

The Relation between Entrepreneurship Head Nurses' Characteristics and their Leadership Practices in the University Hospitals.

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Abstract

Background: Nurse entrepreneurs play a vital role in the healthcare system by promoting the development of specialized services, such as nursing entrepreneurship and nursing businesses. **The research aimed** to examine the relationship between Entrepreneurship Head Nurses' Characteristics and their Leadership Practices in University Hospitals. **Research design:** A descriptive correlational research design was used in this research. **Setting:** The study was conducted at all Minia University hospitals (university hospital, cardiothoracic, obstetric & pediatric, kidney disease hospital, and liver hospital). **Subjects:** The study subjects consisted of all head nurses working in Minia University hospitals, and their total no 85. **Data collection:** Two tools were utilized Entrepreneurship characteristics Questionnaire and Leadership Practices Inventory. **Results:** The study's findings demonstrated that more than two-thirds of the studied head nurses have entrepreneurship characteristics. Also, the majority of them have leadership practices. **Conclusion:** a statistically significant positive association between head nurses' characteristics of entrepreneurship and their leadership practice. **Recommendation:** Develop an appropriate training program and curriculum to equip nursing students and experienced nurses with the necessary skills and knowledge for a successful career in nursing entrepreneurship.

Keywords: Entrepreneurship, Leadership Practices, Head Nurses.

Introduction:

Nursing entrepreneurship is the act of taking calculated risks, acting holistically, seizing opportunities, and demonstrating autonomy, independence, flexibility, determination, innovation, self-confidence, discipline, and responsibility. It involves venturing into new care settings, enhancing the value of the nursing profession in society, contributing to the economic growth of the nation, managing finances and conflicts, being knowledgeable about laws and regulations, and having a forward-looking perspective (Copelli et al., 2019).

Nursing entrepreneurship allows nurses to work for themselves, enabling them to follow their vision and passion for enhancing health outcomes through innovative methods (Vannucci & Weinstein, 2017). Entrepreneurship is the act of organizing and

executing projects, services, and businesses in order to generate advantages and achieve success (Ubochi et al., 2021)

A leader with entrepreneurial skills can recognize potential opportunities, gather necessary financial resources and management expertise, and strategically take risks to create new markets for innovative products, processes, and services. Moreover, an entrepreneur is an individual who employs diverse leadership strategies to strategize, supervise, and undertake occupational hazards while generating benefits for their organization (Castro et al., 2020).

Leadership is crucial in determining important organizational outcomes and is necessary in all nursing activities. Each nurse, regardless of their role as a staff nurse, team leader, head nurse, supervisor, or nursing director, is required to carry out administrative and managerial tasks. The sole distinction lies

in the extent of professional responsibilities mandated by each occupation. Head nurses' leadership practices and entrepreneurship characteristics directly impact organizational performance (Le & Tran, 2020; Ellis, 2021).

The only difference lies in the scope of practice required by each job. So that leadership practices and entrepreneurship characteristics of head nurses have its mechanism on organizational performance (Le & Tran, 2020; Ellis, 2021).

Leadership exerts a significant impact on innovation and entrepreneurship through various factors. As the business expands and establishes, an entrepreneur naturally acquires leadership abilities and expertise (Kadwa & Barnard, 2019). Leadership skills and competencies enable an entrepreneur to ascertain the company's trajectory. Consequently, this increases profitability and enhances the business's reputation within the industry. Proficient leadership abilities facilitate entrepreneurs in expanding their businesses and equipping their organizations to overcome challenges and gain a competitive edge within their industry and among other companies (Esmer & Faruk, 2017). Thus, an entrepreneur must possess leadership skills to ensure the success of an entrepreneurial business.

Significance of the Study

Nurse entrepreneurs address the deficiencies in the existing healthcare system by promoting the creation of specialized products and services, advanced technology, software, and safety systems. A nurse entrepreneur is an individual who owns a business that provides nursing services in various capacities, such as direct care, education, research, administration, or consultation (Arnaert et al., 2018).

