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# The Effect of Entrepreneurship Program on Entrepreneurship Tendency among Nurses

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*Abstract:* Background: Entrepreneurship is viewed as a catalyst for the development of many countries' economies. Also, increase the visibility of the nursing profession and create new spaces for nurses. Aim: The present study aims to evaluate the effect of entrepreneurship program on entrepreneurship tendency among nurses. Study Design: Quasi-experimental study design was used. Setting: The study was conducted at Ain shams Medical Hospital University. Sample: A convenient sample composed of (50) staff nurses. Tools: Data was collected using nursing entrepreneurship knowledge questionnaire ,General measure of Entrepreneurship Tendency (GET) and evaluation of nurses'entrepreneur reported skills .Results: High statistically significant differences regarding staff nurses' knowledge, nurses'entreprenur skills and entrepreneurship tendency pre, post and follow-up three months post implementation of the program with P value (0.000). Conclusion: All staff nurses who attended the designed training program showed a relative improvement in knowledge, entreprenur' skills and tendency regarding nursing entrepreneurship post and follow-up phase as compared to preprogram phase which supported the study hypothesis. Recommendation: Adress entrepreneurship subject into undergraduate nursing courses and Provide training programs , seminar and conferences about entrepreneurship particularly in healthcare field specially for nurses.

Keywords: Entreprenureship training, Entreprenure nurse, Entreprenur skills, Entreprenureship tendency.

# 1. INTRODUCTION

Today, it is extremely important to investigate the idea of entrepreneurship. Entrepreneurship is viewed as a catalyst for the development of many countries' economies (1). Entrepreneurship have a great impact on economic growth as a result, which will lead to prosperity and may have an impact on the wealth, living standards and well-being of populations (2). Entrepreneurship has been considered in connection with development and has been recognized as a driving force to mobilize human, financial and physical resources to initiate business ideas, start and grow businesses and create jobs (3).

Entrepreneurship can be defined from two perspectives individual and organizational perspective. From the individual's perspective, it can be defined as the creativity ability of the individual exhibited inside or outside the organization which meaning that it is the ability to generate creative ideas and cosidered as a behavioral characteristic of a person (4). From the perspective of the organization, entrepreneurship implies decision and policy making in a manner that achieve goals and objectives of the enterprise to ensure effectiveness and efficiency so as to reduce risk of loss of investment (5).

In the healthcare field, entrepreneurship is important for the development of new technologies and the production of new scientific knowledge which reflected on improvements of the quality of care provided to patients in different care settings. Despite being a promising and essential area, entrepreneurship in the field of health is still a challenge because in general

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health professionals have technical training in their area of expertise which does not incorporate the principles of entrepreneurial education which sometimes limits the possibilities of innovation due to not having adequate knowledge, added to the lack of time and the exhausting working hours (6).

The entrepreneurial tendency is necessary for the start of entrepreneurial activities and directed by individual entrepreneurial behavior. In other words, this tendency describes the mental state which leads the individual's experience and actions towards a business idea. The degree to which an individual displays such entrepreneurial behaviors and tendencies might reveal whether the person will be an entrepreneur or not. The entrepreneurial tendency is the first step for the entrepreneur to realize his/her ideas and vision. The processes of business plan development, reaching goals and objectives begin with this trend. So, entrepreneurship starts with the entrepreneurial tendency (7). Entrepreneurship training leads to the improvement of entrepreneurial knowledge ,skills, qualities and behaviors. It is necessary to include the entrepreneurial knowledge and skills that nurses need to lead and respond to the changing entrepreneurial environment .So,enhance a person's knowledge and skills level, entrepreneurial ability and the tendency toward entrepreneurial action (8).

#### Significance of the Study

Worldwide, There are 582 million entrepreneurs. According to the Global Entrepreneurship Monitor (GEM) 2020-2021 report, the early stage entrepreneurial activity rate was **18.3%** of the total population.

In Egypt, the early stage entrepreneurial activity rate was **7.4%** of adult population (aged 18-64) and decreased in 2021 to **9.2%** from **11.3%** in 2020 due to a lack of entrepreneurial knowledge, experience and skills. The solution to develop nurses' entrepreneurship is to increase knowledge, skills, training, and experience of nursing entrepreneurs.

The training programs about nursing entrepreneurship and its contribution to healthcare system prepare qualified nurses for entrepreneurial roles and increase tendency toward nursing entrepreneurships activities which in turn lead to expanding healthcare to underserved populations and result in improved quality of life for the population while maintaining the high-quality care functions at the heart of nursing.

## Aim of the study

The aim of this study was to evaluate the effect of entrepreneurship program on entrepreneurship tendency among nurses through:

- 1- Assess nurses 'knowledge about entrepreneurship in nursing.
- 2- Assess nurses 'entrepreneurship tendency before training program.
- 3- Design entrepreneurship program for nurses.
- 4- Implement entrepreneurship program for nurses.
- 5- Evaluate the effect of entrepreneurship program on nurses' entrepreneurship tendency.

#### **Research hypothesis**

Training program about entrepreneurship will improve entrepreneurship tendency among nurses.

#### Research design

Quasi-experimental study design was used in this study.

#### **Research setting**

The study was conducted at Medical Ain shams Hospital University.

## Subjects

A convenient sample composed of (50) staff nurses in the previous mentioned hospital. The inclusion criteria were nurses who had bachelor degree in nursing, at least two years of experience in nursing profession and not attended previous training about entrepreneurship.

