Research

Validation of a Questionnaire on the Competencies of Middle Nurse Managers in the Financial Field: A Preliminary Investigation

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Abstract

Introduction. The role of Middle Nurse Managers has become increasingly complex, encompassing responsibilities that range from personnel recruitment to financial and strategic management. Recently, their tasks have become more focused on administrative activities, reducing direct clinical involvement. This evolution can lead to stress and dissatisfaction, requiring a more empathetic and relational management approach to improve work quality. To conduct a preliminary linguistic validation and evaluate the reliability of the Italian version of the *"360 Degree Evaluation of the Job-Related Skill Perception of Primary Health Care Nursing Managers"* questionnaire.

Methods. A translation and cultural adaptation study of the cited questionnaire into Italian was conducted. The goal of the linguistic validation was to produce a translated version that maintained the integrity of the original questionnaire.

Results. This preliminary study evaluates the validity of the *"360 Degree Evaluation of the Job-Related Skill Perception of Primary health care Nursing Managers"* scale among Middle Nurse Managers in Italian hospitals. The scale, consisting of 40 items, assesses skills in communication, leadership, personnel management, financial management, planning and priority setting, and problem-solving. Findings indicate that nurse managers perceive high competencies in communication, leadership, and personnel management, while highlighting gaps in financial

management and the implementation of complex plans.
Discussion. The study highlights the need for specific, targeted training in financial management to address these gaps. Such training is essential to enhance the competencies of nursing middle managers and support the success of healthcare organizations. Further psychometric validation studies are needed to confirm these preliminary findings.

Keyword: Competencies, Financial Skills, Middle Management, Nurse Managers.

Introduction

Nursing Middle Management is a complex and structured system involving various levels of responsibility1. It is primarily based on leadership and organizational competencies, which are essential to ensure high-quality nursing care and support the strategic objectives of healthcare organizations, 2.

Specifically, Middle Managers focus on the operational management of units or departments, taking on more specific managerial roles, and are responsible for directly coordinating nursing care3. The expectation is that they also play the role of experts in financial management, negotiation, recruitment, staff development, conflict resolution, and staying updated on technological advancements4. This level has become particularly important in recent years, especially in response to the changes imposed by the COVID-19 pandemic. Healthcare facilities, following the crisis, have had to adapt to new needs, transferring many operational responsibilities to this figure, making them essential for facilitating organizational changes, improving efficiency, and ensuring a positive work environment5.

Middle managers are responsible for a specific segment of the organization, as they manage and promote changes within a defined and specific unit or department. Moreover, they play a key role in the management evolution process as facilitators and promoters, focusing their work on improving organizational performance6.

The growing concerns related to sustainability, productivity expectations, and economic pressure drive Middle Managers to take on daily responsibility for undertaking various actions that can have a different impact on cost-effectiveness within their work environment7.

Among the many competencies required, financial management stands out as a critical but often underdeveloped area. While financial planning is typically carried out in collaboration with the finance department, the increasing complexity of healthcare systems demands that Nurse Managers possess a solid understanding of budgeting processes, resource allocation, and cost control8,9,10.

Theories on the Competencies of the Middle Nurse Manager emphasize the importance of developing specific skills to ensure effective leadership and optimal resource management. These competencies include technical skills and interdisciplinary knowledge such as communication, leadership, problem-solving, time management, and decision-making abilities. According to some studies, the development of advanced skills is crucial to achieving organizational goals and addressing the challenges of the modern healthcare context11.

Some theoretical models, such as the "Competency Model for the Middle Nurse Manager" (MCGE - Logistical Level)12, group the 51 competencies required for middle nurse managers into six dimensions: - management; - communication and technology; - leadership and teamwork; - knowledge of the healthcare system; - nursing knowledge; - personal characteristics, similar to what has been identified by the American Organization of Nurse Executives (AONE). In addition, other theories include aspects such as the ability to lead innovation and manage change. These models provide a conceptual framework for defining the profile of the nurse manager, emphasizing the need for continuous competency evolution to meet the changing demands of the healthcare sector13,12

Despite the international development of such frameworks, the Italian literature lacks a validated, culturally adapted tool to assess

the competencies of Middle Nurse Managers. This gap limits both research and practice, as it hinders the evaluation, development, and standardization of managerial skills in Italy's healthcare system. This study aims to conduct a preliminary linguistic and cultural validation of the Italian version of the original instrument, accompanied by a descriptive analysis and assessment of internal reliability, in view of future factorial and construct validity analyses. The questionnaire "360-degree evaluation of the job-related skill perception of PHC nursing managers" is taken from the article "An evaluation of the competencies of primary health care clinic nursing managers in two South African provinces" written by Pascalia O. Munyewende, Jonathan Levin, and Laetitia C. Rispel14.

