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ORIGINAL RESEARCH

First-line Nurse Managerial Competence and Its Influencing Factors in Public Jordanian Hospitals

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Abstract

Background: First-line Nurse Managers (FLNMs) occupy pivotal positions within healthcare systems and are responsible for various administrative and caregiving functions. While FLNMs are integral to efficient healthcare services, their competencies and the factors influencing them still need to be explored in Jordan. In light of the need for more research on FLNM competencies in Jordan, this study is paramount for advancing healthcare in the country.
Purpose: This study aimed to analyze FLNM competence and its influencing factors within the unique context of Jordan's healthcare system.
Methods: As a cross-sectional study, this research leveraged online platforms to distribute questionnaires to 130 FLNMs across three public hospitals in Jordan's central region using a random sampling method. Univariate analysis comprised numerical data (Mean, median, mode, SD) and categorical data (percentage and proportion). Pearson, independent t-test, and multiple linear regression were used to analyze the data.
Results: Based on responses from 130 FLNMs, the study's results demonstrate their average age to be approximately 37.8 years, with a significant proportion holding master's degrees, indicating a highly educated cohort. Notably, many FLNMs are charge nurses, reflecting their extensive experience and commitment to enhancing their leadership competencies. The study found no significant correlation between age and FLNM competencies, suggesting that competence is not solely contingent upon years of experience or age (p>0.05). The research revealed that the highest to the lowest significance in FLNM performance were leadership training (b=21.15, 95% CI=7.70-34.60, p=0.002), gender-based disparities (b=16.50, 95% CI=4.41-28.58, p=0.008) and social status (b=7.86, 95% CI=1.13-14.60, p=0.02), respectively.
Conclusion: FLNMs exhibit high competence, influenced by leadership training, gender disparities, and social status. The research highlights the need for tailored training and support programs to improve the competencies of FLNMs in Jordan's healthcare system, highlighting gender-based differences and the need for personalized healthcare management strategies to improve healthcare quality.

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1. Introduction

First-line nurse managers (FLNM) is a term that refers to broad positions in health care systems, such as head nurse, charge nurse, in-charge nurse, senior nurse, and counter nurse (Gunawan & Aungsuroch, 2017). First-line nurse managers play a crucial role in operating the nursing services by adopting staff management (Lee & Cummings, 2008), estimating the unit budget, and dealing with challenges and conflicts (Richey & Waite, 2019). However, the ability of the FLNM to deal with different issues at a synchronized time required further revisions.

One area that requires further revision is the FLNM's ability to effectively manage staff. Staff management involves tasks such as scheduling, assigning duties, and ensuring adequate staffing levels (Klaes, 2018; Solbakken et al., 2020). It also includes supporting and developing the nursing staff through mentoring, training, and performance evaluations. The FLNM must be able

to effectively communicate with and motivate the staff, address any performance issues or conflicts that arise, and create a positive and cohesive work environment (Gunawan et al., 2023; Smama'h et al., 2023). Additionally, the FLNM must have the skills to estimate the unit budget accurately. This involves analyzing the unit's needs, forecasting expenses, and making budgetary decisions that align with the goals and objectives of the organization (Aydas et al., 2022; Choi et al., 2022). The FLNM should also have strong problem-solving skills to identify cost-saving opportunities and optimize resource allocation (Saporito et al., 2023; Xu et al., 2023). It is crucial for the FLNM to collaborate with other department heads and stakeholders to ensure that the unit's budget aligns with the overall financial goals of the organization (Solbakken et al., 2018; Vasset et al., 2023). By effectively managing the unit budget, the FLNM can ensure that the necessary resources are available to provide high-quality patient care and maintain a well-functioning nursing unit.

Within a dynamically reformed healthcare system such as that which exists in Jordan, there is a need to describe the competencies required of FLNMs. First-line nurse managers are tasked with balancing their resources to meet administrative requirements (policies, procedures) and their staff's needs to provide appropriate patient care (Saaweh, 2018; Shuman et al., 2020). There is still a need to determine whether or not FLNMs in Jordan are capable of handling all of these responsibilities. That makes it more difficult to improve their credentials so they can deal with these challenges or figure out which training programs are necessary (Isobe et al., 2020).