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# Tools of data collection

Three tools were used to collect study data as follows:

# Tool I: Nursing entrepreneurship knowledge Questionnaire

It consisted of two parts:

#### Part 1: Personal data

This part included personnel data for staff nurses as (age, gender, hospital department, monthly income and years of experience....etc).

## Part two: Nursing entrepreneurship knowledge Questionnaire

It was developed by the researcher based on reviewing the relevant literature guided by (Henry and Lewis, 2018; Garaika et al., 2020 & Lim et al., 2021). It aimed to assess nurses' knowledge regarding the entrepreneurship pre / post and follow up after three months of the program implementation.

It included multiple choice questions included for example definition, purpose, benefits and barriers of entreprenurship. It included (26) questions.

#### Scoring system:

**The score for each item** ranging from (1) incorrect to (2) correct. The total score (52). Scoring system ranged between (26-52). The final score was classified as:

- Satisfactory level >60% > (31-52 degree)
- Unsatisfactory level  $\leq 60\% \leq (26-31 \text{ degree})$

## Tool II: General measure of Entrepreneurship Tendency (GET)<sup>:</sup>

It was developed by (*Caird*, 2013) in the Durham University Business School and modified by the researcher to measure entrepreneurship tendency for nurses at previously mentioned hospital. It consisted of (54) items arranged in five dimensions:

(a) Need for achievement (12 items), (b) Need for Autonomy/Independence (6 items), (c) Creative tendency (12 items), (d) Calculated Risk taking (12 items) and (e) Locus of control (12 items).

#### Scoring system:

The score for each item was measured on three points Likert scale ranging from (1-3), (3) refers to agree, (2) refers to neutral and (1) refers to disagree. The total score (162). Scoring system ranged between (54-162). It was calculated according to three levels:

- High level >75-100% (>121-162 degree)
- Moderate level  $\geq 60-75\%$  ( $\geq 97-121$  degree)
- Low level  $\leq 60\%$  ( $\leq 54$  -97 degree )

## Tool III: Evaluation of Nurses'Entrepreneur Reported Skills

It was developed by (**Mamabolo and Myres, 2019**) then modified by the researcher. It was used to determine entrepreneur skills among nurses. It consisted of (27) items.

# Scoring system:

The score for each item was measured on three points Likert scale ranging from (1-3), (3) refers to Yes, (2) refers to To some extent and (1) refers to No. The total score (81). Scoring system ranged between (27-81). It was calculated according to three levels:

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- High level >75-100% (>60-81 degree)
- Moderate level  $\geq 60-75\%$  ( $\geq 48-60$  degree)
- Low level  $\leq 60\%$  ( $\leq 27-48$  degree )

# Tools validity

The three tools were translated into Arabic and tested by three experts in nursing administration field. Face and content validity for the study tools were done. Accordingly, the necessary modifications were done.it was ascertained by a jury group of experts specialized in nursing administration from three different universities, Cairo university, Tanta university and port-Saied University.

## **Reliability of the tools:**

To assess reliability, the study tools were tested by the pilot subjects at first time and retested after 2weeks as test-retest reliability for calculating Cronbach's Alpha coefficient test, which revealed that each of the three tools consisted of relatively homogenous items as indicated high reliability of each part of the tool. For nursing entrepreneurship knowledge was 0.95, nurses 'entrepreneur reported skills was 0.889 and general measure of entrepreneurship tendency was(0.860).

## **Pilot study:**

It was conducted at the beginning of the study. On (5) staff nurses (10% of total sample) to test the applicability, clarity of language, the feasibility and suitability of tools and estimate the time needed to complete the questionnaires.

Collecting pilot study data lasts for three weeks. The time needed to fulfill nursing knowledge ranged between (30-35) minutes. While evaluation of nurses' entrepreneur reported skills it was ranged between (25-30) minutes and finally general measure of entrepreneurship tendency tool it was ranged between (20-30) minutes. Subjects included in the pilot study were included in the actual study sample because there was no modification.

## Fieldwork

Prior to data collection, the researcher met the nursing director to explain the aim and nature of the study, this was done to facilitate data collection and gain the approval for data collection. The actual field work started at the beginning of November 2022 and was completed by the end of October 2023. The researcher arranges for meeting every nurse by referred to nursing supervisor of each unit and asked for a copy of nurse's schedule to obtain data about the number of nurses available and who met the previous mentioned inclusion criteria. The three tools were handed individually or in a group in different shifts and were collected in the same day. The researcher was present all the time during fulfilling forms to answer any questions.

The current study was carried out in four phases including, assessment phases, designing phase, implementation phases and evaluation phases.

## **I-Assessment phase**

The researcher started to collect data using developed tools with selected sample participants in previous mentioned setting according to the available time for each one after explaining to them the purpose of the study.

First the researcher used nursing knowledge pre-test to assess nurses' knowledge about nursing entrepreneurship, general measure of entrepreneurship tendency and evaluation of nurses'entrepreneur reported skills this was lasted for one month. The researcher assessed three previous mentioned tools in the morning and afternoon shift. The suitable time was prepared for conducting the sessions based on consultation with the nursing director.

## **II-Designing phase**

In this phase the researcher design staff nursing program.