Methods

Study design

A study of translation and cultural adaptation into Italian was conducted for the previously mentioned questionnaire. This study represents a preliminary linguistic and cultural validation aimed at producing a version translated into a language different from the original. Additionally, the study includes a descriptive analysis and an assessment of internal reliability, laying the groundwork for future factorial and construct validity analyses.2.2 Translation procedure

In the beginning, authorization was requested and granted via email from the authors of the article to proceed with the validation of the questionnaire they had designed.

The validation consists of three phases, through a collaborative and iterative process following the method recommended by Beaton et al. (2000) guidelines15:

- Forward translation: a complete translation of the questionnaire into Italian was produced by two independent translators (T1 and T2), both native Italian speakers, who were unfamiliar with the project and had no prior knowledge of the subject matter. After a comparison of the two translations, both parties agreed upon a final version.
- Back-translation: two other translators (T3 and T4) then back-translated the version from the previous phase into the original language, without having access to the initial version. The resulting translation was then compared with the original, and any discrepancies were corrected.
- Pilot test: in the final phase, the comprehensibility and acceptability of the questionnaire were tested in the field to determine whether the language used was appropriate for the intended audience. The interviewer asked participants whether they encountered any difficulties in understanding or interpreting each item. Alternative solutions were accepted in order to obtain expressions that were clear and universal.

Scale evaluation and validate procedure

Study setting and participants

The participants in this project were recruited on a voluntary basis, anonymity was ensured, and each participant was guaranteed the right to privacy.

The MNM eligible to participate in this project must meet the following inclusion criteria:

- completion of a bachelor's degree in nursing and/or Obstetrics;
- employment at a public or private hospital located in Italy;
- completion of a Master's degree in Management for coordination functions;
- holding a coordination role in a ward and/or department for a period of twelve months or more.

Participants with the following characteristics are excluded:

- holding a temporary coordination role;
- returning to service after a long period of absence (at least one year);
- refusal to participate in the study;
- poor comprehension of spoken and written Italian.

Measurements

The general data questionnaire

Several demographic and professional variables were collected to comprehensively describe the sample. This included age, sex, work experience, work setting, manager tenure, the region of Italy where participants work, and the number of staff managed.

The Italian version of the Questionnaire

After an accurate translation and content validation in Italian, the original version of the

questionnaire was retained, with modifications and adjustments made to certain items to ensure that participants could correctly understand the statements and provide reliable responses.

For each item, the participant indicated their skill level by assigning a score from 1 to 10, where 1 indicates “low competence” and suggests that additional training is needed to achieve the described competence, while 10 indicates “high competence”, meaning no further training is deemed necessary. Selecting "I don't know" was also possible to indicate no perception.

In developing the original instrument, the reported Cronbach's alpha coefficient was 0.84 for the communication section, 0.86 for the leadership and management section, 0.90 for staff management and financial management, 0.87 for planning and priority setting, and 0.93 for problem-solving.

Data collection

Data collection was carried out between November 2023 and March 2024 through the online administration of the questionnaire, created using Google Forms, utilizing various information channels:

- Email, by creating a mailing list targeted at MNM;
- Social media.

A link to access the online survey tool was provided through a message sent via these channels.

The data collection began with an introductory section that explained the study’s aim and the process for participation. The questionnaire was administered after accepting the information notice and signing the corresponding consent form. All data was collected anonymously to maintain the participants’ confidentiality and encourage honest and open responses.

The sample size for the questionnaire validation was determined in accordance with the COSMIN guidelines, which recommend basing the sample selection on the type of psychometric analysis planned, taking into account model complexity, the number of parameters estimated, and the expected properties of the instrument. Although there is no fixed rule, a sufficiently large sample is generally advised to ensure stability and reliability of the estimates. Accordingly, a total of 259 MNMs were involved, a number considered adequate to guarantee the validity and reliability of the analyses performed.

Data analysis

The original 10-point Likert scale responses were recoded into a 5-point scale to simplify the descriptive analysis and facilitate the interpretation of results (Table 1). This transformation was based on the observation that differences between adjacent levels on the original scale were often negligible and not consistently associated with distinct meanings. Moreover, the use of a 5-point scale is widely adopted in the literature to improve result readability and enhance comparability across studies (responses such as “I don't know” were left unchanged, as they represent a separate informative category).16

The mean and standard deviation were calculated for the 40 items investigated, analyzing the minimum and maximum values expressed. The arithmetic mean of the six sections in which the questionnaire is divided was computed.

The response frequency and the corresponding percentage were calculated for each item.