A previous systematic review found that educational level, gender, age, managerial experience, training, and role influence FLNM competence (Gunawan et al., 2018). Some studies proved that educational level, age, training, and role significantly impact managerial competence. However, two studies revealed that gender does not influence managerial competence (Gunawan et al., 2021; Liou et al., 2022). Thus, it is important to investigate those factors in the context of Jordanian FLNM. Despite this, no study is currently investigating the FLNM competencies in Jordan. As a result, this particular study aimed to evaluate the FLNM competence and its influencing factors in the hospitals located within the Hashemite Kingdom of Jordan. Evaluation of the FLNM competencies will significantly impact Jordan's efforts to develop its health care system further.

2. Methods

2.1. Research design

This cross-sectional study evaluated FLNM competence and its factors using a one-time measurement. The FLNM measurement tool was administered online, and samples of FLNMs were collected from public hospitals in Jordan.

2.2. Setting and samples

The total number of hospitals in the middle area of Jordan is seven, and the number of FLNM is estimated to be around 550 nurses (Ministry of Health, 2019). The middle area of Jordan was chosen because it covers several important areas and the capital of Jordan. According to these premises and by utilizing the G*power software (Kang et al., 2015) on the test family exactly with a power of 95% and effect size of 0.3, the estimated sample size was 115. The online formats were sent to 200 FLNMs, and 130 responses were collected. Inclusion criteria were FNLM, which included senior counter and head nurses with at least one year of experience in their position and an understanding of English. FLNMs were excluded if they were not facing the patient directly.

2.3. Measurement and data collection

The current study adopted the FLNM questionnaire developed and tested on Indonesian nurses (Gunawan et al., 2019). The scale consists of 43 items categorized into seven dimensions: applying quality care improvement, self-management, leadership, facilitating spiritual nursing care, utilizing informatics, staffing and professional development, and financial management. A 5-point rating scale was used (5-Always, 4-Quite often, 3-Sometimes, 2-Once in a while, and 1-None of the time). Based on similarities in the public health care systems in both Jordan and Indonesia, the authors agreed to adopt the same instrument in the English language. The tool is available in Bahasa Indonesian and English, as the English language is the professional language for communication among nurses in Jordan (Khalaf, 2013) and all nurses have to show a minimal level of competencies in reading, writing, and understanding the English language. The study

adopted the original English format with the help offered on the online survey in case any explanation is required from the author. The reliability of the tools employed in this study yielded an alpha coefficient of 0.91, and the I-CVI values for each item ranged from 0.81 to 1, while the S-CVI/Ave was 0.976 and the S-CVI/UA was 0.859 (Gunawan et al., 2019), deemed acceptable within the realm of nursing research.

The instrument creator approved its utilization in the current study. Subsequently, a questionnaire was meticulously organized by integrating demographic questions with the FLNM competency instrument hosted on Microsoft Forms for data collection. Sample selection involved a random process, wherein random numbers ranging from 01 to 20 were drawn and matched with the corresponding positions of FLNM within the administrative records of each hospital's director of nursing. Subsequently, the questionnaire access link was exclusively distributed to the selected staff members, who received it via their official e-mail addresses. The data collection phase commenced on 12 March 2023 and concluded on 22 June 2023.

2.4. Data analysis

The data were analyzed by using univariate and bivariate analysis. Univariate analysis comprised numerical data (Mean, median, mode, SD) and categorical data (percentage and proportion). Pearson correlation was used to measure the age, experience as FLNM, and FLNM competency score. The differences among variables were tested to support the impact factors. The data had a normal distribution, as shown by the skewness and kurtosis values being lower than 3 (Mishra et al., 2019). In addition, the homogeneity showed that the variance was equal (p>0.05) (Otsu & Taniguchi, 2020). An Independent t-test was conducted to check the different gender and leadership training to FLNM competency. Analysis of variance to explore FLNM competency score among hospitals, positions, and social status, was conducted. Multiple linear regression was also done to investigate the impact of those factors.

2.5. Ethical considerations

Ethical clearance was approved by the Notational Ethics Committee of the Institutional Review Board (IRB) in the Ministry of Health under approval number (MBA/ERC/21739). The ethical principles were applied during the study by providing complete information about the study, including the benefits and the risks of the study, voluntary participation, freedom to withdraw during data collection, confidentiality of information, and maintaining justice. The informed consent presented information about the research team, the purpose of the study, and the expected benefits. The informed consent was presented in the English language.

3. Results

A total of 130 FLNMs actively participated in this survey, representing a commendable response rate of 65% out of the 200 FLNMs initially contacted via e-mail. A noteworthy observation is that most respondents, constituting 78%, hailed from remote hospitals, while 30% originated from the Amman region, and the remaining respondents were affiliated with Z hospital.

