



Factors Affecting the Efficacy of Night Shift Duties among Health Care Personnel at St Blaise Catholic Hospital, Bamenda

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Abstract

Night shift work is essential in healthcare but disrupts circadian rhythms, leading to fatigue, reduced cognitive performance, and increased risk of errors among staff. In Cameroon, night shift efficacy is affected by economic constraints such as low and inconsistent financial incentives and limited motivation. Social challenges like work-family imbalance, social isolation, and burnout further reduce performance and teamwork among night shift healthcare workers. Environmental issues including poor infrastructure, inadequate lighting, and unreliable power supply compound these effects, necessitating an assessment of these influencing factors. The main objective of this study was to determine the factors affecting night shift efficacy among health care personnel at St Blaise Catholic hospital, Bamenda. This institutional cross-sectional study was conducted over one month (10 February-6 March 2026) among consented healthcare personnel working night shifts at the hospital, using a simple random sampling technique to select a sample of 50 participants. Data was collected using structured questionnaires. Data was analyzed using Microsoft Excel and inferential statistics, including Chi-square and regression analysis, with statistical significance set at $p \leq 0.05$. Ethical approval and informed consent were obtained prior to data collection, ensuring confidentiality and voluntary participation. This study assessed demographic, economic, social, and environmental factors affecting night shift efficacy at St Blaise Catholic Hospital Bamenda using survey data and multivariate logistic regression analysis. The majority of respondents were aged 26 - 35 years (50%), female (60%), and mainly held HND/SRN qualifications (54%). Economically, 70% reported that the hospital provides motivation for night shift workers, and 80% indicated sufficient budgeting for night shift operations, although 40% reported inadequate salary for basic needs.

Regression analysis showed that age, qualification, experience, and work setting significantly influenced perceived motivation. Respondents aged 36 - 45 years were more likely to report motivation (AOR = 5.00, 95% CI: 1.02 - 24.50, $p = 0.047$), as were HND/SRN holders (AOR = 4.26, 95% CI: 1.15 - 15.80, $p = 0.031$) and those with 10 years of experience (AOR = 6.05, 95% CI: 1.20 - 30.40, $p = 0.029$). Maternity ward staff also showed higher odds (AOR = 4.71, 95% CI: 1.10 - 20.10, $p = 0.036$). For perceived adequacy of payment, significant associations were observed with age 36 - 45 years (AOR = 3.85, 95% CI: 1.10 - 13.50, $p = 0.035$), HND/SRN qualification (AOR = 3.40, 95% CI: 1.05 - 11.20, $p = 0.041$), 10 years of experience (AOR = 4.80, 95% CI: 1.30 - 17.60, $p = 0.019$), and maternity ward work setting (AOR = 3.90, 95% CI: 1.10 - 13.80, $p = 0.033$). Environmentally, 60% of respondents reported that noise and lighting affect performance, while 70% cited temperature and ventilation as influential. Socially, most respondents reported that work-life balance (80%) and social interaction (70%) significantly affect night shift performance. Night shift efficacy at St Blaise Catholic Hospital Bamenda is moderately influenced by a combination of demographic, economic, social, and environmental factors, with several variables showing statistically significant associations with staff motivation and performance.

Subject Areas

Consumer Behavior

Keywords

Economic, Social, Environmental, Factors, Night Shift Efficacy, Health Care Personnel, St Blaise Catholic Hospital

1. Introduction

Night shift work, commonly defined as employment conducted between 6 PM and 6 AM, remains an essential component of healthcare systems worldwide, ensuring continuous patient monitoring and uninterrupted service delivery [1]. In hospital settings, healthcare personnel working night shifts are expected to maintain high levels of vigilance, clinical judgment, and productivity despite operating during biologically unfavorable hours. However, evidence increasingly demonstrates that night shift work disrupts circadian rhythms and is associated with adverse health outcomes such as sleep disturbances, cardiovascular disorders, mental fatigue, and reduced cognitive performance, all of which can compromise job efficacy and patient safety [2]-[4].

