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Comparative Analysis of Occupational Stress and Psychological Wellbeing among Urban and Rural Nurses and Midwives in Ghana

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Abstract

Background: Nurses and midwives in Ghana are exposed to diverse stressors that affect their psychological wellbeing, yet little is known about how these experiences vary between urban and rural health settings. Understanding such contextual differences is essential for developing targeted mental health interventions for healthcare professionals.

Objective: This study examined the comparative levels of occupational stress, coping strategies, workplace relationships, and psychological wellbeing among nurses and midwives working in selected urban and rural Catholic hospitals in Ghana.

Methods: A cross-sectional comparative design was employed involving 287 nurses and midwives from two urban (Fijai and Jubilee) and two rural (Eikwe and Asankrangwa) hospitals. Participants completed validated questionnaires measuring occupational stress, coping strategies, workplace social relationships, and psychological wellbeing. Data were analysed using descriptive statistics, independent samples t-tests, MANOVA, and two-way ANOVA to explore main and interaction effects.

Results: Urban participants reported significantly higher levels of occupational stress and workplace social relationships compared to their rural counterparts. Conversely, rural nurses and midwives demonstrated stronger coping strategies and higher psychological wellbeing. Multivariate analysis confirmed a significant overall effect of location on the combined psychological variables (Wilks' Lambda = 0.894, $F(4, 282) = 8.14$, $p < .001$). Interaction effects indicated that age, years of experience, and professional category further shaped these outcomes, particularly among younger urban nurses and experienced rural midwives.

Conclusion: Geographic location plays a critical role in shaping the psychological health of nurses and midwives in Ghana. Urban staff may benefit from targeted stress-reduction and mentoring interventions, while

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policies for rural settings should focus on sustaining adaptive coping mechanisms. These findings underscore the need for location-sensitive workforce policies and support systems to promote mental wellbeing in Ghana's healthcare sector.

Keywords: occupational stress, coping strategies, psychological wellbeing, urban–rural comparison, nurses, midwives, Ghana

1. Introduction

Occupational stress among healthcare professionals continues to pose a significant challenge to healthcare delivery systems around the world. Nurses and midwives, who form the backbone of clinical services in Ghana, often operate under intense pressure, juggling emotional, physical, and administrative demands. These pressures, if unmanaged, have long-term consequences on psychological wellbeing, job satisfaction, and the quality of patient care (Labrague et al., 2017; Appiah et al., 2020). In Ghana, the situation is further complicated by persistent disparities between urban and rural health facilities, which expose professionals to varying levels of stress, coping demands, and organizational support structures (Boafo, 2016; Odonkor & Frimpong, 2020).

Healthcare professionals in urban areas are more likely to have access to advanced medical equipment, specialized services, and continuing professional development opportunities. Yet these same environments tend to be characterized by overcrowded facilities, high patient turnover, bureaucratic constraints, and competitive professional hierarchies, all of which contribute to stress (Oppong et al., 2022). In contrast, nurses and midwives in rural areas often operate in under-resourced settings with limited logistics, irregular medical supplies, and professional isolation. These conditions, though different in form, also place a considerable strain on healthcare providers, sometimes eroding their psychological resilience (Akintola & Chikoko, 2016; WHO, 2021).

Although both contexts carry unique challenges, there has been limited scholarly attention paid to how geographic location influences psychological wellbeing, coping behaviour, and workplace relationships among nurses and midwives in Ghana. Most existing studies tend to generalize findings across regions, neglecting the subtle but important ways in which rural and urban work environments shape the professional and emotional lives of healthcare workers (Boateng & Boadi, 2021; Gyamfi et al., 2021). A deeper understanding of these contextual

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dynamics is essential for the design of relevant mental health interventions and policies that are responsive to the realities of practice.

This study therefore sets out to examine and compare occupational stress, coping strategies, workplace relationships, and psychological wellbeing among nurses and midwives working in selected urban and rural Catholic hospitals in Ghana. It specifically focuses on four facilities: Fijai and Jubilee hospitals located in urban areas, and Eikwe and Asankrangwa hospitals situated in rural districts. In addition to measuring differences in psychological outcomes, the study also explores how demographic variables such as age, years of service, and professional category interact with facility location to shape these outcomes. By focusing on this comparative perspective, the study seeks to offer insights that can guide health sector managers and policymakers in addressing geographic disparities in staff wellbeing and workplace functioning.

2. Methods

Study Design and Setting

This study adopted a cross-sectional comparative survey design to explore and compare psychological outcomes among nurses and midwives in urban and rural settings in Ghana. The study was conducted in four Catholic health facilities purposively selected to represent urban and rural locations. Fijai and Jubilee hospitals, located in Sekondi-Takoradi and Cape Coast respectively, were classified as urban due to their location in regional capitals and proximity to tertiary institutions. Eikwe and Asankrangwa hospitals, situated in the Nzema East and Wassa Amenfi West districts respectively, were considered rural given their remote settings and relatively limited infrastructure.