Nurse entrepreneurs can establish their own companies to develop and sell medical technologies and products, deliver direct patient care or patient advocacy, educate and train other professionals or community members, or provide consulting services in the healthcare field. With the increasing number of nurses venturing into entrepreneurship, it is crucial to determine the most effective methods and the

transferable skill sets from providing direct care to assuming leadership roles in business (Chijioke et al., 2021).

Nursing entrepreneurs must possess specific skills to succeed, such as problem-solving, leadership, communication, and decision-making abilities. Therefore, it is crucial to enhance and refine these abilities during Nursing education through innovative pedagogical approaches and strategies, as well as the presence of university administration that can shape the development of an entrepreneurial mindset (Trotte, 2021).

The global healthcare industry is extensive and projected to expand, with its market anticipated to surpass \$7,500 billion by 2022 and exceed \$10,000 billion by 2026 (Reportlinker, 2022). Entrepreneurship in healthcare is crucial for the economy, as healthcare businesses have a prominent role in driving transformative changes in both the public and private healthcare sectors. This has led to the establishment of numerous new start-ups. Nevertheless, the proportion of entrepreneurial nurses is merely 0.5%–1% among the total number of employed nurses worldwide. This indicates a significant opportunity for entrepreneurship within the nursing field, given the high demand for healthcare services and the ability of nurses to meet these demands (Jakobsen et al., 2021).

In addition, nurses face global shifts in the healthcare sector, the nursing field, and novel prospects for innovation. These opportunities facilitate nurses' personal and professional growth by enabling them to establish enterprises or innovate new equipment for patient care (Thepna et al., 2023).

Aim of the Study:

This study aimed to examine the relationship between Entrepreneurship Head Nurses' Characteristics and their Leadership Practices at Minia University Hospitals.

Research Questions:

1. Are head nurses having the entrepreneurship characteristics at Minia University hospitals?

2. Are head nurses having the leadership practices at Minia University hospitals?

3. Is there a relationship between Entrepreneurship Head Nurses' Characteristics and their Leadership Practices at Minia University Hospitals?

Subjects and Methods:

Research design:

A descriptive correlational research design was used in this research.

Setting:

This study was conducted at all Minia University hospitals (university hospital, cardiothoracic, obstetric & pediatric, kidney disease hospital, and liver hospital).

Subjects:

A convenient sample was used. The study subjects consisted of all head nurses working in Minia University hospitals. Their total was 85 distributed (university hospital no. 33, cardiothoracic no. 15, obstetric & pediatric no. 16, kidney disease hospital no. 11, and liver hospital 10).

Data collection tools

Data were collected by using two tools as following:

Tool (I): Entrepreneurship characteristics Questionnaire: This tool was developed by (Wardan et al., 2020) and modified by the researcher. It was used to assess head nurses' characteristics about entrepreneurship. It was classified into two parts. Part 1 was about the Personal data of the respondents. Part 2 was about the Entrepreneurship characteristics of head nurses.

Part 1: Personal Data: It was used to collect data about head nurses' items, such as the hospital's name, unit, age, gender, educational qualification, marital status, job position, and years of experience in the current job.

Part 2: Entrepreneurship characteristics Questionnaire: is designed

to evaluate the specific attributes associated with entrepreneurship. The inventory comprises 42 items that are classified into seven dimensions: Initiative (6 items), independence and responsibility (6 items), self-confidence (6 items), need for achievement (6 items), creativity (6 items), and self-control (6 items).

The Scoring system:

The characteristics of entrepreneurship items were assessed using a five-point Likert scale, ranging from 5 (strongly agree) to 1 (strongly disagree). Each area was evaluated based on the strongly agree, agree, neutral, disagree, and strongly disagree responses. The scores of the items were added together and then divided by the number of items to calculate the mean score for entrepreneurship. In order to determine the cut-off point, the median value of 178.0 was calculated and divided by the total score of the entrepreneurship questionnaire, which was 210. This calculation yielded a result of 0.847. This score was converted into a percentage, resulting in a cut-off point of 85%. If a subject's percentage score was 85% or higher, they were considered to have entrepreneurship. Conversely, if their percentage score was less than 85%, they were considered not to have entrepreneurship.

