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Original Article

Chronic Stress and its Correlates among Nurses: A Csase of Central Uganda

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Abstract

Background and Objective: Despite an overwhelming disease burden, nursing shortages are evident in Sub-Saharan Africa, with the potential for significant healthcare crises. Nurses face increased work demands and chronic stress due to a skilled personnel shortage, which may lead to stress. The present study aimed to examine chronic stress and its correlates among nurses in central Uganda.

Materials and Methods: The 12-item Short Form Survey (SF-12) for the assessment of chronic stress among nurses, a validated and standardized tool, was used in this cross-sectional study in 2022. For explanatory analysis, the items were combined with dichotomous variables reflecting predictors of chronic stress. These items were used to create dichotomous variables denoting frequent and demanding challenges for exploratory analysis. The relationship between the variables and high levels of chronic stress was investigated using a multivariate logistic regression model.

Results: Based on the findings, the majority, 485 (76.0%), had chronic stress. The results indicate that the correlates of chronic stress among participants were widowhood (AOR: 0.040; 95% CI: 0.013-0.127; P= <0.001), being worried about looming deadlines (aOR: 0.003; 95% CI: 0.001-0.023; P = <0.001), long working hours (AOR: 0.283; 95% CI: 0.159-0.504; p=<0.001), insufficient job control (AOR: 0.304; 95% CI: 0.127-0.727; P = 0.007), and inadequate rewards (AOR: 2.554; 95% CI: 1.170-5.574; P = 0.019).

Conclusions: According to our findings, three in four nurses in central Uganda suffer from chronic stress. This can exert a negative impact on their overall well-being and caring behaviors. Chronic stress was associated with widowhood, a looming deadline, long working hours, insufficient job control, and inadequate rewards. It is critical to adapt interventions, such as hiring additional nurses, to reduce workload and ensure adequate rest periods.

Keywords: Chronic stress, Deadline, Nurses, Reward

Background

Despite an overwhelming disease burden, nursing shortages are evident in Sub-Saharan Africa, with the potential for significant healthcare crises[1]. Furthermore, despite having the lowest doctor and nurse densities of any region and up to 25% of the global disease burden, Sub-Saharan Africa accounts for only 3% of the global health workforce [2]. Nurses face increased work demands and chronic stress as a result of a skilled personnel shortage [3]. Understanding the predictors of and reducing perceived stress within the current nursing workforce is one method of addressing the nursing shortage [3]. According to the transactional theory proposed by Lazarus, people analyze environmental pressures and, based on their contextual and personal resources, a subsequent appraisal may result in stress [4]. An abundance of resources, such as job stability and control, participation opportunities, feedback, and support from coworkers and managers, may reduce the adverse effects of chronic stress [5].

Chronic stress is a long-term and constant state of stress that can harm one's health if left untreated. Chronic stress is caused by the inability of the autonomic nervous system to consistently elicit the relaxation response when the body is subjected to stressors on a regular or intense basis, indicating that the body is physiologically awake all the time [6]. Chronic stress causes both physical and psychological symptoms, making it difficult for people to go about their daily lives normally.

Chronic stress can harm brain structure and function since it causes prolonged activation of the hypothalamic-pituitary-adrenal axis and increased glucocorticoid release [7]. It also causes physical and mental health symptoms, including persistent anxiety, depressive symptoms, and a reduced response to the influenza vaccine [8]. In turn, chronic stress can lead to absenteeism, burnout, and job turnover [8].

Studies from developing countries indicate that long work hours, as well as a lack of social support and job control, are factors that predict chronic stress in nurses [9]. Understanding chronic stress and its predictors in low-income countries is critical since it will pose a significant challenge in the coming decades [10]. The lack of nurses and midwives is a critical challenge affecting the scale-up and implementation of lifesaving interventions in Uganda [11]. As of 2020, the Uganda Nurses and Midwives Council (UNMC) had registered 70,167 nurses and midwives [12]. Only 48,000 of these, however, are employed and provide services to 48 million people in Uganda [12]. This predicament, combined with other diseases, such as HIV, COVID-19, malaria, and lower respiratory infections, has put the country's healthcare system at risk of collapse [13], and nurses are likely to experience chronic stress. Since the physical and mental demands on nurses are increasing, it is critical to identify the signs of chronic stress and any potential workplace risk factors [14]. A better understanding of the relationship between risk factors and chronic stress can help the development of strategies for preventing chronic stress, improving service quality, productivity, and community health[9]. In light of the aforementioned issues, the current study sought to assess chronic stress and its correlates among frontline nursing care providers in Kampala, central Uganda.

