

RELATIONSHIP BETWEEN AGILE LEADERSHIP PRACTICES OF NURSE MANAGERS AND STAFF NURSES' PROFESSIONAL DEVELOPMENT

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Abstract

Agile leadership encompasses a set of leadership strategies that enable organizations and individuals to adapt effectively to change, achieve desired outcomes, and enhance career success. Professional development is fundamental to nurses' lifelong learning and plays a critical role in maintaining and advancing their knowledge, competencies, and clinical skills. Aim: to examine the relationship between agile leadership practices of nurse managers and staff nurses' professional development. Design: A descriptive correlational design was used in current study. Setting: The study was conducted in ICUs of Al Moneira pediatric university hospital affiliated to Cairo University, Egypt; Sample: all nurse managers (n=31) and all staff nurses (n=123) in ICUs of the previously mentioned setting. Tools: Four tools were utilized, namely : (1) Personal data sheet for nurse managers (2) Agile leadership practices observational check list (3) Personal data sheet for staff nurses (4) Professional development questionnaire: Results: revealed that the majority (96.8%) of nurse managers had moderate level in total agile leadership practices. The majority (97.6%) of staff nurses had high level in total professional development. Conclusion: there was a positive statistical correlation between the nurse managers' agile leadership practices and staff nurses' professional development ($r=0.55$, $p=0.00^$, $r=0.79$, $p=0.00^*$) respectively. Recommendations: Hospital administrators should provide opportunities to empower nurse managers to practice agile leadership in their units and recognize best practices for nurse managers and staff nurses. Replicate the study with a larger sample size and in different settings to confirm and enhance the generalizability of the findings.*

Keywords: Agile Leadership, Practices, Professional Development.

1. INTRODUCTION

In today's increasingly complex and rapidly changing healthcare environment, organizations must respond effectively to continuous change, technological advancements, and evolving patient and stakeholder expectations. Traditional leadership models, which often focus on hierarchy, control, and long-term planning, struggle to keep pace with these challenges. Consequently, many healthcare organizations have turned to agile leadership to drive success in this uncertain landscape (Ncube et al 2024, Smith & Bhavsar, 2021).

Agile leadership is a style of management that changes to accommodate employee empowerment initiatives and strengthens an organization's capacity to survive in unpredictably changing work environments. Agile leadership represents a transformative approach to organizational operations, emphasizing departure from traditional command-and-control structures (Ncube et al 2024, Kadenic &

Tambo, 2023). A fundamental characteristic of agile leadership is characterized by its focus on fostering an environment conducive to collaboration among cross-functional teams. Agile leadership seeks to create a culture where team members feel empowered to share ideas, take initiative, and work collaboratively towards common goals. This approach encourages open communication, trust, and mutual respect among team members, which are essential for fostering innovation and creativity (Porkodi, 2024, Jerab & Mabrouk, 2023). The main goal of agile leadership is to increase teams' capabilities to attain higher levels of accomplishment and is like the goal of a regular team coach. The main tasks of an agile leadership are to support staff nurses, stakeholders, and nursing managers to understand and apply agile methods and facilitate and monitor effective implementation of agile throughout the whole organization. (Akkaya, Mirela & Apostu, 2022, Theobald, Prenner, Krieg, Schneider, 2020).

Agile leadership practices are based on listening, empathy, and openness to dialogue therefore, the leader should demonstrate a high level of emotional intelligence, be sensitive to signals within the organization, and be able to adjust their actions to the individual needs of team members. Agile leadership practices involve main aspects such as: Continuous learning and improvement (prioritize learning and the continuous development of teams), Adaptability (agile leaders must be highly adaptable to changing environments, requirements), Collaboration and empowerment (emphasizes collaboration and focus on empowering teams), Emotional Intelligence (to manage own emotions and those of the teams), Focus on outcomes (focusing on delivering value to customers and achieving desired results (Ncube et al 2024). Professional development (PD) is central to nurses' lifelong learning and constitutes a vital aspect for keeping nurses' knowledge and skills up to date. Health care professionals need to update their skills regularly and continue education and continued professional development enables the renewal and updating of skills in health care settings (Mlambo, Silén, & McGrath, 2021).

