Age, Experience, and Professional Category Differences in Stress, Coping, and Wellbeing: A Multigroup ANOVA and Interaction Analysis

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Abstract

Background: The psychological wellbeing of nurses and midwives is increasingly threatened by occupational stress. However, limited attention has been given to how demographic characteristics such as age, years of service, and professional category influence their experience of stress, coping strategies, and overall wellbeing, especially in sub-Saharan African contexts.

Objective: This study investigated group differences and interaction effects of age, professional experience, and professional category on occupational stress, coping strategies, and psychological wellbeing among nurses and midwives in Catholic health facilities in Ghana.

Methods: A cross-sectional quantitative study design was used. Data were collected from 287 nurses and midwives selected through stratified sampling across four hospitals. Standardized scales were used to measure occupational stress, coping strategies, and psychological wellbeing. Multivariate Analysis of Variance (MANOVA) and post hoc ANOVAs were conducted to assess main and interaction effects of demographic variables on the three psychological outcomes.

Results: Significant multivariate effects were observed for age, years of service, and professional category ($p < .01$). Younger respondents reported significantly higher stress levels and lower coping and wellbeing scores compared to older groups. Midwives reported better psychological wellbeing than nurses ($F = 7.534$, $p = .007$), while coping improved with years of service ($F = 4.167$, $p = .006$). Significant interaction effects were

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https://doi.org/10.64261/ijaarai.v1n2.009.

found between age and professional category on wellbeing, and between years of service and category on coping.

Conclusion: Demographic factors substantially influence how nurses and midwives experience and respond to occupational stress. Younger, less experienced nurses are more vulnerable to poor psychological outcomes. These findings support the need for tailored mental health interventions and workforce policies that consider demographic-specific risks and protective factors to enhance resilience and wellbeing within the healthcare sector.

Keywords: Occupational stress, Coping strategies, Psychological wellbeing, Age, Years of service, Workforce mental health

1. Introduction

The psychological wellbeing of nurses and midwives remains a growing concern in many healthcare systems, particularly in resource-limited settings such as Ghana, where healthcare workers are often exposed to high workloads, emotional demands, and constrained institutional support. These occupational stressors can adversely affect not only the mental health of nurses and midwives but also the quality of care delivered to patients (Mensah & Amponsah-Tawiah, 2016; Odonkor & Frimpong, 2020). While prior studies have established the general impact of stress and the role of coping strategies on wellbeing, fewer have examined how these relationships vary across demographic groups within the health workforce. Understanding the influence of individual factors such as age, years of service, and professional category on stress, coping, and wellbeing is essential for the development of more nuanced and responsive workforce policies.

Age and experience have been shown to influence how nurses perceive and respond to workplace stress. Research suggests that younger nurses may be more vulnerable to stress due to their limited exposure and lower coping maturity (Gelsema et al., 2006; Pisanti et al., 2015), while older nurses tend to have

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better emotional regulation and more refined coping strategies (Chang et al., 2006). However, older professionals may also face burnout due to cumulative exposure and institutional fatigue, suggesting that age could operate in complex and bidirectional ways. Years of service, closely linked to age, may also interact with exposure to workplace trauma, job autonomy, and social support systems. For instance, a study by Khamisa et al. (2015) revealed that nurses with intermediate levels of experience were often the most stressed, possibly due to balancing clinical work with supervisory responsibilities.

Professional category is another variable worth exploring. In Ghana, midwives and nurses, while working under similar institutional conditions, often face different professional demands. Midwives deal with emotionally intense and life-threatening situations more frequently, which may increase their exposure to acute stress, but they may also derive greater meaning and satisfaction from their roles (Boafo, 2016). Nurses, particularly in general wards, may experience more chronic stress due to extended patient care duties and routine administrative burdens. Previous studies have demonstrated role-specific variations in stress and coping, with implications for targeted interventions (Gómez-Urquiza et al., 2017; Labrague et al., 2018).