3.1. Social demographical characteristics of the participants

The respondents' average age was 37.8 years, with a standard deviation of 5.47. Additionally, the survey revealed that 74.15% of the participants held master's degrees, and 60% were employed in peripheral hospitals. A significant portion, accounting for 64.60%, reported working in medical-surgical inpatient units. Furthermore, the marital status of the respondents indicated that 76.15% were married, with an average of 4.06 dependents relying on their support, including children and parents.

Regarding their professional roles, the study unveiled that a substantial cohort of 84 individuals served as charge nurses (senior of counter). These experienced nursing professionals displayed an average of 11 years of experience in the nursing field, with a mean tenure of 7.05 years in their current positions. Notably, most respondents reported having undergone leadership training, as elaborated in Table 1, highlighting their unwavering commitment to augmenting their leadership competencies in the realm of nursing.

Table 1. Social demographical characteristics and FLNM competency score of the participants (n=130)

Sample Characteristics	f	%	M	SD
Age			37.8	5.47
Gender				
Male	58	44.6		
Female	72	53.4		
Educational Level				
PhD	2	1.5		
Master	97	74.6		
BSN	15	11.5		
Diploma	18	13.8		
Hospital				
X	15	11.5		
Y	99	76.2		
Z	16	12.3		
Unit scope of service:				
Medical-Surgical	78	60 %		
Intensive care	84	64.60%		
Outpatient	24	18.46		
Emergency	22	16.92		
Social Status				
Single	18	13.84		
Married	99	76.15		
Divorced	9	6.92		
Widowed	4	3.07		
Number of dependents			4.06	2.67
Position				
Charge nurse (Senior counter)	84	64.6		
Head nurse	24	18.46		
Nurse manager	22	16.92		
Experience in nursing before the current position (Years):			11	7.32
Experience in the current position (Years)			7.05	7.32
Leadership training in the last two years				
Yes	94	73.3		
No	36	27.7		
FLNM competence score			138.4	37.26

Notes: f=Frequency, %=Percentage, M=Mean, SD=Standard Deviation

As shown in Table 1, the overall FLNM competency score based on the questionnaire was found to have a mean score of 138.4 and a standard deviation of 37.26.

3.2. Correlation between age, experience as FLNM, and FLNM competency score

Further analysis, as delineated in Table 2, revealed no significant correlations between age (r=-0.08, p=0.36), the number of dependents (r=-0.1, p=0.25), prior experience (r=0.04, p=0.59), or current administrative position experience (r=0.04, p=0.64). However, a noteworthy gender disparity emerged in the FLNM competency scores.

Table 2. Correlation between age, experience as FLNM, and FLNM competency score

Variables	FLNM competency score	p
Age	-0.80	0.36
Number of dependents	-0.10	0.25
Experience before being FRLNM	0.04	0.59
Current experience as FLNM	0.04	0.64

Note: *Significance of correlations (p<0.05)

3.3. Differences in gender and leadership training variables related to FLNM's competence

Table 3 illustrates this discrepancy, with female FLNMs achieving significantly higher scores on average (M=146) in comparison to their male counterparts (M=127) (t(128)=2.96, *p*=0.002). Similarly, a significant difference was observed among those managers who had undertaken administrative leadership training in the last two years (t(128)=3.41, *p*=.001).

Table 3. Differences in gender and leadership training related to FLNM competency

Variables	FLNM Competency				
	M	SD	t	p	df
Gender					
Male	127.96	32.72	2.96	.002*	128
Female	146.68	38.75			
Leadership training					
Yes	145.07	38.89	3.41	.001*	128
No	121.08	25.89			

Note: *Significance *p*<0.01, t-test analysis

Employing an ANOVA test, the research findings underscored substantial differences concerning social status (F=7.06, *p*<0.01). Conversely, no significant variances were observed concerning professional positions and hospital affiliation, as displayed in Table 4.