Tool (II): Leadership Practices Inventory (LPI): This tool was developed by (Kouzes & Posner, 2013) and modified by the researcher. It was used to evaluate the leadership behavior of head nurses. It consists of 30 items, which are categorized into five dimensions, namely: Inspire a shared vision statement (6 items); modeling the way (6 items); enable others to act (6 items); Challenge the process (6 items); and Encourage the heart (6 items) and was measured by using 5 points Likert scale as (strongly disagree 1, disagree 2, neutral 3, agree 4, strongly agree 5).

The Scoring system:

The minimum score for each dimension is 6, while the maximum score is 30. The overall scores range from 30 to 150. If a participant's score is close to the maximum, it indicates a frequent display of Total Leadership practices. Conversely, if the score is close to the

minimum, it suggests a rare display of Total Leadership practices and room for improvement.

Validity of the tool:

Each expert panel evaluated each tool based on its content validity, clarity, coverage, phrasing, length, format, applicability, and overall appearance. The tools were showcased to a panel of 5 members consisting of nursing and education professionals in the administration. No modification was implemented.

Reliability of the tool:

Reliability testing was conducted to ensure the consistency of the tools. Internal consistency was assessed to determine the extent to which the tool's components accurately measured their intended constructs. In addition, the Cronbach alpha test was used to evaluate the tool's reliability. The results indicated that the entrepreneurship characteristics and leadership practice levels had high reliability, with coefficients of 0.961 and 0.901, respectively.

Pilot study:

Before starting the fieldwork, a pilot study was conducted on nine head nurses, who accounted for 10% of the total study participants, to evaluate the efficacy and comprehensibility of the instruments' components. The estimated time required to complete each sheet using the tools was 15 minutes. The pilot study confirmed that the tools were suitable and required no modifications. Consequently, they were incorporated into the outcomes.

Fieldwork:

Data was gathered from various head nurses during their work shifts all shifts and allocated questionnaires for them to complete.

The time needed to complete the head nurses' questionnaire was 15-20 minutes. The study was collected from head nurses within one month, from 1st October 2023 to 31st October 2023.

Ethical Consideration:

The Faculty Dean and the Ethical Committee of Research sent an official letter. The participants gave verbal consent after being informed about the study's objectives before conducting the main and pilot studies. The participants in the study possess the capacity to refuse participation or withdraw from the research at any point without having to provide reasons. Data collection was conducted with consideration for the privacy of the study participants. The participants were guaranteed that their information would be kept confidential, and their

privacy was protected by assigning each nursing student a number instead of using their names.

Statistical analysis:

The data obtained were tabulated, computerized, scrutinized, and summarized using SPSS version 25 to evaluate the study inquiries. Qualitative data was expressed using frequency and percentage. A significance level of less than 0.05 was considered significant, with the probability (P-value) serving as the significance indicator. The statistical tests employed to analyze numerical data included the chi-square test, Fisher exact test, and correlation analysis.

Results:

Table (1): shows that more than forty (42.4%) of head nurses fall in the age group 28-33 years with mean age of 34.9 ± 4.0 years, It was illustrated that, the majority (76.5%) of head nurses were females. The majority of them had bachelor degree which represent (81.2%). Regarding their years of experience, more than half (57.6%) of head nurses had 1 - \leq 5 year of experience with the mean 5.6 ± 3.5 . Regarding unit , more than forty (45.9%) of head nurses were working in Critical care unit, 41.2% working in General wards and 12.9 % working in Emergency.

Figure (1) illustrates that more than two-thirds of the studied head nurses have initiative, self-confidence, independence, creativity, and total entrepreneurship. Also, the majority of the studied head nurses have self-control, and more than half have needed achievement.

Figure (2) illustrates that the majority of the studied head nurses have shared vision, challenges, encouragement, and total leadership practices inventory. Also, more than three-quarters of the studied head nurses have modeled and enabled others.

Table (2) presents no statistically significant differences between hospital name, different units, age, gender, qualifications, marital status, nursing experience, and unit experiences with total entrepreneurship level.

Table (3) presents that all studied head nurses with master degrees have leadership practices inventory than other qualifications with statistically significant differences which P – value < 0.025 . On the other hand, no statistically significant differences between hospital name, different unit, age, gender, marital status, nursing experience, and unit experiences with total leadership practices inventory level

Table (4): Demonstrates that positive association between total entrepreneurship of the studied head nurses and leadership practice inventory (r=0.526, P – value < 0.05).