The reliability of the scale was assessed using Cronbach's Alpha coefficient: a measure of reliability or internal consistency of a test or psychometric scale. It is commonly used to evaluate how consistently a questionnaire or test items measure a unidimensional concept17

The internal consistency of the scale was also evaluated using McDonald’s Omega, which is considered a more accurate estimate of reliability than Cronbach’s alpha, especially for multidimensional scales.

Furthermore, intra-class correlation coefficients (ICCs)18 were calculated for both single and average measures. "Intra-class correlations" assess the similarity or variability of measurements made on units grouped into different categories or classes.

Table 1. Score transition.

Initial Score	Final Score
1 - 2	1
3 - 4	2
5 - 6	3
7 - 8	4
9 - 10	5

Results

Characteristics of the Participants

The final sample comprises 259 nurses in coordination roles who completed the questionnaire correctly.

The sample under examination is mainly composed of female managers (68.7%) with an average age of 47.5 years. Most of the sample holds a postgraduate degree or is currently pursuing one. The average number of people managed by each coordinator was 37,7, with a range from a minimum of 9 to a maximum of 150.

53.6% of the interviewees work in public administration, while the remaining 46.4% work in the private sector. The percentage of those working in the community is 76.4%, while those working within a hospital represent 23.6%. Finally, 113 Middle Nurse Managers work in the northern regions of Italy, 57 in the centre, and 89 in the southern regions (Table 2).

Table 2. Sociodemographic characteristics of the participants.

Characteristics (n=259)	
Age, mean (range)	47,5 (26-61)
Sex, n (%)	
Female	178 (68,7)
Male	81 (31,3)
Working experience as manager (years), mean (range)	8,56 (1-35)
Setting, n (%)	
Public	139 (53,6)
Private	120 (46,4)
Hospital	198 (76,4)
Territory	61 (23,6)
Region, n (%)	
North	113 (43,6)
Centre	57 (22,0)
South	89 (34,4)
Number of managed staff, mean (range)	37,7 (9-150)

Validity

Table 3 presents the results obtained from the analysis of the 40 items. The average frequency of responses ranges from a minimum value of 2.96 (item 29) to a maximum value of 3.81 (items 22 and 32). The item with the lowest mean investigates the use of statistics by MNMs to implement financial and human resources, while the items with the highest mean assess their ability to intervene promptly when equipment is out of service and to prioritize the most urgent tasks.

The standard deviation, which summarizes the deviations from the mean, is highest for item 7 (1.742), which concerns the implementation of the ten-point plan of the NDOH, and lowest for item 1 (1.271), which addresses the attentive listening by MNM to others' concerns.

Table 4 shows the arithmetic mean and standard deviation for the six sections of the questionnaire. It can be observed that the area where MNMs report having the lowest competencies is financial management (mean = 3.44, std dev = 1.446), while they report higher competencies in problem-solving (mean = 3.70). The lowest standard deviation, indicating less deviation from the average values, is observed in communication (1.304). Only the leadership and financial management categories have a difference from the mean greater than 1.4.

Table 5 analyzes the frequency and percentage of responses relative to the total, grouped into three categories: “no – low competence,” “medium competence,” and “high – very high competence.” The original 10-point Likert scale was recoded into these three levels to simplify the statistical analysis, adopting the following thresholds: scores from 1 to 3 indicating low competence, from 4 to 7 medium competence, and from 8 to 10 high competence.

This recoding approach is commonly used to reduce data complexity and improve interpretability,[16,19] although it may entail a loss of sensitivity in detecting subtle differences in respondents’ perceptions.[20] These thresholds were chosen to maintain a balance between analytical simplicity and descriptive precision, avoiding overly broad groupings that obscure relevant differences or, conversely, categories that are too fragmented and complicate interpretation.

Norman (2010), in his seminal work “Likert scales, levels of measurement and the ‘laws’

Table 3. Mean and standard deviation.

	Mean	SD
1	3,65	1,271
2	3,45	1,318
3	3,67	1,322
4	3,62	1,278
5	3,70	1,333
6	3,46	1,318
7	3,48	1,742
8	3,55	1,338
9	3,63	1,379
10	3,76	1,342
11	3,68	1,348
12	3,50	1,298
13	3,66	1,317
14	3,76	1,294
15	3,75	1,325
16	3,66	1,359
17	3,51	1,426
18	3,70	1,364
19	3,60	1,347
20	3,29	1,476
21	3,25	1,631
22	3,81	1,366
23	3,70	1,338
24	3,58	1,349
25	3,46	1,395
26	3,25	1,483
27	3,32	1,474
28	3,34	1,505
29	2,96	1,462
30	3,41	1,321
31	3,53	1,345
32	3,81	1,317
33	3,78	1,303
34	3,51	1,393
35	3,69	1,327
36	3,69	1,323
37	3,72	1,279
38	3,66	1,300
39	3,62	1,337
40	3,79	1,305

Table 4. Mean of the 6 sections of the questionnaire.