Objectives

The present study aimed to examine chronic stress and its correlates among nurses in central Uganda.

Materials and Methods

Research Design

A facility-based cross-sectional design was used to achieve the goal of the study. The design is appropriate for describing the population at a specific time [15]. Data were collected between June 10 and July 10, 2022.

Study settings

The research was carried out at four public hospitals in Kampala. Nursing care providers in the capital city may work with critically ill patients and thus be vulnerable to chronic stress.

Study Participants and Eligibility Criteria

The participants included nursing care providers from various health centers in Kampala, Uganda, who were registered with the Uganda Nurses and Midwives Council. The study included nurses who were available at work during the data collection period. Busy nurses were barred.

Sample Size and Sampling Procedure

Nurses from four public hospitals in the Kampala district were randomly selected for the study. A total of 750 nurses were chosen to participate in the study, and 638 (85%) cases agreed to fill out the questionnaires. Potential study participants were identified using the records of nurses in each hospital. A simple random sampling method was used to select the participants.

Data Collection Instruments

The 12-item Short Form Survey (SF-12), a 12-item scale that assesses five chronic stress-related experiences: chronic anxiety, work-related overload, social overload, overexertion, and lack of recognition, was used to collect data. A 5-point Likert scale was used to assess how frequently respondents had relevant experience in the previous three months, ranging from 0 (never) to 4 (very often). The total SF-12 score is determined by adding the results of all items. The total SF-12 scores ranged from 0-48, with higher values indicating higher levels of chronic stress. The responses are divided into two groups based on their scores: those who are not chronically stressed (score 15) and those who are chronically stressed (score > 15). The SF-12 was an appropriate assessment tool for the study objectives since nurses have a high rate of chronic stress. The SF-12 has been shown to have good discriminant validity, content validity, internal consistency, and test-retest reliability [16]. In the present study, the Cronbach's alpha for SF-12 was 0.95. The first part of the questionnaire was designed by the researchers to collect data on participants' demographics. We examine the risk factors for chronic stress using items developed by the researcher based on the available literature [10]. Before collecting data, the items were reviewed and adjusted as needed. The items were pretested on 42 people from one public hospital.

Data Collection Procedures

Prior to the data collection process, five research assistants were trained. Participants who agreed to participate were enrolled in the study. Participants were informed of the study objectives, data collection procedure, and time frame prior to data

collection. The research assistants personally handed out informed consent forms to prospective participants. The researchers then administered instruments to the participants who agreed to take part in the current study.

Data analysis

The field tools were checked for completeness at the end of data collection. The information was entered into Excel in duplicate. We cleaned and coded the data before exporting it to SPSS software (Version 28). To analyze and summarize the data, descriptive statistics, such as frequencies, percentages, and measures of central tendency and dispersion, were used. To test for association, the Chi-Square and Fisher's tests were used. The independent variable of chronic stress was predicted using multiple regression analyses. The crude odds ratios (COR) and adjusted odds ratios (AOR), as well as their 95% confidence intervals (CI), were calculated. A P-value of 0.05 was considered statistically significant.

Results

Socio-Demographic Information of Participants (n = 638)

Table 1 displays that 242 (37.9%) of 638 respondents were between the ages of 31 and 45, 450 (70.5%) cases were females, 368 (57.7%) subjects were married, and 355 (55.6%) cases had less than a high school diploma. The majority, 485 (76.0%), had chronic stress, which was associated with gender (P=0.009), marital status (P=<0.001), and education levels (P=0.012).

Chronic stress and associated factors (n=638)

A binary logistic regression analysis (Table 2) was performed to identify potential factors associated with chronic stress. Chronic stress was associated with looming work deadlines (P=<0.001), working hours (P=<0.001), job control (P=0.005), social conflicts (P=0.021), and reward (P=0.034).