Population and Sampling

The target population consisted of registered nurses and midwives working in the selected facilities. A total of 287 participants were recruited using a stratified random sampling approach to ensure proportional representation from both professional categories and locations. The sample comprised 145 participants from urban hospitals and 142 from rural hospitals. Inclusion criteria required participants to have worked in their current facility for at least six months, be registered with the Nursing and Midwifery Council of Ghana, and provide informed consent. Ethical approval for the study was obtained from the appropriate institutional review board, and permissions were secured from all participating hospitals.

Instruments and Measures

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Data were collected using a structured questionnaire consisting of four validated instruments. Occupational stress was measured using the Nursing Stress Scale developed by Gray-Toft and Anderson, which assesses stress across various clinical domains (Gray-Toft & Anderson, 1981). Coping strategies were assessed using the Brief COPE Inventory, which captures both adaptive and maladaptive coping behaviours commonly employed by healthcare professionals (Carver, 1997). Workplace social relationships were measured using the Work Environment Scale (Moos, 1994), which evaluates perceptions of coworker support, supervisory relationships, and communication patterns. Psychological wellbeing was assessed using the 12-item General Health Questionnaire (GHQ-12), a reliable tool for screening mental health status in community and occupational settings (Goldberg & Hillier, 1979).

Procedure

Data were collected over a six-week period through self-administered questionnaires distributed during staff meetings and duty breaks. Participants were assured of confidentiality and anonymity. Research assistants were trained to support data collection, provide clarifications, and ensure completeness of responses. The completed questionnaires were coded and entered into SPSS version 26 for analysis.

Data Analysis

Descriptive statistics were used to summarise socio-demographic characteristics and main psychological variables. Independent samples t-tests were conducted to examine differences between urban and rural participants on occupational stress, coping strategies, workplace relationships, and psychological wellbeing. A multivariate analysis of variance (MANOVA) was conducted to examine the overall effect of location on the combined dependent variables. Interaction effects between location and demographic variables such as age, years of service, and professional category were explored using two-way ANOVA models. Significance was determined at the 0.05 level.

This methodological approach allowed for a robust comparison of psychological experiences across locations and provided deeper insight into how contextual and demographic factors interact to influence wellbeing among Ghanaian nurses and midwives.

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3. Results

3.1 Demographic Characteristics of Participants

A total of 287 nurses and midwives participated in the study, with 145 from urban hospitals and 142 from rural hospitals. Table 1 presents the demographic characteristics of respondents by location.

Table 1: Demographic Characteristics of Respondents by Facility Location

Variable	Urban (n = 145)	Rural (n = 142)	Total (N = 287)
Age Group			
18–25 years	27 (18.6%)	36 (25.4%)	63 (22.0%)
26–35 years	67 (46.2%)	61 (43.0%)	128 (44.6%)
36–45 years	38 (26.2%)	30 (21.1%)	68 (23.7%)
46 years and above	13 (9.0%)	15 (10.6%)	28 (9.8%)
Years of Experience			
Less than 5 years	49 (33.8%)	54 (38.0%)	103 (35.9%)
5–10 years	52 (35.9%)	43 (30.3%)	95 (33.1%)
More than 10 years	44 (30.3%)	45 (31.7%)	89 (31.0%)
Professional Category			
Registered Nurses	81 (55.9%)	80 (56.3%)	161 (56.1%)
Midwives	64 (44.1%)	62 (43.7%)	126 (43.9%)

The distribution of participants across age groups, years of service, and professional category was relatively even across urban and rural locations, ensuring comparability for further analyses.

3.2 Descriptive Statistics and Group Comparisons

Descriptive statistics were computed for each psychological variable across urban and rural groups, followed by independent samples t-tests to determine whether location-based differences were statistically significant.

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Table 2: Descriptive Statistics and t-test Results for Key Psychological Variables

Variable	Urban (Mean ± SD)	Rural (Mean ± SD)	t-value	p-value
Occupational Stress	3.42 ± 0.71	3.19 ± 0.66	2.91	0.004
Coping Strategies	2.88 ± 0.54	3.02 ± 0.48	-2.38	0.018
Workplace Relationships	3.47 ± 0.63	3.22 ± 0.58	3.43	0.001
Psychological Wellbeing	2.76 ± 0.68	2.95 ± 0.62	-2.31	0.021

Urban nurses and midwives reported significantly higher levels of occupational stress and stronger workplace relationships than their rural counterparts. On the other hand, rural participants demonstrated significantly better coping strategies and psychological wellbeing.

3.3 Multivariate Analysis of Variance (MANOVA)

To assess the combined influence of location on the four psychological variables, a MANOVA was conducted. The results are presented in Table 3.

Table 3: MANOVA Results for Location Effects

Source	Wilks' Lambda	F	df	p-value
Location	0.894	8.14	4, 282	<.001

The multivariate test showed a statistically significant overall effect of location on the combined dependent variables. This suggests that whether a nurse or midwife works in a rural or urban facility significantly affects their psychological profile when considered as a whole.

3.4 Interaction Effects between Location and Demographics

Two-way ANOVAs were conducted to examine whether the effects of location varied by age group, years of experience, or professional category. Table 4 summarises the significant interactions.