	Mean	SD
Communication	3,62	1,304
Leadership and management	3,59	1,411
Staff management	3,64	1,341
Financial management	3,44	1,446
Planning and priority setting	3,50	1,357
Problem solving	3,70	1,312

of statistics," argues that although scales with a greater number of response categories can offer greater precision, practical aspects such as analytical simplicity and respondent comprehension must also be considered.[21] He suggests a balance between the number of scale categories and the ease with which participants can reliably use them, emphasizing that an excessively complex scale may compromise data quality and interpretability. This perspective highlights the importance of designing measurement instruments that optimize both psychometric rigor and usability.

Furthermore, the analysis of "I don't know" responses, which were excluded in this study, could provide valuable information regarding respondent uncertainty or lack of awareness.[22,23] Future analyses should report the frequency of such responses and assess their impact on data interpretation and instrument validity.

For all items, except for item 29, the highest score was achieved in the "high or very high competence" category. The perception among nurse managers of possessing "medium" competence in their specific area of activity occupies the central position in the distribution across all questions. When combining the "high" and "very high" competence scores, question 22 reaches the highest frequency in the questionnaire with 184 responses (70.7%).

It is observed that the score indicating "no competence" for 33 items is below 14.2%. For 7 items, however, the percentage exceeds 18.1%; among these, 5 questions belong to the financial management category.

In particular, for question 20 (Fig. 1), 50 people (19.2%) report having no competence regarding budget management in line with the relevant financial legislation. In item 21, 60 MNMs

Table 4. Frequency and percentage of the 40 items of the questionnaire.

Item		Frequency	%
1	No – low competence	56	21,5
	Medium competence	30	11,5
	High–very high competence	173	66,5
2	No – low competence	66	25,4
	Medium competence	38	14,6
	High–very high competence	155	59,6
3	No – low competence	57	21,9
	Medium competence	19	7,3
	High–very high competence	181	69,7
4	No – low competence	54	20,8
	Medium competence	38	14,6
	High–very high competence	166	63,8
5	No – low competence	55	21,2
	Medium competence	27	10,4
	High–very high competence	173	66,8
6	No – low competence	60	23,1
	Medium competence	52	20
	High–very high competence	146	56,1
7	No – low competence	78	30
	Medium competence	42	16,2
	High–very high competence	95	36,5
8	No – low competence	58	22,3
	Medium competence	38	14,6
	High–very high competence	159	61,1
9	No – low competence	57	22
	Medium competence	32	12,3
	High–very high competence	167	64,2
10	No – low competence	54	20,7
	Medium competence	29	11,2
	High–very high competence	169	65
11	No – low competence	51	19,7
	Medium competence	26	10
	High–very high competence	172	66,2
12	No – low competence	59	22,7
	Medium competence	37	14,2
	High–very high competence	161	62
13	No – low competence	56	21,6
	Medium competence	28	10,8
	High–very high competence	173	166,5
14	No – low competence	51	19,6
	Medium competence	23	8,8
	High–very high competence	181	69,6
15	No – low competence	53	20,4
	Medium competence	25	9,6
	High–very high competence	178	68,5
16	No – low competence	57	22
	Medium competence	35	13,5
	High–very high competence	162	62,3
17	No – low competence	66	25,4
	Medium competence	41	15,8
	High–very high competence	146	156,2
18	No – low competence	56	21,6
	Medium competence	30	11,5
	High–very high competence	168	64,6
19	No – low competence	62	23,9
	Medium competence	30	11,5
	High–very high competence	163	62,7
20	No – low competence	76	29,2
	Medium competence	18	18,5
	High–very high competence	114	47,7