Despite these insights, there remains a dearth of research in sub-Saharan Africa that comprehensively examines how demographic factors such as age, years of service, and professional role interact with occupational stress, coping strategies, and psychological wellbeing. Most existing studies in Ghana have either focused on the general effects of stress or analysed demographic data descriptively without exploring how these characteristics influence psychological outcomes (Mensah & Amponsah-Tawiah, 2016; Agyemang et al., 2023). This study seeks to fill this gap by using multivariate analysis of variance (MANOVA) to determine whether significant differences exist in the levels of stress, coping, and wellbeing based on age, years of service, and professional

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category. Additionally, it explores possible interaction effects between these demographic variables, offering deeper insight into how combinations of identity and experience shape psychological responses in the healthcare workplace.

By highlighting group-based differences and interactions, this research aims to inform more tailored and equitable workforce interventions. Understanding who is most at risk—and under what conditions—enables healthcare institutions and policymakers to design targeted stress management programs, career development strategies, and professional support systems that are both relevant and effective. Ultimately, this contributes to a more resilient and mentally healthy nursing and midwifery workforce in Ghana and comparable contexts.

2. Methods

2.1 Study Design and Setting

This study employed a cross-sectional quantitative research design to examine group differences in occupational stress,

coping strategies, and psychological wellbeing among nurses and midwives. Data were collected from four Catholic health facilities located in the Western and Western North Regions of Ghana, comprising two urban hospitals—Fijai and Jubilee—and two rural hospitals—Eikwe and Asankrangwa. These facilities were purposively selected due to their relatively stable workforce and their mix of nursing and midwifery professionals operating under varying contextual conditions.

2.2 Participants and Sampling

A total of 287 nurses and midwives participated in the study. Respondents were selected using proportionate stratified random sampling to ensure fair representation across the four facilities and professional categories. Inclusion criteria required that participants be permanently employed nurses or midwives with at least one year of continuous service at the facility. This criterion was applied to ensure that respondents had sufficient exposure to workplace dynamics and stressors. Ethical clearance was obtained from the

institutional review board, and informed consent was secured from each participant prior to data collection.

2.3 Instruments and Measures

Three validated scales were used in the questionnaire to measure the main variables:

- **Occupational Stress** was measured using a structured scale adapted from the Nursing Stress Scale (Gray-Toft & Anderson, 1981), covering dimensions such as workload, interpersonal conflict, and emotional strain.

- **Coping Strategies** were assessed using the Brief COPE Inventory (Carver, 1997), which captures both problem-focused and emotion-focused coping mechanisms.

- **Psychological Wellbeing** was measured using Ryff's Psychological Wellbeing Scale (Ryff, 1989), capturing dimensions such as autonomy, purpose in life, and self-acceptance.

Each item was rated on a 5-point Likert scale, with higher scores reflecting stronger presence of the construct.

Demographic information was also collected, including age group, sex, professional category (nurse or midwife), and years of professional service.

2.4 Data Analysis

Data were analysed using SPSS version 26. Descriptive statistics were computed for all variables. Multivariate Analysis of Variance (MANOVA) was conducted to test whether the combined dependent variables—occupational stress, coping strategies, and psychological wellbeing—differed significantly across age groups, years of service, and professional categories. Where significant multivariate effects were found, follow-up univariate ANOVAs and Tukey HSD post hoc tests were performed to examine specific group differences.

Interaction effects between age and years of service, as well as between professional category and age, were tested to assess whether combinations of

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these demographic variables significantly affected the outcomes. Assumptions of normality, homogeneity of variance-covariance matrices (Box's M), and equality of error variances (Levene's test) were tested prior to conducting MANOVA.

2.5 Ethical Considerations

Ethical approval for this study was granted by the Catholic Health Services Ethics Committee. Participation was voluntary, and respondents were assured of the confidentiality and anonymity of their responses. Data were securely stored and used solely for academic purposes.

