



Financial management skills of nurse managers in the Eastern Region of Ghana

Yennuten Paarima^{a,b}, Atswei Adzo Kwashie^a, Adelaide Maria Ansah Ofei^{a,*}

^a Department of Research, Education, and Administration, School of Nursing and Midwifery, University of Ghana, Legon, Accra, Ghana

^b Goldfarb School of Nursing, Barnes Jewish College, Washington University in St. Louis, MO, USA

ARTICLE INFO

Keywords:

Nurse manager

Financial management skills

Ghana

ABSTRACT

Background: Ghana's healthcare sectors are faced with several financial challenges due to increased funding cuts and delayed reimbursement from the National Health Insurance Authority (NHIA). This has necessitated nurse manager to build financial management skills to enable them to lead in the provision of effective and efficient care while reducing cost. This demands adequate knowledge and skills in financial management. The study examined the financial management skills of nurse managers at the unit level.

Methods: A quantitative approach using a cross-sectional design was employed using the census approach to collect data from 121 nurse managers in ten hospitals in the Eastern Region of Ghana. Data analyses were performed using descriptive and linear regression analyses.

Findings: Nurse managers showed a moderate level of knowledge and skills in financial management. Age, gender, qualification, experience as a nurse manager, and training in management jointly predicted nurse managers' financial management ($R^2 = 0.12$, $p = 0.029$). However, only training in management significantly contributed to the financial skills of nurse managers.

Conclusion: Nurse managers play a significant role in the financial management of hospitals but have inadequate knowledge, skills, and competence in financial management. Recommendations include well-structured training and education on financial management using a multidisciplinary approach to enable nurse managers to gain the required knowledge and skills. Continuous experiential learning and mentorship programs should be developed for nurses before the assumption of management positions.

1. Introduction

Globally, the provision of healthcare even at the smallest unit is complicated and healthcare institutions are faced with several challenges including the rising cost of care and increase cuts in healthcare funding (Asamani, Naab, & Ofei, 2016). This calls for nurse managers to manage nursing units prudently and to find innovative approaches to overcome and manage the financial challenges in the units (Naranjee, Sibiya, & Ngxongo, 2019). To achieve these, require nurse managers to exhibit adequate knowledge and ability in financial management skills since they control the largest proportion of the hospital's labor budget (Lim & Noh, 2015).

Financial management skill is the process of 'implementing and managing financial control systems, collecting financial data, analyzing financial reports and making sound financial control decisions based on the analysis' (Chase, 2010). Nurse managers' ability to implement

financial management systems is a critical determinant of healthcare financial stability (Noh & Lim, 2019). However, most nurse managers are appointed based on seniority and clinical proficiency without taking into consideration the needed competencies, especially, financial management skills (Mcfarlan, 2015).

Many nurse managers even after several years of professional practice still lack self-confidence in financial management and therefore leave all financial issues to hospital administrators and accountants (Baxter & Warshawsky, 2014; Mcfarlan, 2015) to manage. Thus, even though nurse managers are responsible for the day-to-day activities at the unit level where a greater proportion of healthcare resources are consumed, their ability to effectively oversee this vital responsibility can mean the difference between a hospital's financial stability and financial turmoil (Lim & Noh, 2015; Waxman & Massarweh, 2018). In-depth knowledge of nurse managers about financial management will enable them to engage staff about proficiency and cost efficiency in the unit

* Corresponding author.

E-mail addresses: y Paarima@ug.edu.gh, p.yennuten@wustl.edu (Y. Paarima), aakwashie@ug.edu.gh (A.A. Kwashie), aansahofei@ug.edu.gh (A.M.A. Ofei).

<https://doi.org/10.1016/j.ijans.2020.100269>

Received 16 August 2020; Received in revised form 17 November 2020; Accepted 26 November 2020

Available online 1 December 2020

2214-1391/© 2020 The Author(s).

Published by Elsevier Ltd.

This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

where most healthcare services are provided (Waxman & Massarweh, 2018).

In Ghana, the roles of nurse managers include overseeing nurses and translating hospitals' visions and goals into action (Ofei, Sakyi, Bua-beng, Mwini-nyaledzigbor, & Asiedua, 2014). Public sector hospitals are state-sponsored and deliver over 80 percent of the healthcare needs of the citizenry (Ataguba & McIntyre, 2012). However, these hospitals are confronted with financial constraints, reduced budgets, poor management, inadequate resources, and deteriorating infrastructure which affect the ability to provide efficient and quality care (Naranjee, Sibiya et al., 2019; Ofei, 2015). This has led to nurse managers' managing nursing units with inadequate logistics which negatively affects the provision of healthcare. To respond to these financial challenges and provide cost-efficient healthcare, nurse managers are required to possess adequate financial management skills (Naranjee, Sibiya et al., 2019). The traditional management practices of which nurse managers are deficient in financial management are no longer relevant in today's demanding and financially constrained healthcare systems (Naranjee, Ngxongo, & Sibiya, 2019).