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# **III-Implementation phase**

In this phase the researcher implement entrepreneurship training program for nurses. The study sample classified to four sub-groups each sub-group composed of 12 or13 staff nurses. The program took 8 weeks for all groups divided as one day/week .Each day consist of two sessions and break in between and two hours/day from (10am-12am) for each session .This was determined by the director and each session was attended by 12 or 13 nurses who were selected according to unit workload and included criteria and their work schedule (48 theoretical hours and 16 practical hours) allowed for achieving the program objectives.

At the beginning of the first session an orientation of the training program and its aim took place. Feedback was given in the beginning of each session about the previous one. Handouts were distributed as appropriate to staff nurse. The researcher met the staff nurses to explain the purpose and the benefits of the study. Knowledge questionnaire was distributing to nurses for two weeks. In the beginning, the entreprenurship knowledge tool was distributing to nurses for one week ,general measure of entrepreneurship tendency tool was distributing to nurses for one week and finally evaluation of nurses'entrepreneur reported skills tool was distributing to nurses for one week.

Twelve theoretical sessions and four practical sessions. It was implemented on all studied sample (N=50). The theoretical part included as example, definition of entrepreneurship, benefits, barriers of entreprenurship. Practical part classified into four sessions for all groups of nurses including application of entrepreneurial skills and demonstration of entrepreneurial activities as examples for entrepreneurship in nursing.

# **IV- Evaluation phase**

The training program was evaluated to determine the extent to which staff nurses changed their knowledge, skills and tendency related to nursing entrepreneurship. Staff nurses were evaluated after implementation of the program through:

**Immediate evaluation:** Following application of the program, staff nurses were given nurse's knowledge questionnaire (Tool 1) to assess nurses' knowledge regarding nursing entrepreneurship. General measure of entrepreneurship tendency (Tool 2) to measure entrepreneurial tendency among nurses. Finally, evaluation of nurses'entrepreneur reported skills (Tool3) to assess nurses' entrepreneurs skills among nurses.

**Follow up post program:** Reassessment was done after three-month later post program. The researcher used (Tool 1), (Tool 2) and (Tool 3) to ensure that staff nurses improve their knowledge regarding nursing entrepreneurship, improve of nurses' entrepreneurs skills and entrepreneurial tendency

## **Ethical considerations:**

The research approval was obtained from scientific ethical research committee at faculty of nursing, Helwan University .Before starting the study the researcher assured anonymity and confidentiality of the subject's data, staff nurse were allowed to choose to participate or not in the study and that they have the right withdraw from the study at any time, ethics values, cultures and behaviors were respected. Study subjects were informed about study purpose and informed consents were obtained.

## Statistical analysis:

Data collected from the studied sample were revised, coded and entered using P C. Computerized data entry and statistical analysis were fulfilled using the statistical package for social sciences (SPSS) version (23). Data were presented using descriptive statistics in the form of frequencies, percentage. The Comparison between groups with qualitative data was done by using Chi-square test. The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, P-value  $\leq 0.05$  was considered significant, P-value  $\leq 0.001$  was considered as highly significant and P-value >0.05 was considered insignificant.

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# 2. RESULTS

Table (1): Frequency and percentage distribution of staff nurses personal data (N=50).

Personal data	No.	%							
Gender									
Female	38	76							
Male	12	24							
Age (years)									
25-<30 years	27	54							
30-<35 years.	13	26							
35-45 years	10	20							
Mean±SD	30.56±5	5.20							
Hospital department									
ICU	20	40							
Ward unit	30	60							
Years of experience (years)									
<5 years	27	54							
5-<10 years	13	26							
≥10 years	10	20							
Mean±SD	7.88±4	.54							
Monthly income									
Insufficient	45	90							
Sufficient	5	10							
Previous training about entrepreneurship									
Yes	0	0							
No	50	100							

The table shows that (76%) of study sample were female and (24%) were males. Pertaining to age of the study sample mean and standard deviation was  $(30.56\pm5.20)$  and (54%) of them had from 25 to less than 30 years old and (20%) of them had 35 - 45 years old. Mean and standard deviation for years of experience was  $(7.88\pm4.54)$  and (54%) of study sample had years of experience less than 5 years, and (20%) of them had less than or equal 10 years of experience.

Also, (60%) of the study sample were worked at in-patient wards. While, (40%) of them were worked at ICU. According to monthly income (90%) of the study sample had insufficient income. Whereas (10%) of them had sufficient income. Pertaining to previous training about entrepreneurship (100%) of study sample had not attend previous training about entrepreneurship.

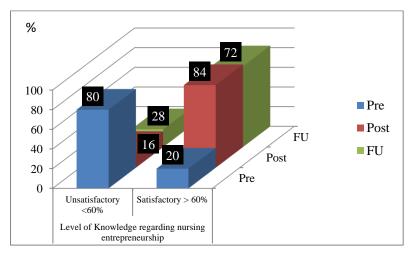


Figure (1): Percentage distribution of staff nurses' total knowledge level about nursing entrepreneurship pre / post and follow up the implementation of the training program (N=50).

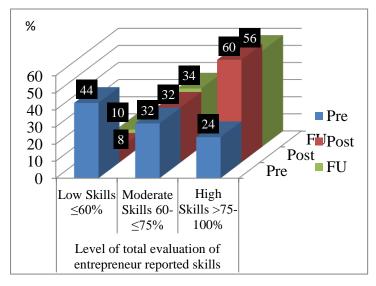
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The figure illustrate that (20%) of staff nurses' total knowledge level about nursing entrepreneurship was satisfactory level pre implementation of training program. While it was (84% &72%) at post and follow up phases respectively.