3. Results

3.1 Demographic Characteristics of Respondents

A total of 287 respondents participated in the study, comprising 160 nurses (55.7%) and 127 midwives (44.3%). The majority of participants (41.5%) were within the age group of 26–35 years, followed by 22.6% aged 36–45 years, and 18.8% aged 46 years and above. In terms of professional experience, 39.4% had between 1–5 years of service, while 28.2% had 6–10 years, and the rest had over 10 years of experience.

Table 1: Demographic Characteristics of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Age	18–25 years	48	16.7
	26–35 years	119	41.5
	36–45 years	65	22.6
	46 years and above	54	18.8

Years of Service	1–5 years	113	39.4
	6–10 years	81	28.2
	11–15 years	58	20.2
	16 years and above	35	12.2
Professional Category	Nurse	160	55.7
	Midwife	127	44.3

3.2 Multivariate Analysis of Variance (MANOVA)

A MANOVA was conducted to examine whether age, years of service, and professional category had significant effects on the combined dependent variables: occupational stress, coping strategies, and psychological wellbeing.

Table 2: Multivariate Tests (MANOVA) for the Effects of Age, Years of Service, and Professional Category on Stress, Coping, and Wellbeing

Independent Variable	Wilks' Lambda	F	df Hypothesis	df Error	p-value
Age	0.837	4.879	9	654	< .001
Years of Service	0.861	3.932	9	654	< .001
Professional Category	0.947	5.202	3	283	.002

The results showed a statistically significant multivariate effect for **age** (Wilks' Lambda = 0.837, F(9, 654) = 4.879, p < .001), **years of service** (Wilks' Lambda = 0.861, F(9, 654) = 3.932, p < .001), and **professional category** (Wilks' Lambda = 0.947, F(3, 283) = 5.202, p = .002). These results suggest that there are meaningful group differences across demographic variables in relation to the combined dependent outcomes.

3.3 Univariate ANOVAs and Post Hoc Tests

To determine the specific outcome variables driving the multivariate significance, separate ANOVAs were conducted for each dependent variable.

Table 3: Summary of Univariate ANOVA Results for Stress, Coping, and Psychological Wellbeing by Age, Years of Service, and Professional Category

Dependent Variable	Demographic Factor	df	F	p-value	Significant Group Differences (Post Hoc)
Occupational Stress	Age	3, 283	6.101	< .001	18–25 > 36–45, 46+ (p < .01)
	Years of Service	3, 283	5.413	.001	1–5 years > 11–15, 16+ years (p < .05)
	Professional Category	1, 285	2.153	.144	Not significant
Coping Strategies	Age	3, 283	4.982	.002	46+ > 18–25 (p < .05)
	Years of Service	3, 283	4.167	.006	11–15, 16+ years > 1–5 years (p < .05)
	Professional Category	1, 285	1.029	.311	Not significant
Psychological Wellbeing	Age	3, 283	4.719	.003	36–45, 46+ > 18–25 (p < .05)

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| | Years of Service | 3, 283 | 3.582 | .014 | 11–15, 16+ years > 1–5 years (p < .05) |
| | Professional Category | 1, 285 | 7.534 | .007 | Midwives > Nurses (p < .01) |

- **Occupational Stress** varied significantly by age (F(3, 283) = 6.101, p < .001) and years of service (F(3, 283) = 5.413, p = .001). Younger respondents (18–25 years) reported significantly higher stress levels compared to those aged 36–45 and 46+, with post hoc Tukey tests confirming significant differences between the youngest and oldest age groups (p < .01).

- **Coping Strategies** also differed significantly across age (F(3, 283) = 4.982, p = .002) and years of service (F(3, 283) = 4.167, p = .006). Participants with more than 10 years of service reported higher coping scores than those with less than 5 years.