Table (1): Distribution of personal characteristics of the studied head nurses (n = 85)

Items	NO.	%
Hospital names		
Minia university hospital	33	38.8
Cardio chest hospital	15	17.6
Urology	11	13.0
Obstetric and pediatric hospital	16	18.8
Hepatic hospital	10	11.8
Unit		
Emergency	11	12.9
Critical care unit	39	45.9
General wards	35	41.2
Age/ years		
28 – ≤ 33	36	42.4
34 – ≤ 38	30	35.2
39 – 43	19	22.4
Mean ± SD	34.9 ± 4.0 years	
Gender		
Male	20	23.5
Female	65	76.5
Qualifications		
Technical	11	12.9
B.S.C	69	81.2
Master	5	5.9
Marital status		
Single	9	10.6
Married	76	89.4
Experience / Years		
1 - ≤ 5	9	10.5
6 - ≤ 10	31	36.5
11 - ≤ 15	31	36.5
16- 20	14	16.5
Mean ± SD	11.2 ± 4.4	
Unit experience / Years		
1 - ≤ 5	49	57.6
6 - ≤ 10	32	37.6
11 - ≤ 15	2	2.4
16- 20	2	2.4
Mean ± SD	5.6 ± 3.5	

Figure (1): Distribution of the Head nurses Entrepreneurship Level and its Domains among Head nurses (n= 85).

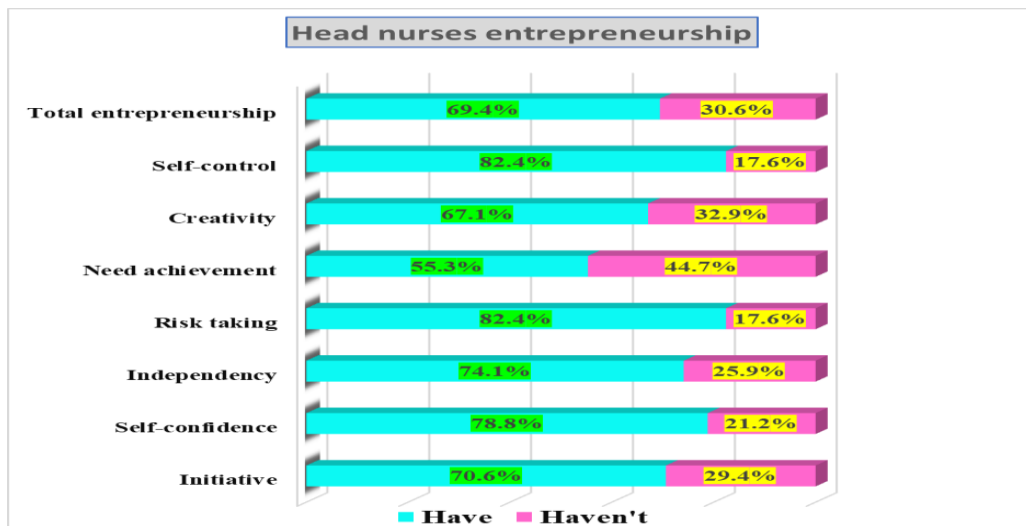


Figure (2): Distribution of the Head nurses Leadership Practices Inventory Level and its Domains among Head nurses (n= 85).