Consequently, though there is steady increasing awareness of financial management know-how among nurses, several hospitals still see financial management as one of the major limitations of nurse managers (Naranjee, Sibiya et al., 2019). The limited skills of nurse managers in financial management make it difficult for them to understand finances hence, not able to take control and responsibilities for the financial planning and management of nursing units (Naranjee, Ngxongo et al., 2019).

Nurse managers' roles have substantially changed from clinical skills and control of professional nurses to include human and financial resource management skills (Naranjee, Sibiya et al., 2019). Current healthcare systems, ensure nurses understand that both private and state-owned hospitals need financial management skills to function well, remain relevant and competitive among its peers (Ofei, 2015). Appointments and promotions of nurse managers' in public hospitals do not consider financial management skills as an essential function (Naranjee, Sibiya et al., 2019). Yet it is required of nurse managers to understand and develop budgets and manage the finances of nursing units (Waxman & Massarweh, 2018). Adequate knowledge and understanding of healthcare costs, enable nurse managers to have insight into management and leadership challenges confronting healthcare (Naranjee, Sibiya et al., 2019). Given this, nurse managers need training and education on their roles in the management of hospital finances (Thew, 2015).

In a quantitative study Chase (2010) identified containment and cost avoidance, productivity measures, unit budget forecasting generation, cost-benefit analysis, unit budget control measures, financial resource procurement, and financial resource monitoring as critical financial management skills required of nurse managers. According to Chase (2010), unit budget forecasting has been described as the ability to predict future events based on knowledge acquired through intuition and systematic process. Poor understanding of unit budget forecasting generation and unit budget control measures hinders progress toward the delivery of cost-efficient healthcare and reducing wastage at the unit level (Anderson et al., 2020; Walsh, 2016). Therefore, nurse managers must be familiar with these critical financial management skills since they are responsible for the operating and capital budget in hospitals. In preparing a unit-level budget, nurse managers should first determine what services are being offered or to be offered and what control measures to put in place to ensure cost-effectiveness (Rundio, 2016).

Furthermore, to ensure the efficient allocation of limited healthcare resources requires nurse managers to get involved in the cost-benefit analysis so that resource allocations are made into more profitable units and departments (Moran et al., 2020; Rashidian, Alinia, & Majdzadeh, 2015). Cost-benefit analysis involves the analysis of health care resource expenditures in relation to possible benefits (Moran et al., 2020). Knowledge in cost-benefit analysis offer nurse managers the

opportunity to make an input in setting priorities when it comes to making choices in the face of inadequate resources. Nurse managers must understand the unit cost per patient and outpatient in a day to enable them to know how much monies nursing units are generating (Than et al., 2017).

In a study to examine nursing productivity using financial statements in South Korea, Noh and Lim (2019) found that although the financial ratios of nurses were generally poor, nursing productivities were very good. The researchers therefore recommended that nurse managers request an increase in nursing staff based on the high productivity despite the poor financial conditions. It is therefore not surprising that the need for nurse managers to speak financial language is beginning to emerge at the unit level within healthcare systems (Waxman & Massarweh, 2018). However, Bai et al. (2017) reported inadequate financial management skills among nurse managers in China. Nurse managers who took part in the study lamented they were confronted with several challenges in financial management practices as a result of inadequate training and education on finance and nursing economics (Bai et al., 2017).

Similarly, Naranjee, Sibiya et al. (2019) posited that most nurse managers are deficient in financial management skills and mainly gain some financial management through trial and error. Rundio (2016) in a study showed that financial management is not adequately addressed in the curricula of nursing training as the focus is on clinical competencies with little or no attention to business orientation and financial skills.

Besides, nurses do not receive training in financial management or the necessary experience in managing finances (Penner, 2015). Nurse managers must be adequately prepared in financial management to enable them to efficiently and effectively contain costs and manage expenditures within their units (Naranjee, Sibiya et al., 2019). Financial management skills can help nurse managers to better manage the current healthcare situation which is grapple with fund cut. However, there is limited data and research information within the Ghanaian context establishing the financial management skills of nurse managers in Ghana despite their pivotal role at the unit level. Few studies that explored the critical role of the nurse managers in Ghana fell short of establishing their financial management skill. For instance, in a quantitative study to examine the management competencies of nurse managers in the Greater Accra, Ofei, Paarima, and Barnes (2020) reported a low financial awareness among nurse managers at the unit level. Similarly, Asamani, Naab, Ofei, and Addo (2016) found self perception of high productivity among health workers. Given this, there is paucity of research information on the financial management skills of nurse managers in the Ghanaian context. This current study therefore examined the financial management skills of nurse managers at the unit level in the Eastern Region of Ghana.