Professional development refers to the process of ongoing education and development of healthcare professionals, from initial qualifying education and for the duration of professional life, in order to maintain competence to practice and increase professional proficiency and expertise". PD can sometimes refer to a learning framework, and activities contribute to the continual professional effectiveness and competence (El Najm, 2020). Professional development is critical for a nurse's career advancement and for providing person-centered, safe, and effective evidence-based care in the workplace and essential for nurses' lifelong learning and for keeping their knowledge and skills up to date which enables the renewal and updating of skills in healthcare settings (Jackson and Manley, 2021). Another important task of PD is to help secure patient safety in the context of cross-border mobility including the prevention and control of healthcare associated infections and continuously acquiring and reinforcing the life-long knowledge, skills and competences of health professionals is crucial to meet both patients' needs and individual professional learning needs (Dębska, Gorzkowicz, Foryś, & Kilańska, 2020). Leaders who adopt the agile leadership approach, see the problems as an element that will provide change and development, and focus on the strengths of the employees of the organization, which can contribute positively to the development of the stakeholders and the organization so, In this sense, it can be said that agile leaders constantly support their followers in terms of professional development and offer opportunities (Yalçın & Özgenel, 2021).

Significance of the Study

According to study conducted by (Mohamed Naguib, 2022) in Upper Egypt, concluded that organizational agility has a mediating function in the improvement of nurses' abilities because it offers vital support for nurses moving into advanced practice to encourage professional development and career goals. Al-Ghazali, (2020) concluded that the characteristics of an agile leader empower employees to accept changes in the environment and become more flexible in the complex,

unpredictable, and dynamic environment in their organization. Moreover, another study conducted by (Akkaya, Panait, Apostu, & Kaya, 2022) revealed that agile leadership can promote the perception of career success among healthcare employees and agile leadership positively impacted career success. Also, (Sahin, and Alp, 2020) revealed that leaders in agile organizations are embracing change, and this has implications for the strategy they use to achieve their goals and vision.

From researcher experience with nurse managers at the study setting, it was observed that they manage their units routinely without any effort for applying new ideas for improvement or decisions of unusual or creative solutions for their units' problems. Also, a formal and indirect communication was found between managers and their subordinates therefore, because the role of nurse managers is crucial for effective leadership and the overall success of healthcare organizations, this study aimed to improvement in nurse managers agile leadership practices that will provide them with essential agility principles during practice at workplace and the improved agile leadership practices lead to improvement in nursing staff professional development perception.

2. METHOD

Aim of the Study

The current study aimed to examine the relationship between agile leadership practices of nurse managers and staff nurses' professional development.

Research Question

What is the level of agile leadership practices among nurse managers?

What is the level of professional development among staff nurses?

What's the relationship between agile leadership practices of nurse managers and staff nurses' professional development?

Design

A descriptive correlational design: this research design aims to examine and describe the relationship between different variables in a way that is not a cause- and-effect relationship. This research design is helpful in measuring the degree of association between two variables, and it additionally enables the formulation of informed predictions derived from the identified relationships (Bhandari, 2021)

Setting

This study was conducted at Al Moneira pediatric university hospital affiliated to Cairo University. It's a governmental hospital which provides free and paid service for pediatric patients. This hospital consisted of nine floors with 265 beds and seven ICUs (Neonatal ICU: 40 Incubators, Emergency ICU: 5 beds, Hemodialysis ICU: 8 beds, General ICU: 30 beds, Surgery ICU: 6 beds, Endocrine and Diabetes ICU: 6 beds, Gastrointestinal ICU: 2 beds). The study data was collected from previously mentioned ICUs units.

Sample

Study sample composed of two groups as follows:

1st group: all nurse managers who work in the previously mentioned units (ICUs) and their number (n = 31)

2nd group: all staff nurses who are working in the previously mentioned ICUs units and their number (n=123)

Data Collection Tools

The data of current study was collected by using four tools as follows:

Tool I: Personal Data Sheet for Nurse Managers

Developed by the researcher which includes (age, gender, educational level, job title, and years of experience in nursing).

Tool II: Agile Leader Practices Observational Checklist

This tool was developed by the researcher and guided by (James et al., 2019, Ibrahim, 2022). It was used to assess agile leader practices among nurse managers and consisted of 47 items covering the following 12 dimensions 1. Organizing working environment (5 items), 2. Continuous improvement (5 items) 3. Humility trait (3 items) 4. Persuasion skills (3 items), 5. Negotiation skills (3 items), 6. Social leadership skills (3 items) 7. wisdom trait (4 items) 8. Decision making skills (5 items) 9. Placidness traits (4 items) 10. Patience trait (3 items) 11. Objectivity trait (5 items) and 12. Confidence trait (4 items). Two-point responses of practices "1" (done), "zero" (not done). These scores were converted into percentage scores. The level of agile leadership practices was considered high level $\geq 75\%$ of total scores, while moderate level 50- 75% of total scores and low level $\leq 50\%$.