 Table (2): Mean percentage of staff nurses' knowledge about nursing entrepreneurship pre / post and follow up the implementation of the training program (N=50).

Knowledge		_			Paired sam	ple t-test	
regarding nursing	Pre	Post Drogram	Follow	Pre-	Post	Pro	e-FU
entrepreneurship	Program	Program	up	t-test	p-value	t-test	p-value
Mean %	6.22	22.98	17.48	4.771	0.027*	3.598	0.032*

The table clarifies that the highest mean percentage of staff nurses' knowledge about nursing entrepreneurship was (22.98% & 17.48%) post and follow up implementation of the training program respectively. While, the lowest mean percentage was (6.22%) pre implementation of the training program.



# Figure (2): Percentage distribution of the staff nurses' total levels of nurses'entrepreneur reported skills Pre, Post and follow up the implementation of the program (N=50).

The figure shows that (24%) of studied staff nurses had high level of nurses'entrepreneur reported skills, while (32%) of them had moderate level and (44%) of them had low level at pre implementation of the training program. Furthermore, (60%) of staff nurses had high level of nurses'entrepreneur reported skills, while (32%) of them had moderate level and (8%) of them had low level at post implementation of the training program. Finally, (56%) of staff nurses had high level of nurses'entrepreneur reported skills, while (34%) of them had moderate level and (10%) of them had low level at follow-up phase after three months post implementation of the training program.

# Table (3): Mean percentage of staff nurses' entrepreneur reported skills pre / post and follow up the implementation of the training program (N=50).

	D				Paired sa	mple t-test		
	Pre Program	Post Program	Follow up	Pre	-Post	Pro	e-FU	
	Trogram	1 logi am			t-test	p-value	t-test	p-value
Mean %	7.23	28.04	23.84	5.771	0.041*	4.598	0.011*	

The table clarifies that the highest mean percentage of staff nurses' entrepreneur reported skills was (**28.04% & 23.84%**) post and follow up implementation of the training program respectively. While, the lowest mean percentage was (**7.23%**) pre implementation of the training program. **Moreover**, there was statistical significant difference between nurses'entrepreneur reported skills at pre / post and follow-up phases post implementation of the program (p<0.001).

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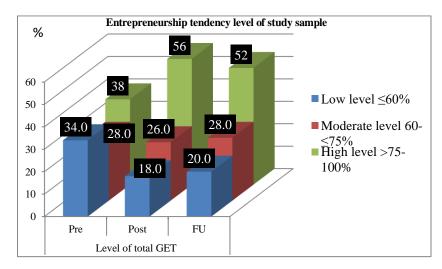


Figure (3): Percentage distribution of the staff nurses' total levels of general measure of entrepreneurship tendency Pre, Post and follow up the implementation of the of the training program (N=50).

The figure shows that (34%) of studied staff nurses had high level of entrepreneurship tendency pre implementation of the training program. While (28%) of them had moderate level and (38%) of them had low level of entrepreneurship tendency. Furthermore, regarding post about (56%) of studied staff nurses had high level, while (26%) of them had moderate level and (18%) of them had low level of entrepreneurship tendency. Finally, (52%) of studied staff nurses had high level, while (28%) of them had moderate level and (20%) of them had low level of entrepreneurship tendency. Finally, (52%) of studied staff nurses had high level, while (28%) of them had moderate level and (20%) of them had low level of entrepreneurship tendency at follow-up phase after three months post implementation of the training program.

Table (4): Mean percentage of staff nurses toward dimensions of nursing entrepreneurship tendency pre / post and
follow up the implementation of the training program (N=50).

D	Dimensions of		<b>D</b>	Dest	Follow		Paired s	ample t-test		
_	umensions of eral measure	No.	Pre Program	Post		Pre	Pre-Post		Pre-FU	
	repreneurship	of	Trogram	Program	up					
	ndency (GET)	items	Mean %	Mean %	Mean %	t-test	p- value	t-test	p-value	
-, -	Need for Achievement	12	21.04	30.54	30.94	3.646	0.021*	3.134	0.019*	
	Need for autonomy	6	22.84	30.49	29.80	2.933	0.033*	2.137	0.028*	
3) (	Creative tendency	12	24.48	28.14	27.34	3.602	0.020*	2.865	0.023*	
,	Calculated risk aking	12	19.54	27.02	24.36	2.779	0.037*	2.218	0.018*	
5) L	Locus of control	12	20.48	29.26	27.44	2.758	0.038*	2.080	0.044*	
Total r	mean %	54	63.81	78.40	74.62	4.051	0.002*	3.126*	0.017*	

The table indicates that the total mean percentage of all dimensions of entrepreneurship tendency was (63.81%, 78.40% & 74.62%) at pre / post and follow-up the implementation of the training program respectively.

Also, Creative tendency dimension was the highest mean percentage pre implementation of the training program (24.48%). Whiles, need for achievement and need for autonomy dimensions were the highest mean percentage post implementation of the training program (30.54% & 30.49%) respectively. In addition to, the need for autonomy dimension was the highest mean percentage at follow-up phase after three months post implementation of the training program (29.80%).