The effectiveness of night shift healthcare personnel is influenced by a complex interplay of economic, social, and environmental factors. Economically, inadequate financial incentives and irregular night-duty compensation have been linked to reduced motivation, increased occupational fatigue, and diminished work commitment, particularly in resource-limited settings [5] [6]. In many low- and mid-

dle-income countries, healthcare workers often engage in additional income-generating activities to supplement insufficient salaries, thereby limiting rest and exacerbating fatigue during nocturnal duties [6]. Socially, night shift work disrupts family life, social interactions, and community participation, often resulting in work-family conflict, social isolation, psychological stress, and burnout, all of which negatively affect professional engagement and performance [7] [8]. Environmental conditions within healthcare facilities also play a critical role in determining night shift efficacy. Adequate lighting, functional equipment, proper ventilation, and safe working conditions are essential for maintaining alertness and reducing clinical errors during night hours [9] [10]. Conversely, poor infrastructure, excessive noise, uncomfortable temperatures, and limited rest areas can intensify fatigue and impair decision-making. These challenges are particularly pronounced in African healthcare settings, where limited resources, inadequate staffing, and high patient-to-provider ratios place additional strain on healthcare personnel [11] [12].

In Cameroon, healthcare institutions continue to face persistent workforce shortages, suboptimal working environments, and inadequate institutional support systems that may adversely affect night shift performance [13]. At St. Blaise Catholic Hospital in Bamenda, healthcare personnel play a critical role in sustaining overnight clinical services; however, anecdotal evidence suggests that economic stressors, social disruptions, and infrastructural constraints may compromise their efficiency and the quality of patient care. Despite the importance of these challenges, empirical data examining the determinants of night shift efficacy at the institutional level remain scarce. This study therefore seeks to assess the economic, social, and environmental factors affecting night shift efficacy among healthcare personnel at St. Blaise Catholic Hospital Bamenda, with the aim of generating evidence to inform targeted interventions and improve healthcare delivery outcomes.

2. Methodology

This study was conducted at Saint Blaise Catholic Hospital, a major faith-based healthcare institution located in Mankon, Bamenda, Cameroon, established by the Catholic Church in the 1940s and renowned for providing comprehensive medical services, including emergency care, surgery, obstetrics, and orthopedics, to the local and surrounding communities. An institutional based cross-sectional study design was employed over a one-month period from 10th February to 6th March 2026 to assess the economic, social, and environmental factors affecting the efficacy of night shift duty among healthcare personnel working night shifts. The study included consented night-duty healthcare workers and excluded those who declined participation or submitted incomplete questionnaires. A sample size of 50 participants was determined using Cochran's formula and selected through simple random sampling to minimize selection bias. Data was collected using structured questionnaires comprising socio-demographic information and sec-

tions on economic, social, and environmental determinants of night shift efficacy. The questionnaire was pretested among 20 healthcare personnel at St. John Ntughan to ensure validity and reliability. Data collection followed ethical procedures, including informed consent and participant confidentiality. Collected data was checked for accuracy, securely stored, and analyzed using Microsoft Excel, with results presented in tables, charts, and graphs. Inferential statistics, including Chi-square and regression analyses, was used to determine associations between variables, with statistical significance set at $p \leq 0.05$. Ethical approval was obtained from the relevant academic department and hospital administration before commencement of the study.

3. Results

3.1. Demographic Profile of Respondent of Respondent in the Case of Primary Data

The data shows that the highest figures across variables highlight key characteristics of the nursing workforce: the majority fall within the 26 - 35 age group (50%), indicating a relatively young but experienced workforce; most are female (60%), reflecting the gendered nature of nursing; the largest proportion hold HND/SRN qualifications (54%), suggesting mid-level professional training dominates; in terms of experience, 5 years of practice (34%) is most common, showing a balance between fresh knowledge and practical exposure; and nearly half work in maternity wards (46%), emphasizing maternal and child health as a central focus of nursing practice (**Table 1**).

Table 1. Frequency distribution of respondents based on the demographic response.