2. Aim of the study

The study aim was to examine the financial management skills of nurse managers at the unit level in the Eastern Region of Ghana.

2.1. Brief overview of Ghana's health system

The health system of Ghana is managed by the Ministry of Health and it is made up of the public sector, the private sector, the traditional sector, and other sectors. The public sector is made up of the agencies namely, the Ghana Health Service (GHS), the Teaching hospitals (THs), Quasi-Government institutions, Christian Health Association of Ghana (CHAG), statutory bodies, Ghana Ambulance Service and the Food and Drugs Authority (Asamani, Chebere, & Barton, 2018; Ofei et al., 2020). The GHS is the largest agency and can be found in all the regions, districts, sub-districts, and the community. The THs are autonomous and serve as national referral healthcare facilities with the mandate of providing excellence in healthcare, conducting research, managing complicated health problems, and offering staff training (Asamani et al.,

2018; Ofei et al., 2020). The health system of Ghana is administratively organized at three levels; the national level, the regional level, and the district level. Whereas, functionally, the health system is organized at five levels: the national level, the regional level, the district level, the sub-district level, and the community level to make possible the taking of healthcare to the doorsteps of the people (Ministry of Health, 2014).

In Ghana, nursing management and administration is organized in three levels; thus, the executive level, the middle level, and the unit level (Ofei, 2015). The executive managers are responsible for making organization-wide decisions and establishing plans and goals that affect the entire organization. The middle-level managers manage the work of unit-level managers while the unit level managers manage the work of non-managerial employees (Ofei et al., 2020). The study focused on unit-level managers who constitute the majority of nursing managers in Ghana. A unit-level managers are professional nurses who has been given the responsibility for the day-to-day management of the units/wards to bring about efficiency and effectiveness as well as patient and staff satisfaction (Paarima, Ofei, & Kwashie, 2020). The researchers purposefully chose this group of nurse managers due to their central role in Ghana's health system.

3. Methodology

3.1. Design and setting

The study employed a quantitative approach using a cross-sectional design to examine the financial management skills of nurse managers in ten selected hospitals in the Eastern Region which is located in the southern part of Ghana. Eastern region is the sixth-largest and the third most populous region with a total population of 3,244,834 representing 10.4% of Ghana's population in 2019 (Ghana Statistical Service, 2020). The region was chosen because most of the hospitals are located in deprived and peri-urban towns which are far from the national capital with limited social amenities. The selected hospitals included one specialized hospital, eight district hospitals, and one regional hospital.

3.2. Study population and data collection

The target population was all nurse managers in the ten hospitals. Inclusion criteria were nurse managers who worked for at least one year as a manager and were interested in participating in the study. The nurse managers are senior nurses who have been appointed by management as in-charges of the nursing units. Nursing service administrators (matrons), nurses on national service, and nurses who were not nurse managers were all excluded. Since nurse managers are many, the researchers employed a census technique in data collection using printed questionnaire. A census technique is a data collection approach that allows the researcher(s) to collect data from all elements in a target population and to examine one or more characteristics of those elements (Polit & Beck, 2014). The sample size was not calculated because of the numbers of nurse managers in the hospitals, they were all included in the study except those who declined to participate. The researchers chose this approach to have adequate representation for each selected hospital.

Once permission was sought and obtained from the management of the hospitals, the researchers proceeded with the data collection process. In each hospital, a specific number of questionnaires were allocated based on the total number of nurse managers. At the unit level, nurse managers were approached individually and after a vivid explanation of the study and its intent, the nurse manager who agreed to participate in the study was given a voluntary consent form to sign and after which the self administered questionnaire was given. The nurse manager completed the printed questionnaire in their office. A period of 12-weeks (January to March 2018) was used for data collection. Out of 123 nurse managers, 121 constituting 98.4% response rate completed and returned the questionnaire for analysis.