While calculated risk taking dimension was the lowest mean percentage pre / post and follow up implementation of the training program (19.54%, 27.02% & 24.36%) respectively. Moreover, there was statistical significant difference between all dimensions of the general entrepreneurial tendency at pre / post and follow-up phases post implementation of the training program (p<0.001).

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# Table (5): Correlation between staff nurses knowledge level about entrepreneurship and their personal data Pre / Post and follow-up the program, (N=50)

	Level of staff nurses knowledge about nursing entrepreneurship											
	Pre-Program (n=50)				Post-Program (n=50)				Follow Up (n=50)			
Personal data		actory =10)	Chi-sq	square test Satisfactory (N=42)		Chi-square test		Satisfactory (N=37)		Chi-square test		
	No.	%	<b>x</b> <sup>2</sup>	p-value	No.	%	<b>x</b> <sup>2</sup>	p- value	No.	%	<b>x</b> <sup>2</sup>	p- value
Age (years)												
25-<30 years	3	30.0			19	45.2			20	54.0		
30-<35 years	4	40.0	1.380	0.596	11	26.2	2.582	0.580	10	27.0	0.330	0.557
35-45 years	3	30.0			12	28.5			7	18.9		
Gender												
Female	6	60.0	2,422	0.511	32	76.2	3.278	0.536	27	72.9	2.196	0.283
Male	4	40.0	3.433	0.311	10	23.8	5.278	0.330	10	27.1	2.190	0.285
Hospital												
department												
ICU	3	30.0	3.198	0.542	17	40.5	1.193	0.696	12	32.4	1.892	0.583
Ward unit	7	70.0	5.170	0.342	25	59.5	1.195	0.090	25	67.6	1.692	0.585
Years of experience (years)												
<5 years	5	50.0			23	54.8			19	51.3		
5-<10 years	3	30.0	4.344	0.017*	11	26.2	6.628	0.026*	10	27.0	7.773	0.021*
≥10 years	2	20.0			8	19.0			8	21.6		
Monthly income												
Insufficient	7	70.0	<b>5</b> 449	0.011*	38	90.5	7.000	0.014*	33	89.1	0.000	0.011*
Sufficient	3	30.0	5.448	0.011*	4	9.5	7.886	0.014*	4	10.9	8.880	0.011*

The table shows that there was statistically significant relationship between staff nurses knowledge level about nursing entrepreneurship and their years of experience pre/post and follow up (x2: 4.344, p: 0.017\* /x2: 6.628, p: 0.026\* / x2: 7.773, p: 0.021\*) respectively. Also, there was statistically significant relationship between staff nurses knowledge level about nursing entrepreneurship and their monthly income pre/post and follow up (x2: 5.448, p: 0.011\*/x2: 7.886, p: 0.014\*/x2: 8.880, p: 0.011\*) respectively.

Table (6): Correlation between level of staff nurses entrepreneurial tendency and their personal data Pre / Post and
follow-up the program, (N=50)

	Level of general entrepreneurial tendency							
Personal data	Pre-Program (n=50)			rogram =50)	Follow Up (n=50)			
	$x^2$	p-value	$x^2$	p-value	$x^2$	p-value		
Age (years)	0.209	0.256	0.191	0.358	0.014	0.958		
Gender	0.160	0.515	0.113	0.801	0.164	0.400		
Hospital department	0.129	0.746	0.086	0.923	0.198	0.335		
Years of experience (years)	0.556	0.034*	0.723	0.021*	0.450	0.044*		
Monthly income	0.656	0.096*	0.552	0.032*	0.632	0.026*		

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The table shows that there was a statistically significant positive correlation between general entrepreneurial tendency by staff nurses and years of experience pre/post and follow up (x2: 0.556, p: 0.034\*/x2: 0.723, p: 0.021\*/x2: 0.450, p: 0.044\*) respectively. In addition to, there was a statistically significant positive correlation between general entrepreneurial tendency by staff nurses and monthly income pre/post and follow up (x2: 0.656, p: 0.096\*/x2: 0.552, p: 0.032\*x2: 0.632, p: 0.026\*\*) respectively.

	Level of	Level of total evaluation of nurses'entrepreneur reported skills							
Personal data	Pre-Program (n=50)		Post-Program (n=50)		Follow Up (n=50)				
	$x^2$	p-value	$x^2$	p-value	$x^2$	p-value			
Age (years)	0.393	0.055	0.247	0.233	0.144	0.491			
Gender	0.127	0.754	0.255	0.219	0.321	0.117			
Hospital department	0.147	0.604	0.237	0.253	0.261	0.208			
Years of experience (years)	0.853	0.007*	0.774	0.019*	0.827	<0.001**			
Monthly income	0.789	0.002*	0.482	0.040*	0.435	0.030*			

 Table (7): Correlation between level of nurses'entrepreneur reported skills and their personal data Pre / Post and follow-up the program, (N=50).

The table shows that there was a statistically significant positive correlation between nurses'entrepreneur reported skills by staff nurses and years of experience pre/post and follow up (x2: 0.853, p: 0.007\*/x2: 0.774, p: 0.019\*/x2: 0.827, p: <0.001) respectively. In addition to, there was a statistically significant positive correlation between nurses'entrepreneur reported skills by staff nurses and monthly income pre/post and follow up (x2: 0.789, p: 0.002\*/x2: 0.482, p: 0.040\*\*/x2: 0.435, p: 0.030\*) respectively.

