how often these nurses interact with patients on how much sleep they get in a day.

**5.2 Implications**

The theoretical implications of this study on future research can be considered that the healthcare sector would be developed. Further research can be conducted on factors that would have an impact over ensuring job security and reducing stress in the life of nurses to manage their sleep patterns. In practical scenarios, management in healthcare sectors can consider this study and aim to develop the work schedule of nurses.

**5.3 Recommendations**

The findings of the study implicated that the healthcare policy makers need to implement policies specifically for the enhancement of the work quality for the community nurses. These policies can be related to making these jobs more flexible. Special counselling sessions can be organised in the healthcare settings for the nurse to talk about their stress issues and what has been causing lack of sleep for them.

**5.4 Limitations and Future Scope**

Due to the time constraints, some physiological factors such as the heart rate, blood pressure rate or insomnia could not have been considered as factors affecting the sleep quality. In the future, a similar study would be aimed to reconsider some of the physiological factors affecting sleep quality as well along with the external factors to get a more holistic understanding of the issue leading to poor sleep quality among the community nurses.

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