Nurse Managers Competencies Instrument (NMCI) developed by Linda Chase (2010) was adopted and slightly modified to suit the study's purpose and objectives. The original NMCI has five domains, thus; technical skills, human skill, conceptual skill, leadership skill and financial management skill. However, based on this current study objective, only the financial management skill domain was adopted. The financial management skill domain had 7-items measured on a 4-point Likert scale (Chase, 2010). Official permission to adopt and modify the instrument to suit the study objective was sought and obtained from Linda Chase the originator of the instrument through Ichase@iuhealth.org. In this study, the instrument was modified into a 5-point scale (1 = poor, 5 = excellent). The fifth scale was introduced to indicate the possibility of highest (excellent) level of skill which is consistent with previous study utilizing the instrument (Karathanasi, Prezerakos, Maria, Siskou, & Kaitelidou, 2014). The questionnaire was grouped into two sections: section A collected participant's sociodemographic data while section B contained the NMCI questionnaire on financial management skills.

3.3. Validity and reliability

The validity of the tool was maintained primarily through the face and content validity. Structurally, the face validity was ensured by arranging questions to reflect the study objectives. The authors equally ensured that all the study objectives have been captured by the questionnaire. The questionnaire captured all the variables under study. To maintain content validity, the study constructs were thoroughly conceptualized to ensure that it adequately captures the content domain as well as extensive review of literature to capture the depth of the phenomenon. Again, the tool was also scrutinized by nurse managers and nursing management experts. To ensure reliability, the tool was pretested at a different hospital with twelve nurse managers and the results used to modify areas of ambiguities and correction of grammatical errors. The Cronbach's alpha coefficient of the financial management skill domain in the original instrument was 0.92. However, in this study, it yielded a Cronbach alpha coefficient of 0.978 which is considered acceptable (Polit & Beck, 2014).

3.4. Ethical clearance

The Noguchi Memorial Institute for Medical Research Institutional Review Board of the University of Ghana approved the study (CPN 023/17-18). An introductory letter from the School of Nursing and Midwifery, the University of Ghana describing the study aim and the questionnaires were sent to the management of the selected hospitals for official permission to collect data. In this study, there was no physical harm to respondents as it was a non-experimental and the research questionnaire did not contain items that may trigger stress or anxiety in respondents. However, ethical principles of respect for autonomy, beneficence, non-maleficence, and justice were applied. All the respondents received full disclosure of the study nature, purpose, risk, benefits, and right to withdraw at any time without giving reason(s). Confidentiality was maintained throughout the study by ensuring that respondents' rights were protected, and information divulged to researchers was not disclosed to unauthorized persons. Beneficence was maintained by ensuring that respondents were not physically and psychologically harmed from fatigue resulting from completing the questionnaire. To maintain anonymity, no names or other identifying information were collected. Written consent was obtained from each respondent after which the questionnaire was administered.

3.5. Data analysis

Descriptive and multiple linear regression analyses were performed using Statistical Package for Social Sciences version 23.0. Descriptive statistics were used to summarize respondents' sociodemographic data

and financial management competencies. Multiple linear regression analyses were conducted to determine the influence of nurse manager characteristics (gender, rank, experience as nurse manager, training in management, and qualification) on financial management competencies. Scores were interpreted as; 1-very low, 2-low, 3-moderate, and 4-high. Higher scores reflected a higher level of financial management skills at the unit.

4. Results

4.1. Participants characteristics

The results in Table 1 showed the mean age of the participants was 38.8 years (SD = 9.83) with 32-years being the modal age. Most of the participants (n = 89, 73.6%) were females while 24.7% (n = 30) were males. Majority of the participants (n = 66, 54.6%) were between 30 and 39 years. Participants in the Nursing Officer's rank constituted majority (n = 47, 38.8%). Also, most of the participants (n = 58, 47.9%) were first-degree holders and only 7.4% (n = 9) had a master's degree. Finally, majority of the participants (n = 21, 17.4%) work in the specialized units.

4.2. Financial management skills of nurse managers

Results in Table 2 show the mean score of knowledge of financial management skills was 3.19 (SD = 0.92) and the ability to apply financial management skills was 2.64 (SD = 0.86). The highest score of financial management skill was knowledge of productivity (mean =

Table 1

Demographic characteristics of unit level Managers.