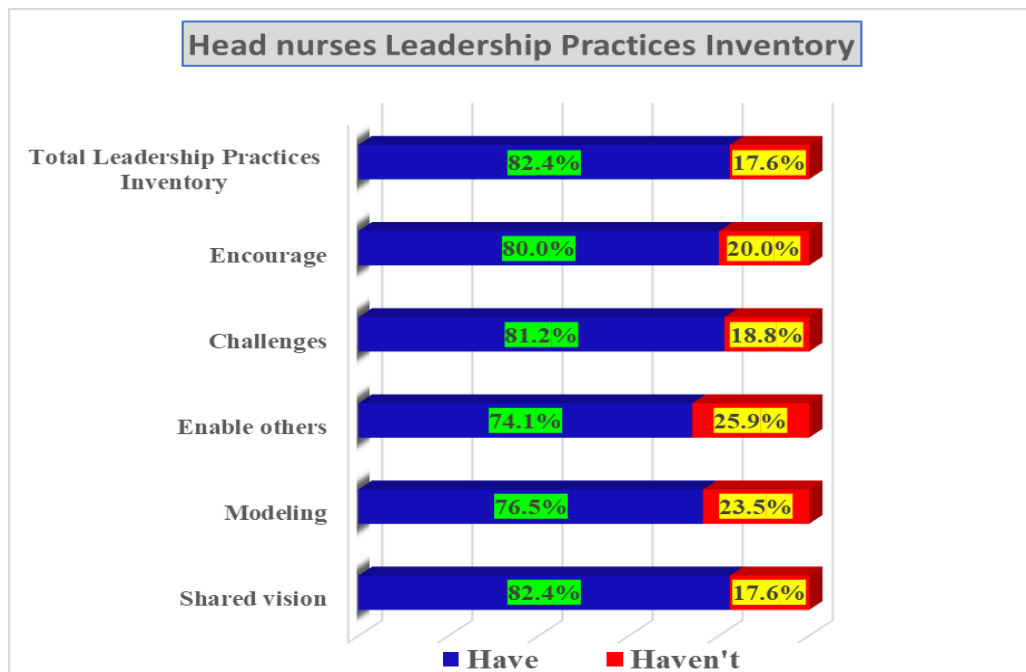


Table (2): Relation between personal characteristics of the studied head nurses and total entrepreneurship level (n = 85)

Items	NO.	Total entrepreneurship				Test of significance	
		Have entrepreneurship		Haven't entrepreneurship		X ²	P value
		No.	%	No.	%		
Hospital names							
Minia university hospital	33	20	60.6	13	39.4	4.468	0.346
Cardio chest hospital	15	11	73.3	4	26.7		
Urology	11	9	81.8	2	18.2		
Obstetric and pediatric hospital	16	10	62.5	6	37.5		
Hepatic hospital	10	9	90.0	1	10.0		
Unit							
Emergency	11	9	81.8	2	18.2	2.328	0.312
Critical care unit	39	24	61.5	15	38.5		
General wards	35	26	74.3	9	25.7		
Age/ years							
28 – ≤ 33	36	26	72.2	10	27.8	0.249	0.883
34 – ≤ 38	30	20	66.7	10	33.3		
39 – 43	19	13	68.4	6	31.6		
Gender							
Male	20	17	85.0	3	15.0	2.993	0.084
Female	65	42	64.6	23	35.4		
Qualifications							
Technical	11	9	81.8	2	18.2	2.674	0.242
B.S.C	69	48	69.6	21	30.4		
Master	5	2	40.0	3	60.0		
Marital status							
Single	9	7	77.8	2	22.2	0.332	0.565
Married	76	52	68.4	24	31.6		
Experience / Years							
1 - ≤ 5	9	7	77.8	2	22.2	0.546	0.909
6 - ≤ 10	31	22	71.0	9	29.0		
11 - ≤ 15	31	21	67.7	10	32.3		
16- 20	14	9	64.3	5	35.7		
Unit experience / Years							
1 - ≤ 5	49	32	65.3	17	34.7	2.243	0.523
6 - ≤ 10	32	23	71.9	9	28.1		
11 - ≤ 15	2	2	100.0	0	0.0		
16- 20	2	2	100.0	0	0.0		

Percentage calculated by raw

Table (3): Relation between personal characteristics of the studied head nurses and total leadership practices inventory level (n = 85)