Tool III: Personal Characteristics Data Sheet for Staff Nurses

It was developed by the researcher and included (age, gender, educational level, years of experience in nursing profession, working place).

Tool IV: Professional Development Questionnaire

This tool was developed by (Brekelmans et al, 2016) and was modified by the investigator. It was used to assess perception of nursing staff regarding professional development. It consisted of 27 items and covered the following 6 dimensions: A- personal development (8 items) B- requirement (2 items) C- career opportunities (3 items), D- intangible condition (6 items), E- clinical practice development (4 items) F- participation in organization development (4 items). Responses were scored through a three-point Likert scale which included agree (3), uncertain (2), and disagree (1).

Validity and Reliability

Content validity was established by a panel of three experts from nursing administration department at faculty of nursing, Cairo University. They were asked to examine the data collection tools for content coverage, clarity, wording, length, format, and overall appearance. In addition, the reliability was determined statistically by testing the internal consistency using Cronbach's Alpha Coefficient test. The Cronbach's Alpha for nurse managers agile leadership practices observational checklist reliability was (0.90) and staff nurses' professional development perception was (0.85).

Procedure

Prior to data collection, an official approval was obtained from the research ethical committee of the faculty of nursing- Cairo University, the official permission was obtained from the medical and nursing managers of Al Moneira pediatric university hospital to carry out the current study. Nurse managers and staff nurses of the selected units were invited to participate in the study; they were informed by the researcher that participation is completely voluntary with informed consent and there is possibility for withdrawing from the study at any time, confidentiality of the information was assured, the aim, nature and significance of the study were explained to each participant individually. Nurse Managers' agile leadership practices were observed intermittently at different shifts (3 times per week) from 30 to 45 minutes. Professional development questionnaire was filled by staff nurses at their break time for 15 minutes.

Statistical Analysis

The collected data was tabulated, computed and analyzed statistically using Statistical Package for the Social Sciences (SPSS) program version 24. Descriptive statistics in the form of frequency distribution, percentages, mean and standards deviations were utilized. Correlation between variables was evaluated using Pearsons's correlation coefficient (r) test.

3. RESULT

Findings of the current study were presented in the following parts as follows:

Part 1: Frequency Distribution of nurse managers According to Personal data (table 1)

Part 2: A-Total Mean Percentage Scores of Nurse Managers' Agile Leadership Practices Dimensions (Tables 2)

B-Figure 1: Frequency Distribution of Total Agile Leadership Practices Levels among Nurse Managers

Part 3: Frequency Distribution of Staff Nurses According to Personal Characteristics data (Table 3)

Part 4: A-Frequency of Total Mean Scores of Professional Development Dimensions among Staff Nurses (Tables 4)

B- Figure 2: Frequency Distribution of Total professional development Levels among Staff Nurses

Part 5: Correlation between Nurse Managers' Agile Leadership Knowledge, Practices and Staff Nurses' Professional Development (Tables 5)

Table 1: Frequency Distribution of Nurse Managers According To Personal Data (N=31)

Personal characteristics	No.	%
Gender		
Male	11	35.5
Female	20	64.5
Age		
25-<30	4	12.9
30-<40	16	51.6
40+	11	35.5
Educational qualifications		
Bachelor's degree in nursing	13	41.9
Diploma in nursing school	18	58.1
Position		
Nurse director	2	6.5
Unit manager	8	25.8
Charge nurse	21	67.7
Name of workplace		
Neonatal intensive ca	7	22.6
Emergency department	5	16.1
Surgery intensive care	2	6.5
Hemodialysis intensive care	10	32.3
Diabetic and Endocrine intensive care	3	9.7
General intensive care unit	2	6.5
gastrointestinal intensive care	2	6.5
Years of experience		
<5	4	12.9
5-<10	4	12.9

10-<15	9	29.0
15+	14	45.2

Table (1) shows that the majority (64.5%) of nurse managers were female. The highest percent (51.6%) of them were in the age range of 30 to less than 40 years, while 35.5% of them were aged more than 40 years. As regards to educational background, the highest percentage (58.1 %) of nurse managers had diploma in nursing, while 41.9% of them had bachelor's degrees on other hand, the highest percent (67.7%) of nurse managers were charge nurses, (25.8%) were unit managers while the lowest percent (6.5%) of them were nurse directors. Moreover, 32.3% of the nurse managers were working in hemodialysis intensive care, while 22.6% were working in neonatal intensive care. Regarding years of experience, this table illustrates that 45.2% of the nurse managers had more than 15 years of experience, while 29% of them had 10 to less than 15 years of experience.