Variables		Frequency (n)	Percentage (%)
Gender	Male	30	24.7
	Female	89	73.6
	Missing values	2	1.8
	Total	121	100
Age	20–29	10	8.3
	30–39	66	54.6
	40–49	10	8.3
	50–59	25	20.7
	≤60	1	0.8
	Total	121	100
Rank	Staff Nurse	4	3.3
	Senior Staff Nurse	17	14
	Nursing Officer	47	38.8
	Senior Nursing Officer	30	24.9
	Principal Nursing Officer	23	19
	Total	121	100
Qualification	Certificate in nursing	15	12.4
	Diploma in nursing	20	16.5
	Post Basic nursing	19	15.7
	First degree in nursing	58	47.9
	Masters in nursing	9	7.4
	Total	121	100
Unit	Emergency	6	5
	Maternity	16	13.2
	Surgical	11	9.1
	Medical	23	19
	Theatre	10	8.8
	OPD	10	8.8
	Children	9	9.4
	Specialized Unit	21	17.4
	Others	15	12.4
	Total	121	100

Source: field data 2018.

Table 2

Financial management skills of unit level Nurse Managers.

Financial management skills	Min	Max	Knowledge of skill		Ability to apply skill		Mean Difference
			Mean	SD	Mean	SD	
Financial management skills (mean score)	1	5	3.19	0.92	2.64	0.86	0.55
Cost containing and cost management	1	5	3.27	1.05	3.16	1.12	0.11
Productivity measures	1	5	3.41	1.01	3.25	1.07	0.16
Unit budget forecasting generation	1	5	3.30	1.04	3.12	1.14	0.18
Cost benefit analysis	1	5	3.17	0.98	3.04	1.07	0.13
Unit budget control measures	1	5	3.21	1.06	3.01	1.11	0.20
Financial resource procurement	1	5	2.99	1.06	2.88	1.12	0.11
Financial resource monitoring	1	5	2.98	1.06	2.89	1.13	0.10

Notes: Higher scores show a high level of skills based on a 5-point scale.

3.41, SD = 1.01) and the ability to apply (mean = 3.25, SD = 1.07). This was followed by knowledge of unit budget forecasting generation (mean = 3.30, SD = 1.04) and the ability to unit budget forecasting generation (mean = 3.12, SD = 1.14). The knowledge of financial resource management (mean = 2.98, SD = 1.06) and ability to apply (mean = 2.89, SD = 1.13).

Furthermore, gender, age, rank, experience as nurse manager, training in management and qualification jointly explained 12% of the difference in nurse manager financial management skills [$R^2 = 0.12$, $F_{(5, 101)} = 2.619$, $p = 0.029$]. However, when the predictors were further examined for their individual contribution to the regression model, only training in management ($p = 0.02$) was a significant predictor in the model. Details are presented in Table 3.

5. Discussion

5.1. Demographic characteristics nurse managers at the unit level.

The participants' mean age was about 38.8 (SD = 9.83) and a modal of 32-years. This conforms with the average age of nurse managers in Ghana which is projected to be between 25 and 39 years (Ghana Health Service, 2017). Asamani, Naab, and Ofei (2016) and Azaare and Gross (2011) also reported similar findings in their studies. This means there is a young cohort of nurse managers in Ghana's health system. This suggests that these nurse managers might possess limited or no financial management skills due to inadequate experience in management. Furthermore, the study established that the most (73.6%) of the participants were female and 24.7% males. This finding is consistent with a commonly held view that nursing is a female-dominated profession. However, this finding suggests that this view might be gradually changing with many males choosing nursing as a profession in Ghana (Ofei et al., 2020; Paarima et al., 2020).

Majority (38.8%) of the participants were Nursing Officers and have been working for 3–5 years or more depending on their entering grade. This finding is inconsistent with the work of Asamani, Naab, and Ofei (2016) in which Senior Staff Nurses constituted the majority of the nurse managers. Even though both studies were conducted in the Eastern Region of Ghana, Asamani, Naab, and Ofei (2016) explored five

Table 3

Influence of Nurse Manager characteristics on financial management skills.

Model 1	Predictors	B	Standardized Coefficients		t-value	p-value	95% Confidence Interval	
			Beta				Lower	Upper
	(Constant)	60.40			7.42	<0.001	44.24	76.57
	Gender	-3.44	-0.11		-1.05	0.30	-9.96	3.08
	Rank	1.18	0.09		0.72	0.48	-2.10	4.46
	Experience as Nurse Manager	-0.53	-0.17		-1.37	0.17	-1.30	0.24
	Training in management	0.28	-0.30		-3.13	0.02	-13.46	-3.02
	Highest qualification	0.01	0.01		0.01	0.99	-2.53	2.55
Model summary R ² = 0.12, F _(5, 101) = 2.619, p = 0.029								

Note: Dependent variable: Total financial management skills, Criterion level: 0.05.