Variable	Characteristic	Frequency (n)	Percentage (%)
Ages	18 - 25	15	30
	26 - 35	25	50
	36 - 45	10	20
Total		50	100
Gender	Male	20	40
	Female	30	60
Total		50	100
Professional qualification	Nursing assistant	12	24
	HND/SRN	27	54
	Master degree	11	22
Total		50	100
Years of working experience	Less than 1 year	9	18
	1 - 5 years	14	28
	5 years	17	34
	10 years	10	20
Total		50	100

Continued

	Medical ward	5	10
Work setting	Surgical ward	12	24
	Maternity	23	46
	Casualty	10	20
Total		50	100

3.2. Economic Factors Affecting Night Shift Efficacy at St Blaise Catholic Hospital Bamenda

From the data collected, 35 participants making 70% ticked yes that hospital offer motivation for night shift workers and 15 respondent making 30% of the participant ticked no, which means that the hospital do not offer motivation to night shift workers. 40 participants making 80% of the respondent indicated that the hospital budget is sufficient to provide adequate resources for night shift operation and 10 participant making 20% of the respondent indicated that the hospital budget is not sufficient to provide adequate resource for night shift operation. According to participants respond, 30 (60%) indicated that their payment are able to take care of their needs and 20 (40%) ticked no which indicated that their payment are not able to take care of their basic needs (See **Table 2**).

Table 2. Economic factors affecting night shift Efficacy at St Blaise Catholic hospital Bamenda.

Variable	Response	Frequency (n)	Percentage (%)
Hospital offers motivation for night shift workers	Yes	35	70
	No	15	30
	Total	50	100
Hospital budget sufficient for night shift operations	Yes	40	80
	No	10	20
	Total	50	100
Payment meets workers' needs	Yes	30	60
	No	20	40
	Total	50	100

3.3. Multivariate Logistic Regression Analysis of Socio-Demographic and Work-Related Factors Associated with Perceived Motivation for Night Shift Workers

Participants aged 36 - 45 years were significantly more likely to report that the hospital offers motivation for night shift workers compared to those aged 18 - 25 years (AOR = 5.00, 95% CI: 1.02 - 24.50, $p = 0.047$). Although those aged 26 - 35 years had higher odds (AOR = 2.51), this was not statistically significant (95% CI: 0.78 - 8.05, $p = 0.120$). Female respondents showed increased odds of perceiving motivation compared to males (AOR = 2.34, 95% CI: 0.80 - 6.85), but this association was not statistically significant ($p = 0.118$). Regarding professional qualifi-

cation, respondents with HND/SRN were significantly more likely to report motivation compared to nursing assistants (AOR = 4.26, 95% CI: 1.15 - 15.80, $p = 0.031$), while those with a master's degree were not significantly different (AOR = 3.00, 95% CI: 0.72 - 12.40, $p = 0.130$). For years of experience, only those with 10 years of experience showed a statistically significant association (AOR = 6.05, 95% CI: 1.20 - 30.40, $p = 0.029$), whereas other categories did not reach statistical significance. In terms of work setting, respondents working in the maternity ward were significantly more likely to perceive motivation compared to those in the medical ward (AOR = 4.71, 95% CI: 1.10 - 20.10, $p = 0.036$). Other departments such as surgical and casualty wards were not significantly associated (See **Table 3**).

Table 3. Multivariate logistic regression analysis of socio-demographic and work-related factors associated with perceived motivation for night shift workers.

Variable	Category	β	AOR	95% CI	p-value
Age	18 - 25 (Ref)	–	1.00	–	–
	26 - 35	0.92	2.51	0.78 - 8.05	0.120
	36 - 45	1.61	5.00	1.02 - 24.50	0.047*
Gender	Male (Ref)	–	1.00	–	–
	Female	0.85	2.34	0.80 - 6.85	0.118
Professional Qualification	Nursing Assistant (Ref)	–	1.00	–	–
	HND/SRN	1.45	4.26	1.15 - 15.80	0.031*
	Master Degree	1.10	3.00	0.72 - 12.40	0.130
Years of Experience	<1 year (Ref)	–	1.00	–	–
	1 - 5 years	0.75	2.12	0.55 - 8.20	0.276
	5 years	1.30	3.67	0.98 - 13.70	0.054
	10 years	1.80	6.05	1.20 - 30.40	0.029*
Work Setting	Medical ward (Ref)	–	1.00	–	–
	Surgical ward	0.65	1.91	0.40 - 9.10	0.410
	Maternity	1.55	4.71	1.10 - 20.10	0.036*
	Casualty	0.90	2.46	0.52 - 11.70	0.255

Hospital offers motivation for night shift workers (Yes = 1, No = 0).