Table 2: Total Mean Percentage Scores of Nurse Managers' Agile Leadership Practices Dimensions (N=31)

Agile leadership practices	Mean	Sd	Mean %
Organizing work condition	0.74	0.40	74%
continuous improvement	0.63	0.44	63%
Humility traits	0.61	0.49	61%
Persuasion skills	0.61	0.47	61%
Negotiation skills	0.59	0.50	59%
Social leadership skills	0.52	0.50	52%
Wiseness trait	0.57	0.49	57%
Decision making skills:	0.60	0.49	60%
Placidness trait:	0.58	0.50	58%
Patience trait	0.58	0.50	58%
Objectivity trait	0.63	0.49	63%
Confidence trait	0.49	0.50	49%
Total	28.2	1.9	59%

Table 2 Shows that the highest perceived dimension by nurse managers was Organizing work condition (74%), followed by continuous improvement and Objectivity trait (63%) and the lowest perceived dimension was Confidence trait (49%)

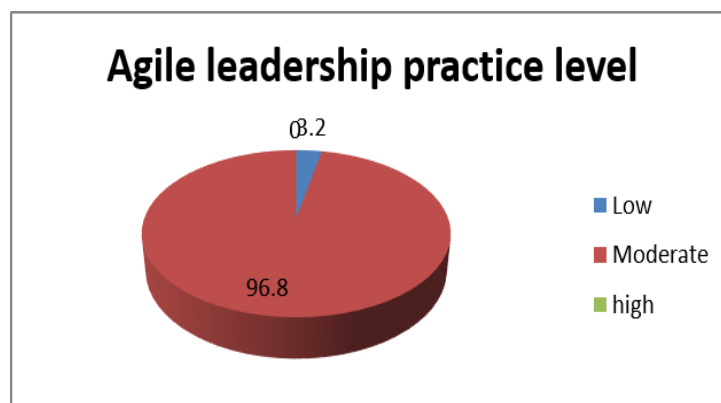


Figure 1: Frequency Distribution of Total Agile Leadership Practices Levels Among Nurse Managers (N=31)

Figure 1 illustrates that the majority of participants had moderate level in total agile leadership practices scores as (96.8%) of nurse managers scored moderate (50- < 75%)

Table 3: Frequency Distribution of Staff Nurses According To Personal Characteristics Data (N=123)

Personal characteristics	No.	%
Gender		
Male	54	43.9
Female	69	56.1
Age		
<20	4	3.3
20-<30	61	49.6
30-<40	47	38.2
40+	11	8.9
Level of Education		
A- diploma in nursing school	44	35.7
B- Associated technical diploma in nursing	43	35.0
C-Bachelor's degree in nursing	36	29.3
Years of experience		
<5	31	25.2
5-<10	39	31.7
10-<15	34	27.6
15+	17	13.8
Name of Workplace		
Neonatal intensive care unit	34	27.6
Emergency intensive care unit	8	6.5
Hemodialysis intensive care	13	10.6
General intensive care unit	16	13.0
Surgery intensive care unit	14	11.4
Diabetic & Endocrine intensive care unit	14	11.4
Gastrointestinal intensive care unit	24	19.5

Table (3) shows that the majority (56.1%) of staff nurses were female. Also, (49.6%) of staff nurses were in the age range of 20 to less than 30 years, while 38.2% of them were aged 30 to less than 40 years. As regards to educational background, the highest percentage (35.7%) of staff nurses had diploma in nursing, while (35%) of them had associated technical diploma in nursing. Regarding to years of experience, 31.7% of staff nurses had 5 to less than 10 years of experience in nursing practice. Moreover, 27.6% of staff nurses were working in neonatal intensive care unit while 19.5% were working in gastrointestinal intensive care unit.