hospitals using 275 nurses whereas, this current study was conducted in ten hospitals using 121 Nurse Managers. Again, the finding contradicts nurses' job description as outlined by Ghana Health Service which stipulates that nurse manager should be at least a Senior Nursing Officer in rank (Ofei et al., 2020; Paarima et al., 2020). This means that majority of the participants are not qualified to occupy such a vital position. However, due to the circumstances at hand, they are compelled to assume the position of a nurse manager without the requisite competencies and qualifications. This situation can have serious implications for both staff and patient outcomes (Asamani, Naab, & Ofei, 2016; Ofei et al., 2020; Paarima et al., 2020)

5.2. Financial management skills of unit level nurse managers

The persistent call for financial management skills among nurse managers is in the right direction due to the vital role they play in the health system (Naranjee, Sibiya et al., 2019; Noh & Lim, 2019). The study revealed a moderate level of financial management skills among nurse managers at the unit level. This implies that the nurse managers generally exhibit satisfactory knowledge and skill in financial management. The moderate score affirms the opinion that nurse managers lack financial management skills and therefore, do not normally participate in the organizational financial budgeting processes. As asserted by Ofei (2015), nurse managers simply get the resources that are required for running a unit within a specific period and leave the entire financial budgeting to hospital administrators and accountants. In Ghana, nurse managers are not involved in organizational financial budgeting, however, hospital management expects them to reduce waste and provide cost-effective healthcare (Asamani, Naab, & Ofei, 2016). Given their important role, nurse managers at all levels should be involved in how funds are allocated and spent because most of the funds are generated and consumed at the unit level. Similar findings have been reported in Israel, China, the US, China, and South Africa (Bai et al., 2017; Chase, 2010; Naranjee, Sibiya et al., 2019; Natan & Noy, 2016). The need for frequent financial management training of nurse managers prior to the assumption of the office can easily resolve this canker.

Furthermore, knowledge and ability to apply productivity measures moderately by nurse managers. This implies nurse managers in this current study exhibit an acceptable level of productivity measures. Due to the shortage of nurses, the issue of productivity is of great concern for healthcare managers though there is a lack of international standard productivity measures. Asamani, Naab, and Ofei (2016) suggest that one major productive measure at the unit is reducing nurse absenteeism through effective staff scheduling. However, it has been argued that absenteeism is not a good productivity measure. Being present at work reportedly cannot be used as a measure to determine staff productivity because it is possible for staff to come to work but yet remain unproductive (Asamani, Naab, & Ofei, 2016). Therefore, effective monitoring and supervision of nurses will go a long to improve productivity. Noh and Lim (2019) reported similar findings among nurse managers in South Korea.

In addition, the participants perceive a low level of knowledge and

ability to apply financial resource management. Being the largest workforce in healthcare, nurse managers and their followers play a critical role in financial resource management. Resource control and asset management are critical components of resource management thus, nurse managers should ensure prudent utilization by carefully controlling and supervising the judicious use of resources at the unit level (Waxman & Massarweh, 2018). According to Naranjee, Sibiya et al. (2019), resource management includes effective use and care of facilities, equipment, medical consumables, and infrastructure. This finding is inconsistent with the work of Booyens, Jooste, and Sibiya (2016) which observed that the nurse managers effectively ensured that nurses learn the use and care of equipment if they are not familiar with the equipment. If nurses are not taught how to use the equipment, it may result in bad practices, inefficiency, and damages (Naranjee, Sibiya et al., 2019). Therefore, as unit-level heads, nurse managers are accountable and responsible for the management of financial and physical resources.

The study found that managerial characteristics such as age, gender, qualification, experience as a nurse manager, and training in management together accounted for 12% variance observed in the financial management skills of nurse managers. However, only training in management was a significant predictor of the model. Nurse managers with training in management exhibited a substantial level of knowledge and ability in financial skills because management training exposes the individual to effective managerial skills especially, financial management. Training expose them to the principles of financial management which allow nurse managers to pay significant attention to financial instrument at the unit level which previously they would have easily ignored as a result of ignorance. Therefore, hospitals need to help nurse managers to constantly develop and maintain financial management skills and to scan their work environment to enable them to identify and train nurses with managerial potentials before assumption of management positions. This view was well articulated by Chase (2010) in her landmark study on nurse managers' competencies in the US.

6. Conclusion

The study was centered on the financial management skills of nurse managers in the Eastern Region of Ghana. The findings showed that nurse managers exhibited a moderate level of financial management skills. Managerial characteristics such as age, gender, qualification, experience as nurse manager, and training in management jointly accounted for a significant proportion of nurse managers' financial management skills. But only training in management was a statistically significant predictor of the model. The study highlighted the critical role nurse managers play in financial management in hospitals. It was also evidenced in the literature that nurse managers especially, in low-income countries has limited knowledge and skills in financial management and that training in management is required. Nurse managers must have adequate knowledge and skills in financial management concept.