Table 4. Analysis of variance regarding FLNM competency score among hospitals, positions, and social status

Variables	FLNM Competencey Score				
	Sum of Sq	Df	Mean Sq	F	Sig
Hospital					
Between groups	970.56	2	485.28	.35	.70
Within groups	178205	127	1403		
Position					
Between groups	18843.46	10	1884.43	1.39	.19
Within groups	160332.40	119	1347.33		
Social status					
Between groups	17892.93	2	8946.46	7.06	.001**
Within groups	161282.94	127	1269.94		

Note: *Significance *p*<0.01, ANOVA

3.4. Factors influencing FLNM competency score

The analysis further revealed that 16% of the FLNM competency score was influenced by leadership training (b=21.15, 95%CI=7.70-34.60, *p*=0.002), gender-based disparities (b=16.50, 95%CI=4.41-28.58, *p*=0.008) and social status (b=7.86, 95%CI=1.13-14.60, *p*=0.02) (Adjusted R^2=0.16) (Table 5).

Table 5. Analysis results of factors influencing FLNM competency score

Variable	Beta	SE	95% CI		B	p
			LL	UL		
Gender	16.50	6.108	4.41	28.58	.22	.008*
Social status	7.86	4.40	1.13	14.60	.19	.02*
Leadership training	21.15	6.80	7.70	34.60	.25	.002*
R^2	0.18					
Adjusted R^2	0.16					

Note: *Indicates significance *p*<0.05

4. Discussion

By throwing light on FLNM competencies and factors within the context of Jordan's healthcare system, this study aims to fill a large knowledge vacuum that has been identified. Based

on the results of the questionnaire, it was discovered that the overall FLNM competencies score had a mean score of 138.4, with a standard deviation of 37.26. The previous study found lower scores in Egypt Hospital (124.16±41.07) (Ahmed & Abd-ElGhani, 2021). There is no substantial association between FLNM competency and factors such as age, the number of dependents, or experiences. A substantial disparity was noted in terms of gender and the number of individuals who had participated in administrative leadership training during the past two years. In the meantime, no discernible differences were found regarding professional roles or hospital affiliation. In addition, the FLNM competency score was affected by a model that took into account gender, socio-economic position, and participation in a leadership training course.

FLNMs constitute a pivotal force within healthcare systems worldwide, serving as the linchpin that drives the intricacies of the healthcare machinery (Kagan et al., 2021). In this context, our current study delves into the competencies of FLNMs within the unique framework of Jordan's healthcare system. In this landscape, these professionals are tasked with navigating an intricate web of administrative demands, patient care obligations, the prevailing nursing shortage, and resource constraints (Choi et al., 2022). Given the paucity of research into FLNM competencies in the Jordanian context, this study stands as a significant contribution to our understanding of this crucial role and its potential implications for healthcare enhancement as the first study to adopt the current measurement tool in Jordan and the first adoption for the current tool among Arabic health care system.

Within the sample of FLNMs under investigation, it is notable that a relatively youthful demographic emerged when compared to their counterparts in other regions, such as Indonesia and Canada, where FLNMs tend to skew older (Brousseau et al., 2019; Gunawan et al., 2018). There are several antecedent factors for getting the younger generation into managerial positions in Jordan compared to other nations as the younger populations the nursing immigration to the Gulf (AbuAlRub et al., 2013) or Western countries, which puts the liner managerial in Jordan in changing conditions. This shows the need for additional monitoring of the actual status of the nursing managerial competencies in the first line.

Furthermore, a substantial proportion of these FLNMs possessed master's degrees, signifying a high level of educational attainment within this cohort. However, it is imperative to recognize that multiple factors converge to facilitate an individual's transition into the FLNM role (Gonzalez-Garcia et al., 2021). These encompass personal readiness, hospital policies, and the creation of conducive working conditions. Given the financial and social incentives associated with FLNM positions, nurses may be more motivated to invest considerable effort in striving for these roles. Also, the competencies at FLNM enhance the nursing chance for working abroad and additional chances for economic advancements (Hussam & Alnjadat, 2022).

A noteworthy revelation in this study pertains to the unwavering commitment of FLNMs toward augmenting their leadership proficiencies, as substantiated by their enthusiastic participation in leadership training initiatives. This commitment aligns seamlessly with the evolving expectations placed upon FLNMs as they endeavor to harmonize their managerial obligations with the imperative of delivering exceptional patient care (Mudd et al., 2023). The impact of leadership training and related efforts appears to wield substantial influence over FLNM competencies, with gender and social status falling beyond the purview of these factors. Also, there are additional cultural factors in Jordan as part of Arabic traditional culture, which values leadership power and the need to control others to be a committed leader (Smama'h et al., 2023). However, caution must be exercised in ascribing causality to these associations between training and competencies. It would be imprudent to hastily infer that the reported commitment to leadership training unilaterally translates into enhanced competencies, as various agencies administer training programs for diverse purposes (Pursio et al., 2023). Additionally, the lack of standardized nursing training programs tailored specifically to FLNM competencies further complicates any causal assertions, as indicated in a personal communication with the general secretary of the Jordan Nursing Council. Nonetheless, the observed variations in competency levels serve as a valuable foundation for future investigations and interventions to advance the professional development of FLNMs.