3.4. Multivariate Logistic Regression Analysis of Socio-Demographic and Work-Related Factors Associated with Perception That Payment Meets Workers' Needs

Respondents aged 36 - 45 years were significantly more likely to report that payment meets workers' needs compared to those aged 18 - 25 years (AOR = 3.85, 95% CI: 1.10 - 13.50, $p = 0.035$). Age group 26 - 35 years showed increased odds but was not statistically significant (AOR = 2.20, 95% CI: 0.75 - 6.40, $p = 0.150$). Female respondents had higher odds of perceiving adequate payment than males, but this association was not significant (AOR = 1.95, 95% CI: 0.72 - 5.30, $p = 0.180$).

Professional qualification significantly influenced perception, with HND/SRN holders being more likely to report that payment meets needs compared to nursing assistants (AOR = 3.40, 95% CI: 1.05 - 11.20, $p = 0.041$). Master's degree holders were not significantly different (AOR = 2.10, 95% CI: 0.60 - 7.40, $p = 0.240$). Years of experience showed a strong trend, with workers having 10 years of experience significantly more likely to report adequate payment (AOR = 4.80, 95% CI: 1.30 - 17.60, $p = 0.019$). Working in the maternity ward was significantly associated with perception of adequate payment compared to the medical ward (AOR = 3.90, 95% CI: 1.10 - 13.80, $p = 0.033$), while other wards were not significant (See **Table 4**).

Table 4. Multivariate logistic regression analysis of socio-demographic and work-related factors associated with perception that payment meets workers' needs.

Variable	Category	AOR	95% CI	p-value
Age	18 - 25 (Ref)	1.00	–	–
	26 - 35	2.20	0.75 - 6.40	0.150
	36 - 45	3.85	1.10 - 13.50	0.035*
Gender	Male (Ref)	1.00	–	–
	Female	1.95	0.72 - 5.30	0.180
Professional Qualification	Nursing Assistant (Ref)	1.00	–	–
	HND/SRN	3.40	1.05 - 11.20	0.041*
	Master Degree	2.10	0.60 - 7.40	0.240
Years of Experience	<1 year (Ref)	1.00	–	–
	1 - 5 years	1.85	0.55 - 6.20	0.320
	5 years	2.95	0.95 - 9.10	0.061
	10 years	4.80	1.30 - 17.6	0.019*
Work Setting	Medical ward (Ref)	1.00	–	–
	Surgical ward	1.60	0.35 - 7.20	0.420
	Maternity	3.90	1.10 - 13.8	0.033*
	Casualty	2.10	0.50 - 9.00	0.300

Payment meets workers' needs (Yes = 1, No = 0).

3.5. Social Factors Affecting Night Shift Efficacy at St Blaise Catholic Hospital Bamenda

The findings show that most night shift workers recognize the importance of social and personal factors in their performance. A large proportion strongly agreed that social interaction among colleagues enhances job satisfaction (46%), while many also agreed that work-life balance challenges affect effectiveness (50%). Family and friend support was seen as beneficial, with 40% strongly agreeing, though 30% disagreed, showing mixed perceptions. Cultural attitudes presented the greatest challenge, as 40% strongly disagreed that they positively affect morale, suggesting cultural barriers to night shift acceptance. Finally, half of respondents agreed that social support networks improve job efficacy (50%), highlighting the

role of external support systems (**Table 5**).

Table 5. Distribution of respondent base on social factors affecting night shift efficacy.

Variable	Characteristic	Frequency	Percentage (%)
Support from family and friends positively influences night shift workers' performance	Strongly Agree	20	40
	Agree	10	20
	Disagree	15	30
	Strongly Disagree	5	10
Work-life balance challenges impact the effectiveness of night shift staff	Strongly Agree	15	30
	Agree	25	50
	Disagree	3	6
	Strongly Disagree	7	14
Social interaction among night shift employees enhances job satisfaction	Strongly Agree	23	46
	Agree	12	24
	Disagree	10	20
	Strongly Disagree	5	10
Cultural attitudes towards night shifts affect staff morale and performance	Strongly Agree	17	34
	Agree	3	6
	Disagree	10	20
	Strongly Disagree	20	40
Availability of social support networks for night shift workers improves their job efficacy	Strongly Agree	2	4
	Agree	25	50
	Disagree	16	32
	Strongly Disagree	7	14
Total		50	100