Table 4: Frequency of Total Mean Scores of Professional Development Dimensions among Staff Nurses (n=123)

Professional development dimensions	Mean	Sd	Mean %
personal development	2.96	0.16	98.7%
Requirement	2.87	0.42	95.7%
career opportunities	2.77	0.50	92.3%
Intangible condition	2.64	0.83	88.0%
Clinical practice development	2.52	0.71	84.0%
Participation in organization development	2.42	0.77	80.7%
Total	76.0	5.8	89.9%

Table (4) illustrates that the highest perceived dimension by staff nurses was personal development (98.7%), followed by requirement (95.7%) and the lowest perceived dimension was participation in organization development (80.7%)

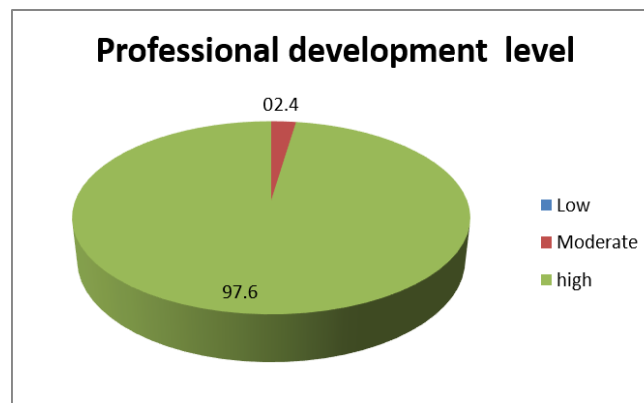


Figure 2: Frequency Distribution of Total Professional Development Levels Among Staff Nurse (N=123)

Figure (2) demonstrates that the majority of staff nurses had high level in total professional development scores as (97.6%) of them scored high ($\geq 75\%$)

Table 5: Correlation between Nurse Managers' Agile Leadership Practices and Staff Nurses' Professional Development

Study variables	Staff nurses' professional development	
	r	P
Nurse managers' agile leadership practices	0.79	0.00*

Table (5) shows that there was a positive statistical correlation between the nurse managers' total mean scores of agile leadership practices and total mean scores of staff nurses' professional development ($r = 0.79$, $p = 0.00^*$)

4. DISCUSSION

Agile leadership is a contemporary leadership approach that promotes organizational development, adaptability, and long-term sustainability. It emphasizes leaders' positive behaviors, flexibility, and responsiveness to change, enabling them to inspire, empower, and support employees. Through fostering collaboration, continuous learning, and shared decision-making, agile leaders positively influence employees' attitudes and behaviors, enhancing their commitment, engagement, and ability to achieve organizational goals effectively. (Al-Qawasmi, 2026). The present study revealed that more than half of the nurse managers were aged between thirty to less than forty years. This aligns with (Kamal and Hassan, 2022) who reported that the average age of our respondents was almost 25 to 45 years. However, this finding contrasts with (Husein, 2025) who found that the most significant proportion of respondents were aged between 41 and 45 years

Regarding gender, the findings showed that the majority of the nurse managers were females. This result is consistent with (Mostafa, Shazly, Mohamed, 2024) who found that most of study sample were female. Conversely, (Kamal and Hassan, 2022) suggest that the majority of respondents are male. Besides, this study revealed that more than half of the nurse managers held diploma in nursing, this agrees with (Alharbi, 2022) who showed that most of study sample possessed a diploma in Nursing. However, (Siregar, Afiff and Halim, 2023) demonstrated that majority of respondents hold a bachelor's degree. Furthermore, nearly half of the nurse managers had more than fifteen years of experience. This finding is supported by (Mostafa, Shazly, & Elsayed, 2024). Who reported that most of head nurses had years of experience ranged from 10 to less than 20 years? In contrast (Muhammad et al, 2021) argue that only 23.3 percent had experience of 10 years or over. As regard work setting, the

study showed that most of the nurse managers worked in hemodialysis intensive care. Regarding nurse managers' practices related to agile leadership, the present study revealed that the nurse managers had moderate mean scores of agile leadership practices dimensions. From the researcher point of view, this improvement may be attributed to increased awareness among nurse managers regarding the importance and value of agile leadership and they acquired the skills needed to adapt and respond to rapid organizational changes and to foster a harmonious work environment. At the same line (Mostafa, Shazly, & Mohamed, 2024). Clarified that, there was general improvement in total levels of head nurses' agile leadership practice. In contrast (Özdemir, 2023) found that there was a low improvement in agile leadership skills among head nurses.