Item		Frequency	%
21	No – low competence	89	44,3
	Medium competence	44	16,9
	High–very high competence	103	39,6
22	No – low competence	58	22,3
	Medium competence	14	5,4
	High–very high competence	184	70,7
23	No – low competence	58	22,3
	Medium competence	26	10
	High–very high competence	172	66,2
24	No – low competence	62	23,9
	Medium competence	36	13,8
	High–very high competence	157	46,9
25	No – low competence	70	26,9
	Medium competence	34	13,1
	High–very high competence	149	57,3
26	No – low competence	81	31,2
	Medium competence	45	17,3
	High–very high competence	125	48
27	No – low competence	80	30,8
	Medium competence	39	15
	High–very high competence	132	50,8
28	No – low competence	79	30,4
	Medium competence	41	15,8
	High–very high competence	128	49,3
29	No – low competence	102	39,3
	Medium competence	51	19,6
	High–very high competence	96	36,9
30	No – low competence	65	25
	Medium competence	43	16,5
	High–very high competence	149	47,3
31	No – low competence	60	23,1
	Medium competence	42	16,2
	High–very high competence	155	59,6
32	No – low competence	53	20,4
	Medium competence	24	9,2
	High–very high competence	178	68,4
33	No – low competence	53	20,4
	Medium competence	25	9,6
	High–very high competence	178	68,4
34	No – low competence	70	26,9
	Medium competence	33	12,7
	High–very high competence	149	57,3
35	No – low competence	55	21,2
	Medium competence	33	12,7
	High–very high competence	169	65
36	No – low competence	57	21,9
	Medium competence	24	9,2
	High–very high competence	176	67,7
37	No – low competence	53	20,3
	Medium competence	27	10,4
	High–very high competence	177	68,1
38	No – low competence	55	21,2
	Medium competence	28	10,8
	High–very high competence	176	67,7
39	No – low competence	57	21,9
	Medium competence	31	11,9
	High–very high competence	171	65,8
40	No – low competence	51	19,6
	Medium competence	27	10,4
	High–very high competence	180	69,2

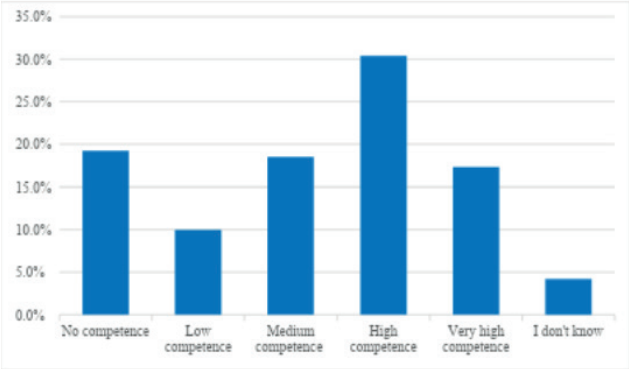

Figure 1. Item 20, budget management in accordance with the relevant financial legislation.

(23.1%) do not ensure that the asset register remains updated; in question 26, 52 coordinators (20%) are unable to develop realistic budget projections based on previous expenses; in statement 27, 47 respondents (18.1%) report not having the competence to ensure that all necessary expenses are included in the budget; in question 28, 48 people (18.5%) are unable to assess the department's performance in relation to expenses.

Additionally, in the first question of the activity planning group (item 29, Fig. 2), 61 Middle Nurse Managers (23.5%) do not use statistics to implement financial and human resources.

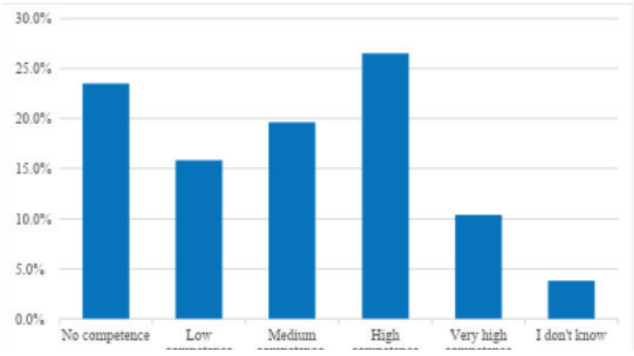

Figure 2. Item 29, use of statistics to implement financial and human resources.

Finally, 58 nurse coordinators (22.3%) did not know how to implement the 10-point NDOH plan from 2009-2014.

It is noticeable that in communication, across all five statements described, nurse managers report high competencies. In particular, 107 respondents (41.2%) declare that they are able to establish satisfactory relationships, and 98 people (37.7%) listen attentively to others' concerns.

In the leadership and management section, the highest score for "high competencies" is observed in question 10, where 86 MNMs (33.1%) indicate the highest value in encouraging staff to demonstrate a caring attitude toward patients, as well as in item 11, where 94 coordinators (36.2%) ensure that the risk of infection for patients is minimized.

In the eight statements of the third section (personnel management), "high competence" was the category that received the highest score. This is particularly observed in question 12, where 107 respondents (41.2%) report being able to evaluate the implementation of care programs while respecting the essential national standards, and in question 14, where 102 people (39.2%) ensure that the staff is informed about what is expected of them at work.

Timely intervention when equipment is out of service is the 22nd and only item in the financial management category, where 102 Middle Nurse Managers (39.2%) report having high competence.

In items 32 and 33 of the "planning and management of activities" section, 95 (36.5%) and 91 (35.0%) Middle Nurse Managers, respectively, report possessing "high competencies" in meeting agreed-upon goals and priorities and in their ability to identify health and community needs within their service area for use in strategic planning.