3.6. Environmental Factors Affecting Night Shift Efficacy at St Blaise Catholic Hospital Bamenda

According to participant respond, 30 (60%) ticked yes which indicated that noise level can affect the performance of night shift staff and 20(40%) ticked no which means that noise level cannot affect the performance of night shift workers. out of the 50 respondent, 30 respondent making 60% of the participant ticked yes which shows that lightening level can affects night shift performance and 20 respondents making 40% of the participant ticked no which means lightening level cannot affect the performance of night shift staff. 35 respondent making 70% of the participant ticked yes which shows that temperature and ventilation condition impact the comfort of night shift employees and 15 respondent making 30% of the participant ticked no which shows that temperature and ventilation condition do not

impact the comfort of night shift workers. 30 respondent making 60% of the participant ticked yes which shows that there are enough safety measures during night shift and 20 respondent making 40% ticked no which shows that there are not enough safety measures during night shift duty. Out of the 50 respondent, 40 making (80%) of the participant ticked yes which means that they stay far from the hospital and 10 making (20%) of the participant ticked no which means they stay near the hospital (See **Table 6**).

Table 6. Environmental factors affecting night shift efficacy at St Blaise Catholic Hospital Bamenda.

Variable	Response	Frequency (n)	Percentage (%)
Noise level affects night shift performance	Yes	30	60
	No	20	40
	Total	50	100
Lighting level affects night shift performance	Yes	30	60
	No	20	40
	Total	50	100
Temperature and ventilation impact comfort of night shift workers	Yes	35	70
	No	15	30
	Total	50	100
Adequate safety measures during night shift	Yes	30	60
	No	20	40
	Total	50	100
Distance from hospital residence	Far	40	80
	Near	10	20
	Total	50	100

3.7. Multivariate Logistic Regression Analysis of Socio-Demographic and Work-Related Factors Associated with Distance from Hospital Residence

Older staff (36 - 45 years) showed higher odds of living far from the hospital compared to younger staff, although this was not statistically significant (AOR = 3.10, 95% CI: 0.70 - 13.80, $p = 0.120$). Gender was not associated with distance from residence (AOR = 1.40, 95% CI: 0.45 - 4.40, $p = 0.560$). Professional qualification showed a positive but non-significant trend, with HND/SRN holders (AOR = 2.85, 95% CI: 0.80 - 10.20, $p = 0.105$) and Master's degree holders (AOR = 3.20, 95% CI: 0.75 - 13.60, $p = 0.115$) more likely to live far from the hospital compared to nursing assistants. Years of working experience was the only significant predictor, where respondents with 10 years of experience were significantly more likely to reside far from the hospital compared to those with less than 1 year of experience (AOR = 4.50, 95% CI: 1.10 - 18.40, $p = 0.038$) (See **Table 7**).

Table 7. Multivariate logistic regression analysis of socio-demographic and work-related factors associated with distance from hospital residence.

Variable	Category	AOR	95% CI	p-value
Age	18 - 25 (Ref)	1.00	–	–
	26 - 35	1.95	0.50 - 7.60	0.330
	36 - 45	3.10	0.70 - 13.80	0.120
Gender	Male (Ref)	1.00	–	–
	Female	1.40	0.45 - 4.40	0.560
Professional Qualification	Nursing Assistant (Ref)	1.00	–	–
	HND/SRN	2.85	0.80 - 10.20	0.105
	Master Degree	3.20	0.75 - 13.60	0.115
Years of Experience	<1 year (Ref)	1.00	–	–
	1 - 5 years	1.60	0.40 - 6.30	0.510
	5 years	2.40	0.65 - 9.10	0.190
	10 years	4.50	1.10 - 18.40	0.038*
Work Setting	Medical ward (Ref)	1.00	–	–
	Surgical ward	1.30	0.20 - 8.20	0.780
	Maternity	2.70	0.70 - 10.50	0.140
	Casualty	1.90	0.40 - 9.00	0.420

Distance from hospital residence (Far = 1, Near = 0).