- **Psychological Wellbeing** showed significant differences by professional category (F(1, 285) = 7.534, p = .007), with midwives scoring higher on wellbeing than nurses. Age also showed a significant effect on wellbeing (F(3, 283) = 4.719, p = .003), with older professionals reporting better psychological health.

Table 4: ANOVA Results for Dependent Variables by Demographics

Variable	Factor	F-value	p-value
Occupational Stress	Age	6.101	<.001
	Years of Service	5.413	.001
	Professional Category	2.153	.144

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Coping Strategies	Age	4.982	.002
	Years of Service	4.167	.006
	Professional Category	1.029	.311
Psychological Wellbeing	Age	4.719	.003
	Years of Service	3.582	.014
	Professional Category	7.534	.007

3.4 Interaction Effects

Further analysis was conducted to test for interaction effects between age and professional category, and between years of service and professional category.

The interaction between age and professional category was significant for psychological wellbeing ($F(3, 279) = 3.624$, $p = .014$), suggesting that older midwives experience better wellbeing compared to younger nurses. Similarly, an interaction effect between years of service and professional category was found for coping strategies ($F(3, 279) = 2.991$, $p = .032$), indicating that experienced midwives tend to report higher coping ability than less experienced nurses.

These results reinforce the notion that both individual characteristics and professional identity influence how health workers respond to stress and protect their mental health.

4. Discussion

This study investigated how demographic characteristics—namely age, years of service, and professional category—influence occupational stress, coping strategies, and psychological wellbeing among nurses and midwives in Catholic health facilities in Ghana. The results confirm that demographic factors significantly shape psychological outcomes and responses to occupational stress, offering practical insights for tailored mental health interventions and workforce planning.

The findings revealed that younger nurses and midwives reported higher levels of stress, lower coping capacity, and reduced psychological wellbeing compared to their older counterparts. This aligns with previous studies that show younger healthcare professionals often lack the emotional maturity, exposure, and professional confidence to navigate workplace demands effectively (Chang et al., 2006; Khamisa et al., 2015). Research from sub-Saharan Africa suggests that younger nurses may also face greater job insecurity and less institutional recognition, which contribute to psychological strain (Yeboah & Asiamah, 2020; Odonkor & Frimpong, 2020). Older nurses, on the other hand, often develop resilience and stronger coping strategies through accumulated experience, mentorship roles, and a better understanding of system dynamics (Gelsema et al., 2006; Wang et al., 2015).

Years of service also emerged as a significant differentiator of coping and stress. Participants with longer service histories demonstrated higher coping scores and lower stress levels, confirming earlier findings that exposure to repeated occupational challenges can refine coping behaviours and enhance psychological hardiness (Pisanti et al., 2015; Labrague et al., 2018). It has been shown that years of professional engagement facilitate the internalisation of effective stress management techniques and build interpersonal support networks that buffer stress (Lee & Ashforth, 1996; Lim et al., 2010). This suggests that novice professionals need structured coping development programmes and mentoring systems to aid their adjustment into high-pressure clinical environments.

The study also showed that midwives reported significantly better psychological wellbeing than nurses, a finding supported by other research in Ghana and elsewhere (Boafo, 2016; Sun et al., 2010). Midwives may derive greater meaning and professional fulfilment from their roles, particularly due to the unique nature of childbirth and maternal care, which often carries emotionally rewarding outcomes (Pezaro

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et al., 2016). In contrast, nurses, especially those in general wards, may experience more chronic exposure to suffering, administrative overload, and often less recognition, factors which increase the risk of burnout and emotional exhaustion (McVicar, 2003; Shirey, 2006).

Importantly, the study identified significant interaction effects, particularly between age and professional category on psychological wellbeing, and between years of service and professional category on coping strategies. These findings underscore the need to view professional identity not in isolation, but in combination with age and experience when designing interventions. For instance, a young midwife may need a different kind of psychological support than a young nurse, despite both being early in their careers. Similarly, a senior nurse nearing retirement may face different wellbeing risks than a senior midwife. These interaction dynamics are often overlooked in workforce health interventions, which tend to adopt a one-size-fits-all approach (Mensah & Amponsah-Tawiah, 2016; Gómez-Urquiza et al., 2017).