In the final section on problem-solving, the questions between 35 and 39 show "high competencies" as the most represented category. Specifically, 98 nurse coordinators (37.7%) state that they are able to resolve conflicts with staff. The last question of the section received 96 responses (36.9%) marked as "high competencies" in gathering sufficient information before resolving a problem.

Reliability

Cronbach's Alpha coefficient

The reference values for Cronbach's Alpha range from 0 to 1. In this case, a value of 0.992 was obtained, which is very close to 1. This result indicates excellent reliability and internal consistency of the test items.

McDonald's Omega

The analysis of McDonald's Omega produced an exceptionally high value ($\omega = 0.992$), indicating excellent internal consistency. This suggests that the items on the scale are highly correlated

with each other and reliably measure the same underlying construct.

Intra-Class Correlation Index

Regarding single measures, the ICC is 0.766, meaning that the intra-class correlation is very high, and thus the variability within the classes is very low compared to the variability between the classes. The ICC for average measures is 0.992, which is very close to 1 and can be defined as optimal intra-class correlation. The measurements within the classes are almost identical, and the total variability is almost entirely explained by the differences between the classes.

The Intraclass Correlation Coefficient (ICC) between the two-time points measurements was calculated to define the instrument's reliability over time. The ICC and the 95% confidence intervals (CIs) were calculated based on a 2-way mixed-effects model, looking for consistency among the mean rating of 30 measurements to determine the test-retest reliability.

The F value is 132.73, indicating that the variance between the groups is greater than the variance within the groups.

Discussion

The study aims to carry out a preliminary linguistic and cultural validation of the Italian version of the questionnaire *"360-degree evaluation of the job-related skill perception of PHC nursing managers."* among Middle Nurse Managers working in hospital wards in Italian hospitals. The scale consists of 40 items that investigate awareness in the areas of communication, leadership, personnel management, financial management, planning and defining activities, and problem-solving.

Communication

The results of our study indicate that most of the Middle Nurse Managers (MNM) interviewed believe they possess high or very high communication skills. This finding is significant because existing literature emphasizes the crucial importance of effective communication in nursing management positions.

The ability to communicate clearly and transparently has been identified as a fundamental element for success in nursing management. For example, Al-Dossary et al. (2014) highlighted that a leadership style that encourages open and transparent communication can significantly reduce the nursing staff's intention to leave their job.[24]

In line with our findings, Duffield et al. (2011) discovered that active listening is an essential skill for MNMs, contributing to the creation of a more positive work environment and higher staff job satisfaction.[25]

Furthermore, constructive feedback, a key component of effective communication, has been identified as essential for improving nursing staff performance. Hutchinson et al. (2013) emphasized that providing feedback appropriately can create a more collaborative work environment and promote individual skills development.[26] Participants' perception of having high skills in this area is a positive indicator of their ability to manage and develop their teams.

In conclusion, our results align with existing literature that highlights the importance of communication skills for MNMs. However, it is crucial to continue exploring and evaluating these skills through diverse approaches to ensure that subjective perceptions are supported by practical evidence.

Leadership and Management

The results of our study indicate that most of the Middle Nurse Managers (MNM) interviewed believe they possess high leadership skills. However, a critical point emerged regarding the implementation of the NDOH 2009-2014 plan, where the competencies reported were lower compared to the other areas assessed. This result offers interesting insights, both in terms of strengths and areas for improvement.

Leadership skills are fundamental for the success of nursing management. According to Cummings et al. (2018), leadership that inspires and motivates staff through a clear vision and positive example is associated with greater staff satisfaction and better clinical outcomes.[27] Our participants, who consider themselves highly competent in these areas, are well-positioned to improve team cohesion and the quality of care.

In line with our results, Spence Laschinger et al. (2012) found that Middle Nurse Managers who practice effective leadership, such as the ability to delegate tasks appropriately, can significantly improve team performance.[28] The positive perception of their delegation skills among our participants suggests that they can

optimize operational efficiency and foster the professional development of their staff.

Despite these positive aspects, the difficulty encountered in implementing the NDOH 2009-2014 plan warrants further analysis. This plan, aimed at improving the quality and accessibility of healthcare services, requires strong strategic planning and policy implementation capabilities. Stanley et al. (2016) highlight that leadership skills are crucial for clinical innovation and effective change management.[29] Policy implementation requires not only technical skills but also a deep understanding of organizational dynamics and resistance to change.

In conclusion, while the Middle Nurse Managers in our study perceive themselves as highly competent in general leadership areas, there are specific challenges in implementing complex policies.