Table 1. Social demographic information (n=638)

Variables	Category	Frequency	Chronic stress		p-value
			Absent 153 (24.0)	Present 485(76.0%)	
Age of respondents	Below 30	176(27.6%)	44(25.0%)	132(75.0%)	0.132
	31-45 year	242(37.9%)	67(27.7%)	175(72.3%)	
	46-50 years	145(22.7%)	25(17.2%)	120(82.8%)	
	>60 and above	75(11.8%)	17(22.7%)	58(77.3%)	
Gender	Male	188(29.5%)	58(30.9%)	130(69.1%)	0.009*
	Female	450 (70.5)	95 (21.1%)	355 (78.9%)	
Marital status	Single	52 (8.2%)	2 (3.8%)	50 (96.2%)	>0.001*
	Married	368 (57.7%)	145 (39.4%)	223 (60.6%)	
	Divorced/Separated	90 (14.1)	2 (2.2%)	88 (97.8%)	
	Widowed	128 (20.1%)	4 (3.1%)	124 (96.9%)	
Education level	Less than Diploma	355 (55.6%)	86 (24.2%)	269 (75.8%)	0.012*
	Diploma	199 (31.2%)	44 (22.1%)	155 (77.9%)	
	Bachelor's degree	66 (10.3%)	13(19.7%)	53 (80.3%)	
	Postgraduate	18 (2.8%)	10 (55.6%)	8 (44.4%)	

*statistically significant variable at p<0.05

Table 2. Chronic stress and associated factors (n=638)

Variable	Frequency	Chronic		p-value
		Absent 153 (24.0)	Present 485(76.0%)	
Looming deadline				<0.001*
No	346(54.2%)	152(43.9%)	194(56.1%)	
Yes	292(45.8%)	1(0.03%)	291(99.7%)	
Contented with a working environment				0.116
No	151(23.7%)	29(19.2%)	122(80.8%)	
Yes	487(76.3%)	124(25.5%)	363(675.5%)	
Working hours				<0.001*
<10 hours	352(55.2%)	116(33.0%)	236(67.0%)	
>10 hiurs	286(44.8%)	37()12.9%	249(87.1%)	
Control over job				0.005*
No	107(16.8%)	37(34,6%)	70(%)	
Yes	531(83.2%)	116(21.8%)	415(78.2%)	
Experienced social conflicts				0.021*
No	75(11.8%)	26(34.7%)	49(65.3%)	
Yes	563(88.2%)	127(22.6%)	436(77.4%)	
Rewards				0.034*
No	87(13.6%)	13(14.9%)	74(85.1%)	
Yes	551(86.4%)	140(25.4%)	411(74.6%)	

*statistically significant variable at p<0.05

Table3. Multivariable analysis (n= 638)

Variables	Frequency	COR95%CI	AOR95%CI	p-value
Marital status				
Single	52(8.2%)	0.806(0.143-4.544)	2.303(0.559-14.766)	0.379
Married	368(57.7%)	0.050(0.018-0.137)	0.040(0.013-0.127)	<0.001*
Divorced/Separated	90(14.1)	1.419(0.254-7.920)	1.771 (0.291-10.775)	0.535
Widowed	128(20.1%)	1	1	
Looming work deadline				
No	346(54.2%)	228.0(31.645-1642.7)	0.003(0.001-0.023)	<0.001*
Yes	292(45.8%)	1	1	
Working hours				
<10 hours	352(55.2%)	3.308(2.194-4.988)	0.283(0.159-0.504)	<0.001*
>10 hours	286(44.8%)	1	1	
Job control				
No	107(16.8%)	1.891(1.208-2.961)	0.304(0.127-0.727)	0.007*
Yes	531(83.2%)	1	1	
Rewards				
No	87(13.6%)	0.516(0.277-0,959)	2.554(1.170-5.574)	0.019*
Yes	551(86.4%)	1	1	

*statistically significant variable at p<0.05; 1: reference category

Multivariable analysis (n= 638)

As illustrated in Table 3, the correlates of chronic stress among participants were widowhood (AOR: 0.040; 95% CI: 0.013-0.127; P = 0.001), being worried about looming deadlines (AOR: 0.003; 95% CI: 0.001-0.023; P=<0.001), long working hours (AOR: 0.283; 95% CI: 0.159-0.504; P=<0.001), insufficient job control (AOR: 0.304; 95% CI: 0.127-0.727; P=0.007), and inadequate rewards (AOR: 2.554; 95% CI: 1.170-5.574; P= 0.019).