 Table (8): Correlation matrix between total score of knowledge regarding nursing entrepreneurship, total score of general entrepreneurial tendency and total score of evaluation of nurses'entrepreneur reported skills pre the program (N=50).

		Total score of knowledge regarding nursing entrepreneurship	Total score of general entrepreneurial tendency (GET)	Total score of evaluation of nurses'entrepreneur reported skills
Total score of				
knowledge	r-value			
regarding nursing				
entrepreneurship	p-value			
Total score of		0.289		
general	r-value	0.289		
entrepreneurial		0.161		
tendency (GET)	p-value	0.101		
Total score of	r-value	0.301	0.147	
evaluation of				
nurses'entrepreneur		0.144	0.482	
reported skills	p-value			

The table shows that there was a statistically insignificant correlation between knowledge regarding entrepreneurship and entrepreneurial tendency by staff nurses pre implementation of the training program (**r: 0.289, p: 0.161**).**Furthermore,** there was a statistically insignificant correlation between knowledge regarding entrepreneurship and nurses'entrepreneur reported skills by staff nurses pre implementation of the training program (**r: 0.301, p: 0.144**). **Finally**, there was a statistically insignificant correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurse's pre implementation of the training program (**r: 0.301, p: 0.144**). **Finally**, there was a statistically insignificant correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurse's pre implementation of the training program (**r: 0.147, p: 0.482**).

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# Table (9): Correlation matrix between total score of knowledge regarding nursing entrepreneurship, total score of general entrepreneurial tendency and total score of evaluation of nurses'entrepreneur reported skills post the program (N=50).

		Total score of knowledge regarding nursing entrepreneurship	Total score of general entrepreneurial tendency (GET)	Total score of evaluation of nurses'entrepreneur reported skills
Total score of knowledge	r-value			
regarding nursing entrepreneurship	p-value			
Total score of general	r-value	0.537		
entrepreneurial tendency (GET)	p-value	0.006*		
Total score of	r-value	0.610	0.508	
evaluation of nurses'entrepreneur		<0.001**	0.010*	
reported skills	p-value			

The table shows that there was a statistically significant positive correlation between knowledge regarding entrepreneurship and entrepreneurial tendency by staff nurses post implementation of the training program (**r**: **0.537**, **p**: **0.006**).**Furthermore**, there was highly statistically significant positive correlation between knowledge regarding entrepreneurship and nurses' entrepreneur reported skills by staff nurses post implementation of the training program (**r**: **0.610**, **p**: **<0.001**\*\*).**Finally**, there was a statistically significant positive correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurses post implementation of the training program (**r**: **0.610**, **p**: **<0.001**\*\*).**Finally**, there was a statistically significant positive correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurses post implementation of the training program (**r**: **0.508**, **p**: **0.010**\*).

 Table (10): Correlation matrix between total score of knowledge regarding nursing entrepreneurship, total score of general entrepreneurial tendency and total score of evaluation of nurses'entrepreneur reported skills follow-up the program (N=50).

		Total score of knowledge regarding nursing entrepreneurship	Total score of general entrepreneurial tendency (GET)	Total score of evaluation of nurses'entrepreneur reported skills
Total score of				
knowledge	r-value			
regarding nursing	_			
entrepreneurship	p-value			
Total score of		0.622		
general	r-value	0.633		
entrepreneurial		0.004.00		
tendency (GET)	p-value	<0.001**		
Total score of	r-value	0.400	0.546	
evaluation of				
nurses'entrepreneur		0.048*	0.005*	
reported skills	p-value			

The table shows that there was highly statistically significant positive correlation between knowledge regarding entrepreneurship and entrepreneurial tendency by staff nurses at follow-up after implementation of the training program (**r: 0.633, p: <0.001\*\*).Furthermore,** there was a statistically significant positive correlation between knowledge regarding entrepreneurship and nurses'entrepreneur reported skills by staff nurses at follow-up phase (**r: 0.400, p: 0.048\*). Finally,** there was a statistically significant positive correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurses at follow-up phase (**r: 0.400, p: 0.048\*). Finally,** there was a statistically significant positive correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurses at follow-up phase (**r: 0.546, p: 0.005\*\***).

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# 3. DISCUSSION

Entrepreneurship can be a favorable tool to provide nursing professionals with a new way to recreate their profession and create new professional possibilities to generate quality for patients, and obtain good salaries and satisfaction with the production of their service. <sup>(9)</sup>

According to the current study, only one fifth of the studied staff nurses' total knowledge level about nursing entrepreneurship was satisfactory level pre implementation of training program. While the majority of them had satisfactory level about nursing entrepreneurship knowledge immediately post and follow up the implementation of the training entrepreneurship program respectively. These findings were in harmony with the findings of studies conducted by **Elali and Al-Yacoub** <sup>(10)</sup> who found that most of study sample had satisfactory knowledge level at immediately post and follow-up (after 3 months) program phases respectively.

Moreover, results of the present study revealed that there was highly statistical significant difference between staff nurse's total knowledge about nursing entrepreneurship at pre / post and follow-up phases post implementation of the training program. These findings were consistent with the findings of the study conducted by **Jakobsen et al.**<sup>(11)</sup> who found that there was a significant improvement in nurses knowledge level after attending training program throughout immediately post and follow-up phases (after three months) of program compared with the preprogram phase. These findings were contradicted with the findings of the study conducted by **Fellnhofer and Mueller**<sup>(12)</sup> they stated that there was no significant improvement in nurses knowledge level after attending training program throughout immediately post and follow-up phases (after three months) of program compared with the preprogram phase.