Staff management

The results of our study show that most of the Middle Nurse Managers (MNM) interviewed consider themselves highly competent in personnel management, a crucial skill for ensuring care quality and a positive working environment. This finding aligns with existing literature, which highlights the essential role of competencies in human resource management, especially in complex healthcare settings.

Effective planning and organizing of work are fundamental competencies for success in nursing management. The results of our study indicate that the MNMs feel prepared to face challenges related to the distribution and management of personnel. Specifically, competencies in human resource planning have been recognized as essential for ensuring adequate coverage and improving the quality of care. This is supported by the research of Duffield et al. (2011), who found that efficient management of human resources is directly related to better outcomes in terms of care quality and staff satisfaction.[30]

Professional development of staff was also identified as an area in which MNMs feel competent. This is a key aspect not only for improving individual competence but also for increasing team motivation and engagement. Cummings et al. (2018) emphasized that nursing leaders who invest in continuous professional development contribute to maintaining a positive and productive work environment.[27] Our research suggests that the MNMs interviewed are aware of the importance of offering growth and training opportunities to their teams.

Another crucial area is performance evaluation. The results of our study show that MNMs are able to provide constructive feedback and guide staff toward improvement, an essential competency for continuous development. In line with the findings of Spence Laschinger et al. (2012), regular evaluations and meaningful feedback are vital tools for promoting professional development and improving the overall quality of services provided.[28]

In conclusion, the results of our study indicate that Middle Nurse Managers perceive themselves as highly competent in personnel management. While these competencies are recognized theoretically, it is essential that these perceptions translate into concrete practices. To this end, it is crucial that self-assessments are integrated with external feedback to ensure the effectiveness of the actions taken. Moreover, continuous support for professional development will be critical in strengthening personnel management skills and ensuring the quality of nursing care.

Financial management

The results obtained in this study support the thesis proposed in the literature that there is a genuine need to further develop financial competencies among healthcare Middle Managers, as these competencies directly influence the financial success of the organization and are conditioned by the complexity of the sector, teams, and organizations in which these skills must be developed.

The skills identified as indispensable and implementable include the definition of complex business models, the development of business plans, reading and interpreting data, and the preparation and management of budgets.[31] Based on the data analyzed from the questionnaire responses, it is crucial to implement study programs focused on teaching the preparation of realistic projections based on previous annual expenses and increasing departmental performance in relation to expenditures.

In the study by Jun et al. (2023), nursing managers emphasized the importance of managing the financial aspect to improve the quality of the services provided.[32] These tasks include financial management and marketing, which have become increasingly important in recent years. The growing competition in the

healthcare field requires that even nurses in leadership positions adopt a financial perspective and build innovative marketing strategies for the services they offer. Consequently, it is important to develop innovative programs to enhance financial planning skills. Indeed, this need also emerges in our study, where it is particularly essential to implement competencies related to budget management in line with relevant financial legislation.

In the study by Paarima et al, conducted among nursing managers in Ghana, a moderate level of financial management skills was observed at the operational unit level, similar to the level of knowledge and skills perceived in our study.[33] The moderate score confirms the opinion that nursing managers lack financial management skills and, therefore, do not participate in organizational budgeting planning processes. In contrast, however, hospital management expects a reduction in waste and the provision of economically viable healthcare for the entire organization. Given their important role, nursing managers at all levels should be involved in the allocation of funds and expenses, as most of these are consumed in hospital departments. Due to the low self-reported competence in this study, it is necessary to ensure specific training to develop financial planning competence that includes all necessary department expenses within the budget. Similar results have been reported in Israel, China, the United States, China, and South Africa.[2,10,35]

The need for frequent training on financial management for nursing managers before assuming their roles can easily address this gap. This can be consolidated during university training periods or post-basic courses. Hospital structures should assist nursing managers in developing and continuously maintaining financial management skills and in analyzing their work environment to enable complete skill acquisition before assuming managerial positions. This viewpoint has been well articulated by Chase (2010) in his seminal study on nursing management competencies in the United States.[2]

Reducing or eliminating these competency gaps can potentially benefit employees in their current roles, support a long-term career development plan for future roles, and improve organizational performance.

Planning and Priority Setting

In this study, the competencies related to determining the most important needs, defending the organization's well-being and primarily performing the most important tasks are skills developed and applied daily by nurses in leadership roles. Indeed, planning can be a useful approach to managing time effectively, thereby influencing productivity and organizational success.[36]

The results of the review conducted by Filomeno et al. reveal that the most used and effective time management strategies for nursing managers consist of setting achievable goals, identifying priorities, and delegating tasks. Specifically, a manager should prioritize the concept of planning and definition, a technique considered efficient for optimally managing time. This has a positive impact not only on productivity and organizational success but also on the work-life balance of managers.