Discussion

The present study aimed to evaluate chronic stress and its correlates among nurses in central Uganda. According to the findings, 77.5% of them experienced chronic stress. The stress levels reflect the gravity of the country's current healthcare crisis [9]. This result is not surprising given that working as a nurse can be one of the most demanding and stressful professions, with serious consequences for nurses' mental health [17]. In comparison with previous studies, nurses had lower levels of extreme stress [18]. Our findings support the findings of Heue et al. [10], who reported that 84% of nurses were chronically stressed. This finding emphasizes the importance of developing interventions for nurses suffering from chronic stress.

This study reported a significant relationship between marital status and chronic stress, with married nurses less likely to experience chronic stress than their widowed counterparts. Widowhood after the death of a spouse can result in a number of financial and psychological issues. Consistent with our findings, several studies have found that widows have a higher prevalence of mental illness than married people overall [19, 20]. Furthermore, our findings revealed that a lack of job control was a predictor of chronic stress. Factors related to the hospital may have less of an impact on chronic stress than factors related to the workplace [21]. The JD-R model classified these elements as job demands, and while job demands are not always negative, they can cause workplace stress if they require more effort from employees [22]. This finding is consistent with the highly significant associations between job stress and a lack of job control [21].

The results of this study pointed to a strong relationship between nurses' chronic stress and the proximity of deadlines. Since nurses typically have to balance clinical work with other responsibilities, meeting deadlines can be especially difficult. The most stressful aspects of nursing are the least visible, from the physical dangers of treating infectious diseases to the mental strain of providing constant emotional support. Furthermore, many nurses are constantly stressed as a result of their heavy workload and short deadlines. Tight deadlines are one of the most common causes of stress among nurses, who deal with them on a daily basis. In line with our findings, respondents to the Royal College of Nursing survey on stress in nursing reported high levels of stress, with extended working hours combined with unreasonable time constraints and tight deadlines being the main predictors [23].

We discovered a statistically significant link between increased daily work hours and chronic stress among nurses. Long hours and physically demanding work are common for nurses, who must also exercise constant caution when making decisions and carrying out tasks that could have life-or-death consequences. Nurses care for patients and their families, providing comfort to those who are frequently overcome with fear, anger, or grief as a result of disease or death. The health and safety of nurses and patients may be endangered as a result of their long shifts at work. Numerous studies have demonstrated that such long or irregular work hours can impair nurses' ability to

recognize and manage negative changes in patients [24]. These findings support previous research that linked long work hours to mental and emotional exhaustion, irregular sleeping and working patterns, depression, and other health problems [25]. In addition, an increase in nurses' working hours resulted in a decrease in patients' health and safety [24].

There was a link between insufficient reward and the prevalence of chronic stress. The establishment of incentive programs for staff members in Uganda is a type of dedication and remuneration that increases nurses' productivity and commitment [26]. Employees expect recognition for their efforts and contributions, in addition to the numerous financial incentives provided by being given some sort of allowance [27]. In most cases, a lack of acceptable monetary or non-monetary rewards leads to poor performance and high staff turnover [28]. As a result, the literature makes it abundantly clear that rewarding employees can improve their work performance.

Limitations

Our research has some limitations. Participants completed the surveys during their working hours, which may have affected the quality of the responses provided. Due to the cross-sectional nature of our study, we are also unable to establish causality between variables. Further research would be helpful in determining the effects of modifying individual correlates of chronic stress.

Implications for the clinical setting

This result has important implications for ongoing health promotion initiatives among nurses. Interventionists and stakeholders must remove organizational obstacles that prevent nurses from engaging in healthy behavior if personal resources are available. For instance, occupational health promotion programs should accommodate nurses' work schedules and take nurse interests into account.

Conclusions

As evidenced by the results of this study, three in four nurses in central Uganda suffer from chronic stress. This can have a negative impact on their overall well-being and caring behaviors. Widowhood, a looming deadline, long working hours, insufficient job control, and inadequate rewards were all associated with chronic stress. It is critical to adapt interventions, such as hiring additional nurses, to reduce workload and ensure adequate rest periods.

Compliance with ethical guidelines

This study was carried out in accordance with the Helsinki Declaration. The Institutional Review Board granted ethical approval (Eg-2022-145). The respondents signed informed consent forms. Voluntary participation was encouraged, yet confidentiality and privacy were maintained throughout the research process. To observe the COVID-19 protocols, respondents who did not have masks were given masks. Sanitizers were available, and social distance was maintained.

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Authors' contributions

All authors contributed equally to the completion of this article.

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Conflicts of Interest

The author(s) declared no potential conflicts of interest in connection with the article's research and publication.

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