In addition to, the study results revealed that the highest mean percentage of staff nurses' knowledge about nursing entrepreneurship post and follow up implementation of the training program respectively. While, the lowest mean percentage of staff nurses' knowledge about nursing entrepreneurship pre implementation of the training program. These findings were consistent with the findings of the study conducted by **Tekin and Bekar** <sup>(13)</sup> they found that the study sample had highest knowledge percentage regarding entrepreneurship after the training program specially regarding the items concerned with the definition and benefits. From the researcher's point of view, the study sample level of education is only Bachelor degree in nursing and do not have master or decorate degree in nursing and this entrepreneurship topic do not included in the curriculum of the undergraduate. So, the majority of the study sample do not have any idea about nursing entrepreneurship was unsatisfactory pre implementation of the training entrepreneurship program. Otherwise, the majority of study sample became had satisfactory level about nursing entrepreneurship knowledge immediately post and follow up the implementation of the training entrepreneurship knowledge immediately post and follow up the implementation of the training entrepreneurship knowledge immediately post and follow up the knowledge level about nursing entrepreneurship knowledge immediately post and follow up the implementation of the training entrepreneurship knowledge immediately post and follow up the implementation of the training entrepreneurship knowledge immediately post and follow up the knowledge level and aids .Also, the study sample was very interested during training sessions. So, the knowledge level enhanced after the implementation of the training program.

Results of the present study revealed that the majority of staff nurses had low level toward nurses' entrepreneur skills pre implementation of training program. While the majority of them had high level toward nurses'entrepreneur skills immediately post and at follow up phases respectively. These findings were congruent with studies conducted by **Paoloni et al**.<sup>(14)</sup> who showed that the training program had a positive effect on improvement of nurse's skills level about entrepreneurship immediately after program implementation compared with the pre-program phase. From the researcher's point of view, the study sample do not know any of the entrepreneur skills and they lack the aware if they have any of these skills or not pre implementation of training program. But after finishing the theoretical and practical hours of the training program and evaluate entrepreneur skills through various evaluation methods consequently the study sample became more aware about the various entrepreneur skills and able to judge on themselves and determine if they have or not these skills which clarify the improvement of their skills levels.

Also, Results of the present study revealed that the highest mean percentage of nurses' entrepreneur reported skills post and follow up implementation of the training program respectively. These findings were congruent with studies conducted by **Effendy et al.**<sup>(15)</sup> who found that the nurses had highest level of skills as a result of application of training. Also, reported that the skills are the most supporting factors for nurses during implementation of entrepreneurial activities. Furthermore,

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results of the present study revealed that there was highly statistical significant difference between staff nurse's total entrepreneur skills at pre / post and follow-up phases post implementation of the training program . These findings were congruent with studies conducted by **Borimnejad et al** <sup>(16)</sup> who found that there were statistically significant differences of study sample entrepreneurial skills after implementation program about entrepreneurship.

While these findings were contradicted with the finding of the study conducted by **Murphy and Coombes**<sup>(17)</sup> who clarified that there were no statistically significant differences of future nurses' entrepreneurial skills after implementation program about entrepreneurship. From the researcher's point of view, skills have a very strong and significant impact on entrepreneurial performance and skills may be improved by experience and training .So, if the nurses entrepreneur acquired multiple skills including interpersonal, business and entrepreneurial skills regarding entrepreneurial process steps they succeeded in implementation of entrepreneurial activities.

Results of the present study revealed that the majority of staff nurses had low level about entrepreneurship tendency pre implementation of training program. While the majority of them had high level about entrepreneurship tendency immediately post and at follow up phases respectively. These results were on the same line with the study conducted by **Ali et al.** <sup>(18)</sup> who emphasized that training for entrepreneurship provides support for entrepreneurs tend to favor the willingness to start a business. Also, stated that at the pre-program phase, the study participant's answers for the items mainly directed to "to some extent" and "disagree". The study participants perceptions were mainly changed immediately post the program and they choose "agree" and "strongly agree" for the most answers. The total level of entrepreneurial tendency was high at the immediately post- program (62.83 %) rather than after six months (44.25 %) of the program.

From the researcher's point of view, the entrepreneurship starts with the entrepreneurial tendency and entrepreneurial tendency is necessary for the start of entrepreneurial activities. This tendency leads the individual's actions towards a business idea and the degree to which an individual displays such entrepreneurial behaviors and tendencies might reveal whether the person will be an entrepreneur or not. So, after implementation of the training program and illustration of all topics included in the program and achieved the aim and objectives through lectures and open discussion and demonstrate entrepreneurial examples, the studied staff sample became knowledgeable toward nursing entrepreneurship. So, the level of the tendency toward nursing entrepreneurship increased.

Results of the present study revealed that there was statistical significant difference between all dimensions of the general entrepreneurial tendency at pre / post and follow-up phases post implementation of the training program . These findings were congruent with study conducted by **Ambad and Damit**.<sup>(19)</sup> they revealed that there was a significance difference of entrepreneurial intention related to perceived entrepreneurial training support, that was highlighted the positive effect of entrepreneurship orientation for improving the entrepreneurship intention among nurses. Meanwhile, these results were in contrast with the study conducted by **Mirandaa et al.**<sup>(20)</sup> who proved that there was insignificant difference in entrepreneurship intention related to entrepreneurial training.