Items	NO.	Total Leadership Practices Inventory				Test of significance	
		Have LPI		Haven't LPI		X ²	P value
		No.	%	No.	%		
Hospital names							
Minia university hospital	33	31	93.9	2	6.1	Fisher 7.975	0.092
Cardio chest hospital	15	13	86.7	2	13.3		
Urology	11	8	72.7	3	27.3		
Obstetric and pediatric hospital	16	12	75.0	4	25.0		
Hepatic hospital	10	6	60.0	4	40.0		
Unit							
Emergency	11	8	72.7	3	27.3	0.845	0.655
Critical care unit	39	33	84.6	6	15.4		
General wards	35	29	82.9	6	17.1		
Age/ years							
28 – ≤ 33	36	28	77.8	8	22.2	1.201	0.548
34 – ≤ 38	30	25	83.3	5	16.7		
39 – 43	19	17	89.5	2	10.5		
Gender							
Male	20	15	75.0	5	25.0	0.973	0.324
Female	65	55	84.6	10	15.4		
Qualifications							
Technical	11	6	54.5	5	45.5	Fisher 7.397	0.025*
B.S.C	69	59	85.5	10	14.5		
Master	5	5	100.0	0	0.0		
Marital status							
Single	9	7	77.8	2	22.2	Fisher 0.145	0.703
Married	76	63	82.9	13	17.1		
Experience / Years							
1 - ≤ 5	9	6	66.3	3	33.3	Fisher 2.698	0.441
6 - ≤ 10	31	25	80.6	6	19.4		
11 - ≤ 15	31	26	83.9	5	16.1		
16- 20	14	13	92.9	1	7.1		
Unit experience / Years							
1 - ≤ 5	49	41	83.7	8	16.3	Fisher 1.310	0.727
6 - ≤ 10	32	25	78.1	7	21.9		
11 - ≤ 15	2	2	100.0	0	0.0		
16- 20	2	2	100.0	0	0.0		

Percentage calculated by raw * statistically significant differences at 0.05

Table (4): Correlation between selected personal characteristics of the studied head nurses with total entrepreneurship and leadership practice inventory (n = 85)

Items		Total entrepreneurship	Total Leadership Practices Inventory
Age	r	0.145	-0.142-
	P - value	0.185	0.196
Qualification	r	0.164	-0.123-
	P - value	0.133	0.262
Experience	r	0.109	-0.131-
	P - value	0.322	0.232
Unit experience	r	-0.008-	-0.104-
	P - value	0.942	0.345
Total Leadership Practices Inventory	r	0.526	1
	P - value	0.050*	

Discussion

The present study aims to examine the relation between entrepreneurship and leadership practices among head nurses at Minia university hospitals through assess the characteristics of entrepreneurship among head nurses, assess leadership practices among head nurses and find out the relation between entrepreneurship and leadership practices among head nurses.

The research aimed to examine the relationship between entrepreneurship head nurses' characteristics and leadership practices. The result showed that more than forty of head nurses falls in age group 28-33 years with mean age 34.9 ± 4.0 years, the majority of them were females, and the majority of them had bachelor's degree which represent (81.2%). Regarding their years of experience, more than half of head nurses had 1 - ≤ 5 year of experience with the mean 5.6 ± 3.5. Regarding unit, more than forty (45.9%) of head nurses were working in critical care unit, 41.2% in general words and 12.9 % in emergency.

This finding is consistent with **Osabutey, (2018)** also reported that most of their participants were females and Most (87.9%) had Bachelor's degrees.

Regarding the characteristics of entrepreneurship among head nurses, the research showed that, more than two-thirds of the studied head nurses have initiative, self-

confidence, independence, creativity, and total entrepreneurship. Also, the majority of the studied head nurses have self-control, and more than half have needed achievement. This indicates that those head nurses actively look for and analyze information and take the initiative to create new or enhance existing situations and generate fresh, practical ideas.

These findings align with the results of **Nametallh et al., (2022)** which indicated that over fifty percent of head nurses exhibited a high level of perception towards entrepreneurial leadership.

Furthermore, in line with the discoveries made by **Dehghanzadeh et al., (2016)**, it was determined that a significant portion of the nurses possess moderate entrepreneurial skills. **Afsar et al., (2017)** found that survey participants had a favorable perception of the role of entrepreneurial leadership and recognized its significance.

This study contradicts the findings of **Wardan et al., (2020)** regarding the correlation between entrepreneurship and work innovation. The findings suggest that approximately 50% of nurse managers lack entrepreneurial traits.

Regarding the leadership practices among head nurses, the current study's finding showed that the majority of the studied head nurses have shared vision, challenges, encouragement, and total leadership practices inventory. Also, more than three-quarters of the

studied head nurses have modeled and enabled others.