7. Strength and limitations

To the best of the authors' knowledge, this is the first study in Ghana to have to investigate the financial management skills of nurse managers. Therefore, the study findings are an important addition to knowledge, especially, in the Ghanaian context. However, the findings should be interpreted with caution owing to the study limitations. The study was conducted only in the Eastern Region of Ghana and the findings may not apply in the other regions of Ghana. Even though the selection of hospitals for the study is characteristic of hospitals across the length and breadth of Ghana.

8. Implications and recommendations

The importance of financial management skills for nurse managers has not received the needed research and funding notwithstanding the pivotal role nurse managers play in the financial stability of hospitals. Nurse managers must become competent in financial management which is not part of the nursing curriculum. To address this challenge and help nurse managers, well-structured formal financial management education, training, and continuous development programs are required. It is important to run all nursing units as cost centers. This will enable nurse managers to have control and authority over their units' budgets and expenditures. This will enhance their responsibility and accountability in the financial management of their units. The authors recommend a review of the current promotion guidelines for nurse managers which is typically based on long service and clinical proficiency with little or no consideration to financial management skills. Also, there is a need for experiential and mentorship programs geared towards meeting the financial management skills of nurses before the assumption of managerial positions. The authors further recommend a multidisciplinary approach in teaching nurse managers finances. It is also critical to review diploma, post-basic, and postgraduate curricula to reflect the current managerial competencies expected of nurse managers.

Funding

No funding was received either from individuals, not-for-profit organizations or commercial entities.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

The authors wish to sincerely thank the management hospitals and all the nurse managers who participated in the study.