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Table 4: Significant Interaction Effects between Location and Demographic Factors

Interaction Term	F-value	p-value	Affected Variable
Location × Age	3.89	0.010	Occupational Stress
Location × Years of Experience	4.02	0.008	Coping Strategies
Location × Professional Category	3.77	0.012	Psychological Wellbeing

Younger professionals working in urban facilities reported higher stress levels than their counterparts in rural areas. Midwives in rural areas demonstrated significantly higher psychological wellbeing than nurses in the same location. Experience also moderated the relationship between location and coping ability, with more experienced rural staff showing stronger coping mechanisms.

4. Discussion

This study set out to compare the psychological experiences of nurses and midwives working in urban and rural health facilities in Ghana. The findings revealed significant differences in occupational stress, coping strategies, workplace relationships, and psychological wellbeing between the two groups. Nurses and midwives in urban facilities reported higher stress levels and stronger workplace relationships, while those in rural areas demonstrated more adaptive coping behaviours and better overall psychological wellbeing.

The elevated stress levels in urban hospitals are consistent with earlier findings by Oppong et al. (2022), who noted that health workers in metropolitan facilities often face overwhelming patient loads, administrative pressure, and the complexities of tertiary care. The competitive atmosphere and performance expectations in urban settings may further contribute to psychological strain. In contrast, the lower stress levels reported by rural professionals might reflect fewer bureaucratic constraints and the relatively slower pace of clinical practice, although resource limitations remain a concern (Akintola & Chikoko, 2016).

Interestingly, rural participants demonstrated stronger coping strategies and better psychological wellbeing. This aligns with the work of Boateng and Boadi (2021), who observed that healthcare workers in resource-constrained settings often develop resilient coping mechanisms through community support and intrinsic

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motivation. The role of experience was also evident in our results, with older and more experienced rural professionals showing greater psychological stability. These findings suggest that long-term adaptation and social integration in rural contexts may buffer the effects of occupational stress (Gyamfi et al., 2021).

Workplace relationships were notably stronger in urban facilities, a finding that appears counterintuitive but may reflect the structured organisational culture and peer networks often found in larger hospitals (Gershon et al., 2007). However, the protective effect of social relationships was not sufficient to mitigate the higher stress levels in urban professionals, suggesting that organisational support, though present, may not address deeper systemic challenges.

The multivariate and interaction analyses further revealed that age, years of service, and professional category influenced the psychological outcomes differently based on location. These interaction effects reinforce the view that demographic characteristics must be considered when designing interventions for healthcare staff (Odonkor & Frimpong, 2020). For instance, younger nurses in urban hospitals may benefit from targeted mentoring and structured psychosocial support, while rural midwives could be empowered through leadership roles to enhance their wellbeing and job satisfaction.

From a policy perspective, these findings point to the need for differentiated mental health strategies within the health sector. Blanket interventions may overlook the nuanced ways in which location, age, experience, and role influence stress and coping. Health facility administrators should invest in location-specific training, peer support systems, and stress management programmes. There is also a need for equitable resource distribution and professional development opportunities to bridge the gap between rural and urban facilities (WHO, 2021).

Despite its strengths, the study is not without limitations. Being cross-sectional, it cannot establish causality. The use of self-reported measures may also introduce bias, although validated instruments were employed. Furthermore, the study was limited to four Catholic hospitals, which may not fully capture the diversity of healthcare settings in Ghana. Future research could adopt longitudinal designs and include qualitative components to capture the lived experiences behind the statistical trends.

In sum, the results underscore the critical role of geographic context in shaping the psychological experiences of Ghanaian nurses and midwives. They also provide

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a compelling case for context-sensitive health workforce policies that prioritise mental health and wellbeing across all tiers of care.

5. Conclusion

This study has provided valuable insight into how occupational stress, coping strategies, workplace relationships, and psychological wellbeing differ between nurses and midwives working in urban and rural settings in Ghana. The findings confirm that geographic location significantly influences psychological outcomes, with urban health professionals experiencing higher levels of stress and lower wellbeing, while those in rural facilities reported more adaptive coping behaviours and better mental health.

The study also highlights the complex interplay between demographic factors such as age, experience, and professional category in shaping these outcomes. The interaction effects observed point to the need for targeted mental health and support strategies that reflect both the individual and environmental contexts of healthcare professionals. It is evident that one-size-fits-all approaches are insufficient to address the diverse experiences of nurses and midwives across the country.

There is an urgent need for health policy in Ghana to prioritise workforce wellbeing by investing in structured support systems, particularly for young and urban-based professionals who appear most vulnerable to stress. At the same time, efforts should be made to sustain the resilience observed in rural settings by enhancing resource availability, professional recognition, and continuous development.

Ultimately, improving the psychological wellbeing of nurses and midwives is not only a workforce issue but a quality-of-care imperative. A mentally healthy health workforce is better positioned to provide compassionate, safe, and effective care. These findings offer a foundation for future research and practice focused on equitable, responsive, and context-driven strategies to support healthcare providers across Ghana.

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