The results align with the findings of **Demir & Duygulu (2022)**, which demonstrated that the Unit Charge Nurses exhibited leadership practices with scores that were near the maximum limit, both in terms of total scores and sub-dimensions.

The results of this study are consistent with research done in Turkey, where staff nurses' and nurse managers' perceptions of overall leadership practices were classified as either high **Yilmaz & Duygulu, (2021)** or moderate **Sarikose & Turkmen, (2020)**. Furthermore, **Abualrub and Nasrallah (2017)** discovered that the perceptions of staff nurses and nurse managers regarding total leadership practices were rated as moderate.

Regarding relation between personal characteristics of the studied head nurses and total entrepreneurship level, the study showed no statistically significant differences between hospital name, units, age, gender, qualifications, marital status, nursing experience, and unit experiences with total entrepreneurship level.

These results align with the findings of **Dubey & Sahu, (2022)** which demonstrated no statistically significant correlation between age and occupation in relation to students' entrepreneurial intention. Furthermore, in line with **Nguyen's (2021)** findings, it was determined that there is no substantial correlation between age demographics and entrepreneurial intention.

These findings contradicted the results of **Sajilan et al., (2015)** who found a positive correlation between the demographic and personal characteristics of entrepreneurs and the performance of their firms.

Regarding to relation between personal characteristics of the studied head nurses and total leadership practices inventory level, the present study showed that all studied head nurses with master degrees have leadership practices inventory than other qualifications with statistically significant differences which $P - \text{value} < 0.025$. On the other hand, no

statistically significant differences between hospital name, different unit, age, gender, marital status, nursing experience, and unit experiences with total leadership practices inventory level.

The results align with the findings of **Younes et al., (2020)** who discovered a strong and statistically significant correlation between the qualification of nurse managers and their overall leadership practices ($t=16.07$; $p<0.000^{**}$). Similarly, **Alaqeel, (2022)** reported no significant associations between... demographic factors (gender, age, marital status) and the leadership skills.

Regarding the correlation between selected personal characteristics of the studied head nurses with total entrepreneurship and leadership practice inventory, the current study showed a positive association between total entrepreneurship of the studied head nurses and leadership practice inventory ($r=0.526$, $P - \text{value} < 0.05$).

The results align with the findings of **Alaqeel, (2022)** who demonstrated that the key leadership skills associated with entrepreneurial business success are self-assurance, sound decision-making, resolute pursuit of objectives, proficient communication, and flexibility in response to market conditions. These skills have enabled entrepreneurs in Saudi Arabia to establish and maintain businesses for more than five years.

In addition, the study conducted by **Mgeni, (2015)** revealed a noteworthy and robust positive relationship between entrepreneurial leadership style and the business performance of small and medium-sized enterprises in Tanzania.

Conclusion

Head nurses at Minia University Hospitals had initiative, self-confidence, independence, creativity, and total entrepreneurship. Also, the majority of the studied head nurses had self-control, and more than half had needed achievement.

Head nurses had shared vision, challenges, encouragement, and total leadership practices inventory. Also, more than three-

quarters of the studied head nurses had modeled and enabled others.

There was positive association between head nurses total entrepreneurship and their leadership practices.

Recommendations

The following suggestions are put forth in light of the study's findings and the literature review:

A- Nurse Managers

- Engage staff nurses in creating a shared future, listening to their goals and objectives, through asking them about their aspirations and goals for the future and finding the shared goals need to achieve.

B- Nursing Faculties and Healthcare organizations:

- Provide workshop and programs include the importance of entrepreneurship and leadership practices to provide the hospital with effective leaders.
- Policymakers should provide support and improve policies that encourage young and innovative entrepreneurs to succeed in nursing.
- Providing young nurses entrepreneurs with incubation programs and innovative centers to encourage new businesses to open.
- Establishing more entrepreneurship and leadership development programs .
- Including entrepreneurship courses in nursing students' curricula prepares them to be nurses' entrepreneurs.

Limitations:

The study was conducted exclusively among head nurses from a single governorate at Minia University hospitals, limiting its generalizability.

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