References

- Anderson, D. M., Cronk, R., Best, L., Radin, M., Schram, H., Tracy, J. W., & Bartram, J. (2020). Budgeting for environmental health services in healthcare facilities: A ten-step model for planning and costing. *International Journal of Environmental Research and Public Health*, 17. <https://doi.org/10.3390/ijerph17062075>.
- Asamani, J. A., Chebere, M. M., Barton, P. M., D'almeida, S. A., Odam, E. A., & Oppong, R. (2018). Forecast of healthcare facilities and health workforce requirements for the public sector in Ghana, 2016–2026. *International Journal of Health Policy and Management*, 7(11), 1040–1052. doi:10.15171/ijhpm.2018.64.
- Asamani, J. A., Naab, F., & Ofei, A. M. A. (2016). Leadership styles in nursing management: Implications for staff outcomes. *Journal of Health Sciences*, 6(1), 23–36. <https://doi.org/10.17532/jhsci.2016.266>.
- Asamani, J. A., Naab, F., Ofei, A. M. A., & Addo, R. (2016). Do leadership styles influence productivity? *British Journal of Health Care Management*, 22(2), 83–91. <https://doi.org/10.12968/bjhc.2016.22.2.83>.
- Ataguba, J. E., & McIntyre, D. (2012). Paying for and receiving benefits from health services in South Africa: Is the health system equitable? *Health Policy and Planning*, 27(SUPPL.1), 35–45. <https://doi.org/10.1093/heapol/czs005>.
- Azaare, J., & Gross, J. (2011). The nature of leadership style in nursing management. *British Journal of Nursing*, 20(11), 673–680.
- Bai, Y., Gu, C., Chen, Q., Xiao, J., Liu, D., & Tang, S. (2017). The challenges that head nurses confront on financial management today: A qualitative study. *International Journal of Nursing Sciences*, 4(2), 122–127. <https://doi.org/10.1016/j.ijnss.2017.03.007>.
- Baxter, C., & Warshawsky, N. (2014). Exploring the acquisition of nurse manager competence. *Nurse Leader*, 12(1), 46–59. <https://doi.org/10.1016/j.mnl.2013.10.008>.
- Booyens, S., Jooste, K., & Sibiyi, N. (2016). *Introduction to health services management for the unit managers* (4th ed.). Juta and Company.
- Chase, L. K. (2010). *Nurse manager competencies*. University of Iowa.
- Ghana Health Service. (2017). *The health sector in Ghana facts and figures*. Ghana Health Service.
- Ghana Statistical Service. (2020). Ghana's Population By Region, 2019.
- Karathanasi, K., Prezerakos, P., Maria, M., Siskou, O., & Kaitelidou, D. (2014). Operating room nurse manager competencies in Greek hospitals. *Clinical Nursing Studies*, 2(2). <https://doi.org/10.5430/cns.v2n2p16>.
- Lim, J. Y., & Noh, W. (2015). Key components of financial-analysis education for clinical nurses: Components of financial-analysis education. *Nurs Health Sci*, 17(3), 293–298. <https://doi.org/10.1111/nhs.12186>.
- Mcfarlan, S. J. (2015). Evaluation of an educational intervention to improve nurse managers' understanding of and self-assessed competence with personnel budgeting. Ministry of Health. (2014). National Community Health Planning and Services (CHPS) Policy.
- Moran, D., Wu, A. W., Connors, C., Chappidi, M. R., Sreedhara, S. K., Selter, J. H., & Padula, W. V. (2020). Cost-benefit analysis of a support program for nursing staff. *Journal of Patient Safety*, 16(4), e250–e254. <https://doi.org/10.1097/PTS.0000000000000376>.
- Naranjee, N., Ngxongo, T. S. P., & Sibiyi, M. N. (2019). Financial management roles of nurse managers in selected public hospitals in KwaZulu-Natal province, South Africa. *African Journal of Primary Health Care & Family Medicine*, 11(1), 1–8. <https://doi.org/10.4102/phcfm.v11i1.1981>.
- Naranjee, N., Sibiyi, M. N., & Ngxongo, T. S. P. (2019). Development of a financial management competency framework for Nurse Managers in public health care organisations in the province of KwaZulu-Natal, South Africa. *International Journal of Africa Nursing Sciences*, 11, 100154. <https://doi.org/10.1016/j.ijans.2019.100154>.
- Natan, M. B., & Noy, R. H. (2016). Required competencies for nurse managers in geriatric care: The viewpoint of staff nurses. *International Journal of Caring Sciences*, 9(3), 985.
- Noh, W., & Lim, J. Y. (2019). Nursing productivity of tertiary general hospitals using financial statements. *Journal of Korean Academy of Nursing Administration*, 25(1), 35–41. <https://doi.org/10.1111/jkana.2019.25.1.35>.
- Ofei, A. M. A. (2015). *Management practices of nurse managers in the Greater Accra Region*. Ghana: University of Ghana.
- Ofei, A. M. A., Paarima, Y., & Barnes, T. (2020). Exploring the management competencies of nurse managers in the Greater Accra Region, Ghana. *International Journal of Africa Nursing Sciences*, 13, Article 100248. <https://doi.org/10.1016/j.ijans.2020.100248>.
- Ofei, A. M. A., Sakyi, E. K., Buabeng, T., Mwini-nyaedzigbor, P., & Asiedua, E. (2014). Nurses' perception of planning practices of nurse managers in the Greater Accra region, Ghana. *Wudpecker Journal of Medical Sciences*, 3, 33–45.
- Paarima, Y., Ofei, A. M. A., & Kwashie, A. A. (2020). Managerial Competencies of Nurse Managers in Ghana. *Africa Journal of Nursing and Midwifery*, 22(2), 20. <https://doi.org/10.25159/2520-5293/6969>.
- Penner, S. J. (2015). Why hospitals must educate nurses about healthcare costs | FierceHealthcare. <https://www.fiercehealthcare.com/hospitals/why-hospitals-must-educate-nurses-about-healthcare-costs>.
- Polit, D. F., & Beck, C. T. (2014). *Essentials of nursing research: Appraising evidence for nursing practice* (7th ed.).
- Rashidian, A., Alinia, C., & Majdzadeh, R. (2015). Cost-effectiveness analysis of health care waste treatment facilities in Iran hospitals; a provider perspective. *Iranian Journal of Public Health*, 44(3), 352–360.
- Rundio, A. (2016). *Nurse managers guide to budgeting and finance* (2nd ed.). Sigma Theta Tau International.
- Than, T. M., Saw, Y. M., Khaing, M., Win, E. M., Cho, S. M., & Kariya, T. (2017). Unit cost of healthcare services at 200-bed public hospitals in Myanmar: What plays an important role of hospital budgeting? *BMC Health Services Research*, 17(669), 1–12. <https://doi.org/10.1186/s12913-017-2619-z>.
- Thew, J. (2015). Nurses can't afford to ignore healthcare costs. *Health Leaders*.
- Walsh, K. (2016). Managing a budget in healthcare professional education. *Annals of Medicine and Health Sciences Research*, 6(2), 71–73. <https://doi.org/10.4103/2141-9248.181841>.
- Waxman, K. T., & Massarweh, L. J. (2018). Talking the talk: Financial skills for nurse leaders. *Nurse Leader*, 16(2), 101–106. <https://doi.org/10.1016/j.mnl.2017.12.008>.