Surprisingly, our study did not identify a significant correlation between age and FLNM competencies, implying that competence is unrelated to years of experience or age. Conversely, our study unveiled substantial gender-based disparities in FLNM performance. Female FLNMs exhibited notably higher competency scores than their male counterparts, suggesting the need for

in-depth exploration into the factors contributing to this gender disparity. Importantly, this gender-based impact on competencies needed to be evident in previous studies (Penconek et al., 2021). The current results may be influenced by cultural aspects within the Jordanian context, the unique nature of the healthcare system, or evolving societal norms concerning the roles of females in nursing—an area ripe for further exploration, particularly as the role of women in the nursing context continues to evolve across generations. These salient findings illuminate the intricate and multifaceted nature of FLNM positions, which are subject to numerous influencing factors within the healthcare system. These results unmistakably underscore the critical influence of socioeconomic determinants on FLNM skills, inspiring a comprehensive investigation into the intricate web of variables that underlie these connections (Ulrich et al., 2019). It is essential to emphasize that these results deviate from the trends observed in previous research (Herttuala et al., 2023), underscoring the distinctiveness and novelty of this study's contribution to the field. The Jordanian context's unique characteristics, nurses' perceptions of the FLNM role, and the implications for the broader healthcare landscape warrant further exploration.

5. Implication and limitations

This research fills a significant information vacuum by shedding light on First-line Nurse Managers' (FLNMs) competencies in Jordan's complex healthcare system. The findings strongly underscore the need for targeted training and support programs to improve FLNM capabilities and Jordan's healthcare quality. Our study revealed gender-based differences that require more research to achieve gender equality in nursing leadership and professional progress. Furthermore, our study's findings can inform Jordan's healthcare policy and best practices, not just academically. These findings benefit healthcare workers and patients because better healthcare management improves patient care and system efficacy. Only through concentrated study and legislative action can we optimize FLNMs' contributions to healthcare.

Despite this study's value, its limitations must be acknowledged. First, cross-sectional research limits the demonstration of causal relationships. This methodology, although efficient, may be subject to limitations such as potential social desirability bias and the absence of follow-up assessments. FLNM competencies and correlations have been measured; however, we cannot prove causation. Self-reported data may add social desirability bias because participants may have felt driven to portray themselves as knowledgeable, good, or professional leaders. Online data collection is successful, but it may limit the amount of information. We could not follow up or review responses in person. These constraints emphasize the need for caution when evaluating results and suggest that future research should examine FLNM abilities in Jordan in greater detail, employ more trustworthy study designs, and account for potential biases since Jordan has no FLNM framework.

6. Conclusion

This study addresses a significant knowledge gap by providing preliminary insights into FLNM competencies within Jordan's healthcare system. The findings revealed that FLNMs show a high level of competence, which is affected by leadership training, gender-based disparities, and social status. This study underscores the need for tailored training and support programs to enhance FLNM capabilities, ultimately improving healthcare quality in Jordan. The gender-based differences observed warrant further investigation to promote gender equality in nursing leadership roles. Additionally, the significant variations among FLNMs based on social status, professional positions, training attendance, and hospital affiliations emphasize the need for personalized healthcare management and leadership development strategies. These insights can inform policy formulation and guide best practices within Jordan's healthcare sector, benefiting both healthcare professionals and their patients. Other factors, such as roles, leadership type, and leadership skills, could be explored for further studies. In addition, a bigger sample size across Jordan could generalize the results.

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Author contribution

ASI: conceptualization (lead), methodology (lead), writing-original draft (lead), data collection (lead) review (lead) and editing (lead); SM: conceptualization (supporting), data collection (lead), data analysis(lead), and writing-developed draft (supporting); YA: review (lead), discussion (equal) and writing-developed draft (supporting); JG: review (equal), discussion (equal) and writing-developed draft (supporting); IGJ: review (equal), discussion (equal), writing-developed draft (supporting) and editing (lead).

Conflict of interest

We declare that there is no conflict of interest.

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