The implications of these findings are both practical and policy-driven. First, there is a clear need for targeted mental health interventions that are age-sensitive and experience-specific. Younger nurses and midwives should be prioritised in early-career resilience programmes that focus on stress management, self-care, and peer support. Facilities should also institutionalise structured orientation and mentorship systems where older professionals provide psychosocial guidance to younger staff. This not only strengthens coping but may also reinforce intergenerational cohesion and reduce attrition rates (Agyemang et al., 2023; Duarte & Pinto-Gouveia, 2016).

Second, continuing professional development programmes should integrate modules on psychological resilience, emotional regulation, and stress debriefing—especially for nurses, who appear more vulnerable to negative psychological outcomes. These training

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sessions should be embedded into workplace routines and made part of staff appraisal and promotion systems. Leadership must also be trained to recognise burnout indicators and adopt supportive, rather than disciplinary, responses (Luken & Sammons, 2016; Labrague & McEnroe-Petitte, 2018).

Third, at the policy level, the Ministry of Health and the Ghana Registered Nurses and Midwives Association (GRNMA) should develop standardised mental health support frameworks that differentiate support provisions based on age and years of service. For example, rotational duties, psychological leave policies, and workload redistribution mechanisms can be designed to support groups shown to be more vulnerable, such as early-career nurses. Additionally, wellness check-ins and mental health screening should be routinely conducted to track and respond to stress patterns among health workers.

Despite its strengths, the study has some limitations. Its cross-sectional design limits causal inference, and reliance on self-report measures may introduce response bias. Furthermore, the focus on Catholic health facilities may constrain generalisability, though these institutions play a significant role in Ghana's healthcare delivery, especially in underserved regions. Future research should consider a longitudinal approach and include a broader range of facilities, including government and private institutions, to validate and extend these findings.

In summary, this study demonstrates that age, experience, and professional category meaningfully influence stress, coping, and wellbeing among nurses and midwives. The findings provide an evidence base for targeted interventions and more responsive workforce wellbeing policies in Ghana's health sector.

5. Conclusion

This study explored how age, years of professional service, and professional category influence occupational stress, coping strategies, and psychological wellbeing among nurses and midwives in selected Catholic health facilities in

Ghana. The findings indicate that these demographic characteristics significantly shape the psychological experiences of healthcare professionals, with younger, less experienced staff and nurses generally experiencing higher stress and poorer wellbeing outcomes than their older or more experienced colleagues and midwives.

Notably, the study found that midwives reported significantly better psychological wellbeing compared to nurses, and that longer years of service were associated with improved coping capacity. These insights suggest that professional identity, in combination with life stage and career maturity, has important implications for how individuals navigate workplace stressors. Moreover, the identification of interaction effects between age, experience, and professional category reinforces the need to approach staff wellbeing through a more differentiated and context-sensitive lens.

From a policy and practice perspective, these results underscore the importance of designing workforce wellbeing strategies that are not generic, but rather tailored to the unique psychological profiles and challenges of specific subgroups. Younger and early-career professionals, particularly nurses, should be prioritised for mentorship, coping skills training, and emotional support initiatives. Organisational leaders and health policymakers must recognise that demographic diversity within the nursing and midwifery workforce requires equally diverse and targeted responses if Ghana's healthcare system is to retain and nurture a mentally resilient frontline workforce.

While the study offers important contributions, its cross-sectional design and focus on faith-based facilities may limit generalisability. Future research should expand the scope to include broader facility types and explore longitudinal effects of demographic factors on psychological health. Nevertheless, this research provides a timely and evidence-based foundation for transforming how workforce mental health is conceptualised and addressed within the Ghanaian healthcare context.

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