The definition of the organization's strategic financial plan, aimed at identifying the community's needs in line with available economic resources, is a fundamental priority for the entire hospital organization. The main areas requiring further exploration have been the desire for a guideline for an explicit definition of priorities, focusing on equity in the decision-making process.[37] In-depth training focused on defining these priorities to implement financial and human resources is a competency that needs targeted exploration, as also indicated in our research.

Problem-solving

It is essential that nurse coordinators possess strong problem-solving skills to provide quality care in various healthcare settings, including managing conflicts among staff, promptly implementing corrective actions, and controlling the environment to ensure a safe space for workers. In this study, participants report having high or very high competencies in this area and believe that no additional training is necessary beyond what they have already received, particularly in the phase of gathering sufficient information before approaching problem resolution. A study highlights how the decision-making process for problem-solving is influenced by experience, the nature of the task, and the nursing context.[38] It was observed that MNMs reported not possessing the

desired level of problem-solving ability. In this context, it is therefore crucial that this topic be further explored in both foundational training programs and continuous education programs. This suggests that training programs for these professionals should include the development of problem-solving competencies.[14]

Limits

The present study provides an initial attempt to validate a tool aimed at assessing the competencies of Middle Nurse Managers (MNMs). While the instrument demonstrates high internal consistency, several methodological and psychometric limitations must be addressed to confirm its reliability and utility in professional practice.

Firstly, the extremely high Cronbach's alpha coefficient ($\alpha = 0.992$) indicates potential item redundancy. Although a high alpha is commonly interpreted as evidence of internal consistency, coefficients above 0.90 may suggest that items are overly homogeneous and possibly redundant, thereby limiting the instrument's discriminant capacity.[39] This redundancy could compromise the scale's ability to capture the nuanced distinctions among various managerial competencies.

Secondly, the absence of exploratory or confirmatory factor analysis represents a significant methodological shortcoming. Factor analysis is essential for validating the instrument's latent structure and confirming that items coherently cluster into theoretically defined domains such as communication, leadership, and organizational management.[40,41] Without this validation step, the construct validity of the tool remains uncertain, and the interpretation of global and subscale scores becomes problematic.

Another critical issue concerns the systematic exclusion of "I don't know" responses during data analysis. Although this approach is not uncommon, these responses may reflect a lack of perceived competence or awareness, offering valuable insight into areas of professional uncertainty or training need. Excluding them risks reducing the tool's diagnostic sensitivity and may distort response distributions, particularly in categories recoded for statistical simplification.[42]

Additionally, the recoding of the original 10-point Likert scale into a 5-point format, although intended to streamline statistical analysis, may have reduced the instrument's sensitivity to subtle variations in perceived competence. Research suggests that reducing response categories can diminish variance and increase central tendency bias, ultimately lowering the precision of the measurements.[43]

Regarding external validity, the study was conducted exclusively in Italian hospital settings. While this offers valuable contextual insights, it limits the generalizability of findings to other cultural and organizational contexts. Validation in diverse geographical and institutional environments is necessary to assess the tool's adaptability and cross-cultural applicability.[15]

Moreover, the lack of longitudinal assessments, such as test–retest reliability, prevents evaluation of the instrument's temporal stability. Without evidence of consistency over time, the reliability of the tool under repeated measurement conditions cannot be assured.[44] Furthermore, convergent validity (comparing the instrument's scores with those of established tools measuring similar constructs) and multidimensionality analyses remain unexplored. Both are essential to establish the robustness and theoretical coherence of the scale.[45]

From a practical standpoint, the findings emphasize the importance of structured managerial training programs tailored to MNMs, particularly in areas such as financial management and the implementation of complex healthcare policies. Healthcare organizations should foster continuous professional development through structured education and feedback systems, aiming to bridge the gap between perceived and actual managerial competencies.[46]

Conclusions

In line with the evolution of the nursing profession and in response to the new needs of the population, nurse coordinators will need to acquire greater organizational, managerial, and financial competencies. Given that MNMs are part of increasingly complex organizations that require the development of specific skills, it is important to provide them with targeted training that deepens these abilities. Therefore, it is essential to train competent managers to ensure the success of the entire healthcare organization.

In line with the results obtained in the article from which the original questionnaire was

derived, the need for training that deepens financial management is evident. This can be promoted through the implementation of continuous professional development programs that always consider the objectives of the hospital system.

In conclusion, while the instrument offers promising preliminary results and high internal consistency, its psychometric validation remains incomplete. Future studies should adopt more rigorous methodological approaches, including cross-cultural validation, longitudinal design, and in-depth factor and validity analyses. These efforts are necessary to strengthen the instrument's credibility and enhance its applicability in diverse healthcare settings.

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