As regard to nurse managers' levels of agile leadership practices, the current study denotes that nurse managers had moderate levels regarding agile leadership practices as majority of them reached a moderate level. This congruent with (Abdulla, Al Askari, Sadq, 2021) found that two thirds of head nurses exhibited positive agile leadership behaviors.

The current study found that almost half of the staff nurses were aged between twenty to less than thirty years, this result aligns with the findings of (Kurtović, 2024) who reported that half of participants were aged between 25-29 years. While it is contradicted with the findings of (Alharsan, 2025) who indicated that near to half of the study participants are in age group 30–40-year-old.

The current study delineated that the majority of the staff nurses were females. This result could be explained by the fact that nursing is historically and predominantly a female profession with relatively low male enrollment at nursing academic institutions compared to females, leading to females dominate the nursing workforce at health care institutions. This result agrees (Shahzadi, Samual, Barket, Ilyas. 2025) who revealed that all participants were female nurses. The current study revealed that the highest percentage of staff nurses had diploma in nursing. In agreement with the present study, a study conducted by (Rahmah, Hariyati, Sekarsari, & Pakasi, (2023) clarified that most of participants had a diploma in nursing. In contrast, Mahmoud, Farouk & Ibrahim 2024) demonstrated that three fifths of nurses had Bachelor of Nursing Science.

Regarding years of experience, the current study revealed that most staff nurses had five to less than ten years of experience in nursing practice. This result matched with (Mahmoued, Farouk & Ismail, 2024). who indicated that three fifths of nurses had 5-<10 years. In contrast, these findings are against (Laitsch,etal ,2024) who showed that an average tenure in nursing of 11 years for nurses.

The current study demonstrated that the staff nurses had moderate mean scores of professional development dimensions. From the researcher's point of view, this result could be due to professional development playing a crucial role in maintaining clinical competence, improving patient outcomes, and adapting to changing healthcare standards so, frontline nurses perceive a more direct or practical benefit from professional development in nursing practice

At the same context, (Alharsan. 2025) revealed a high level of engagement in continuous professional development activities among nurses. In contrast, this contradicted with (Wehabe, Gebretensaye, & Bizuwork, 2024) who reported that PD engagement was relatively low and exhibit low participation in PD activities. The current study revealed the staff nurses had high mean scores of professional development levels score as the majority of staff nurses scored high. This congruent with (Yalçin, & Özgenel, 2021) who determined that the attitude towards professional development is at a "very high" level. The current study shows that there was a positive statistical correlation between the nurse managers' total mean scores regarding agile leadership knowledge, practices and total mean scores regarding staff nurses' professional development. From the researcher perspective, when the nurse managers become more knowledgeable and highly skillful about agile leadership this reflected on nurses' attitude regarding improving their practices, updating their knowledge and engaged in

different activates that help them to be professionally developed. This agrees with (Yalçin, & Özgenel, 2021) who documented that one of the important findings of the research is that the agile leadership characteristics of study participants positively affect their attitudes towards professional development.

Also, (Nugroho, Muniroh, & Arifin, 2024) found that agile leadership also contributes to career development by fostering a culture of continuous learning which are essential for professional growth and career progression. In contrast, Porkodi, (2024) reported that agile leadership has no or a weak effect on professional development.

5. CONCLUSION AND RECOMMENDATIONS

In the light of the present study findings, it can be concluded that the majority of participants had moderate level in total agile leadership practices, also the majority of staff nurses had high level in total professional development. Moreover, there was a positive statistical correlation between the nurse managers' agile leadership practices and staff nurses' professional development. Additionally, Hospital administration should provide opportunities to empower nurse managers to practice agile leadership in their units and recognize best practices for nurse managers and staff nurses. Conduct regular and ongoing educational program , workshops and training courses on agile leadership to maintain that nurse mangers update knowledge and practices , and develop comprehensive guidelines and polices for application of agile leadership in health care settings, integrate agile leadership concepts , competencies and practical applications into nursing curricula, encourage all nursing staff to participate in workshops, seminars regarding agile leadership to enhance their knowledge and practical skills. For nursing research, replicate the study with a larger sample size and in different settings to confirm and generalize the findings, conduct research studies to identify barriers in practice settings.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this manuscript. In addition, ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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