4. Discussion

The socio-demographic profile of respondents revealed a relatively young, moderately experienced, and predominantly female healthcare workforce, with most participants aged 26 - 35 years and females comprising 60% of respondents. This reflects workforce patterns commonly observed in low- and middle-income countries, where healthcare systems rely heavily on younger professionals due to ongoing workforce shortages and attrition [13] [14]. The predominance of female healthcare personnel is consistent with global nursing trends and is particularly relevant in the context of night shift work, as female workers often experience greater work-family conflict and fatigue, which may affect shift performance [15] [16]. The dominance of HND/SRN holders suggests that mid-level professionals constitute the backbone of service delivery, highlighting the importance of continuous professional development and supportive supervision to sustain clinical competence and effective workload management [17]. Additionally, the concentration of respondents in maternity services aligns with Cameroon's national healthcare priorities emphasizing maternal and neonatal care [18].

Economic factors were identified as important determinants of night shift efficacy. Although a majority of respondents reported receiving some form of motivation for night duty and perceived institutional budgeting for night operations as sufficient, a substantial proportion indicated that their salaries were inadequate to meet basic needs. This finding supports earlier evidence that financial incen-

tives significantly influence motivation, job satisfaction, and performance among healthcare personnel [5] [19]. As noted in the introduction, inadequate remuneration and inconsistent compensation can contribute to occupational fatigue, reduced commitment, and diminished concentration during night duties [6]. The disparity between perceived institutional support and personal economic dissatisfaction suggests that financial planning alone may not adequately address individual motivation unless compensation is perceived as fair and commensurate with workload demands [20].

Social factors also significantly influenced night shift effectiveness. Positive social interaction among colleagues was widely recognized as enhancing job satisfaction and resilience, supporting previous findings that collegial support improves teamwork, reduces occupational stress, and promotes better patient care outcomes [21]. However, work-life imbalance emerged as a major challenge, with most respondents reporting that night shifts negatively affected family routines and personal well-being. This finding reinforces earlier evidence that night work disrupts social and family life, contributing to burnout, sleep deprivation, and decreased professional engagement [7] [8]. Social support from family and friends appeared beneficial but varied across respondents, likely reflecting differences in personal responsibilities and household structures. Furthermore, negative cultural perceptions of night shift work may reduce professional recognition and morale, particularly in African settings where nocturnal work is often associated with hardship and limited social appreciation [22].

Environmental conditions were found to be major determinants of night shift performance. Most respondents identified poor lighting, excessive noise, and inadequate temperature or ventilation as factors that negatively affected their effectiveness. These findings are consistent with previous reports highlighting the importance of supportive physical environments in maintaining alertness, reducing fatigue, and minimizing clinical errors during night shifts [9] [10]. Inadequate safety measures during night duty further raised concerns about occupational security and psychological well-being, both of which are critical for effective healthcare delivery [23]. Additionally, long residential distances from the hospital were reported by many respondents and may contribute to commuting fatigue, reduced sleep duration, and impaired readiness for duty. Overall, these findings support the evidence presented in the introduction that economic, social, and environmental stressors interact cumulatively to influence the efficacy of healthcare personnel working night shifts, ultimately affecting both staff well-being and quality of patient care [12].

5. Conclusion

Night shift efficacy at St Blaise Catholic Hospital Bamenda is influenced by an interplay of demographic, economic, social, and environmental factors. The workforce is predominantly young, moderately experienced, and female, which shapes both strengths and vulnerabilities in shift performance. Economic condi-

tions are partially supportive at the institutional level, but individual salary dissatisfaction remains a key limitation. Socially, teamwork and support systems enhance performance, while work-life imbalance and cultural perceptions reduce effectiveness. Environmentally, poor working conditions and long commuting distances significantly undermine night shift efficiency.

Limitations

This study had several limitations that should be considered when interpreting the findings. First, the use of a cross-sectional study design limited the ability to establish causal relationships between economic, social, and environmental factors and night shift efficacy. Second, data were collected through self-reported questionnaires, which may have introduced response bias, including social desirability and recall bias. Third, the relatively small sample size and focus on a single institution—Saint Blaise Catholic Hospital, may limit the generalizability of the findings to other healthcare settings in Cameroon. Additionally, time constraints during the one-month study period may have restricted broader participant engagement and more in-depth exploration of contextual factors influencing night shift performance.

Conflicts of Interest

The authors declare no conflicts of interest.

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