Also, results of the present study revealed that creative tendency dimension was the highest mean percentage pre implementation of the training program. While, the need for achievement and need for autonomy dimensions were the highest mean percentage post implementation of the training program. In addition to, the need for autonomy dimension was the highest mean percentage at follow-up phase after three months post implementation of the training program. While the lowest mean percentage was reported to calculated risk taking dimension pre /post and at follow up phase. These findings were congruent with the findings of the studies conducted by **Awwad and Al-Aseer** <sup>(21)</sup> they emphasized the need for achievement and need for autonomy represent the highest dimensions after the implementation of the training program and locus of control and calculated risk taking represent the lowest score factor. These findings were contradicted with the findings of the study conducted by **Cetinal and Kumcu** <sup>(22)</sup> they found that the lowest score reported to the need for achievement and the creative tendency dimensions. While the highest score reported to the risk taking dimension.

Moreover, there was statistical significant difference between all dimensions of the general entrepreneurial tendency at pre / post and follow-up phases post implementation of the training program. These findings were consistent with the findings of the study conducted by **Ahmed et al.**<sup>(23)</sup> who found there was statistically significant difference between entrepreneurial tendency dimensions at pre and post after implementation of the training program. From the researcher's point of view, the creativity generally is inner drive and initiates from inside the person. So, the entrepreneur nurses naturally creative which

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interpret the current finding that creative tendency dimension was the highest mean percentage pre implementation of the training program. In addition, the need for achievement is essential characteristics for nurses since it allows them to understand the profitable activities of their work and seek to achieve their goals in the short or long term to start a new business. Also, the entrepreneurs seek autonomy for the rules or control of others, maintaining his opinion in the opposition or the initial lack of success, expressing confidence in his/her ability to complete a difficult task and face challenges. So, post the implementation of the entrepreneurship training program the percentage of theses dimensions (need for achievement and need for autonomy) increased which illustrate the current result of present study.

Furthermore, results of the present study revealed that there was a statistically insignificant correlation between knowledge regarding entrepreneurship and nurses'entrepreneur reported skills by staff nurse's pre implementation of the training program and a statistically insignificant correlation between entrepreneurial tendency and nurses'entrepreneur reported skills by staff nurse's pre implementation of the training program. These findings were congruent with study conducted by **Lim et al.**<sup>(24)</sup> who revealed that there was no statistically significant correlation between entrepreneurial knowledge, tendency and entrepreneur skills pre implementation of the training program.

From the researcher's point of view, the study sample suffers from lack of knowledge and skills about entrepreneurship. So, absence of intension and tendency toward entrepreneurship is normal results pre the implementation of the training program about entrepreneurship. Furthermore, results of the present study revealed there was highly statistically significant positive correlation between knowledge regarding entrepreneurship, entrepreneurial tendency and nurses'entrepreneur skills as reported by studied staff nurses post implementation of the training program and at follow up phase. These findings were consistent with study conducted by **Garaika et al.** <sup>(25)</sup> Who found that the favorable influence of entrepreneurship training on people's decision to launch their own enterprises at some points in their careers. People are more interested in starting their own businesses after receiving entrepreneurial training. Furthermore, entrepreneurship training increase entrepreneurial knowledge and tendency and motivates nurses to pursue entrepreneurship training program enhances entrepreneurial skills. From the researcher's point of view, the entrepreneurship training program enhances entrepreneurial tendency explains the individual's intention to be an entrepreneur. So, the enhancement of knowledge and skills levels of the study sample post the implementation of the entrepreneurship training program reflect on increasing of entrepreneurial tendency .So, the statistical significance positive correlation between them was logic relationship.

# 4. CONCULSION

## Based on the study findings, it was concluded that :

The majority of studied staff nurses had satisfactory level about nursing entrepreneurship knowledge and more than half of them had high level of nurses'entrepreneur skills and entrepreneurial tendency post and follow-up the implementation of the entrepreneurship training program. Also, entrepreneurship program had positive effect on nurses' entrepreneurship tendency.

## 5. RECOMMENDATIONS

## Based on the study findings, the following recommendations were suggested:

#### I- Faculties of Nursing:

1-Adress entrepreneurship subject into undergraduate nursing courses.

2-Create a competency-based curriculum and creative learning to support sustainable entrepreneurship learning.

3-Review and improve curricula and content in order to incorporate an entrepreneurial culture in nursing education.

4- Provide training programs, seminar and conferences about entrepreneurship particularly in healthcare field specially for nurses.

5-Provide assistance for nursing students who want to succeed as entrepreneurs.

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# II: Healtcare organizations:

1- Offer entrepreneurship training programs for nurses.

2- Encourage nurses within the hospital to exhibiting entrepreneurial qualities at various levels of care in order to meet the expanding and changing needs in the healthcare sector.

- 3- Support nurses' entrepreneurship tendency.
- 4- Support the intra- entrepreneurship within the hospital.

5-Emphasis on new trends in nursing administration such as nursing entrepreneurship to increase nurses' tendency.

# **III-** Further studies:

- 1-The impact of entrepreneurship on direction of nursing career.
- 2- Effect of entrepreneurship training program on innovative behavior of nurses.

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