The Effect of Entrepreneurship Education on Self-Efficacy Beliefs and Entrepreneurial Intention of Nurses

SIMIN JAHANI¹, MAHBUBEH BABAZADEH², SHAYESTEH HAGHIGHI³, BAHMAN CHERAGHIAN⁴

ABSTRACT

Introduction: One of the most important factors in the development of entrepreneurship is education, and this has been ignored in nursing.

Aim: To investigate the effect of entrepreneurship education on the self-efficacy and entrepreneurial intention of nurses.

Materials and Methods: This quasi-experimental study was conducted on 76 nurses working in two hospitals in Ahvaz in 2016. Nurses working in Imam Khomeini Hospital were considered as the control group and those working in Golestan Hospital constituted the intervention group. Nurses of the intervention group were trained for three sessions in three consecutive days. Nurses in the control group did not receive any training. In both groups, Sherer self-efficacy, and Linan and Chen's entrepreneurial intention questionnaires were completed. The data collected were analysed using Chi-squared test, independent t-test and paired t-test.

Results: In terms of self-efficacy belief (p=0.044) and entrepreneurial intention (p=0.047), there was a significant difference between the two groups after training, while the two groups were not significantly different before the training (p=0.619 and p=0.892). In the intervention group, there was a significant difference between the mean of self-efficacy belief (p=0.037) and entrepreneurial intention (p=0.041) before and after training, while there was no significant difference in the control group (p=0.837 and p=0.72).

Conclusion: Given the findings of this study, it seems that entrepreneurship education can affect nurses' self-efficacy belief and entrepreneurship intention. More studies are recommended to be conducted though. The findings of this study can be presented as a practical guide to nursing board, hospital managers, and entrepreneurship centers.

Keywords: Entrepreneurial intention, Nursing, Training

INTRODUCTION

Innovation and entrepreneurship are important nursing skills that have been long recognised as good performance factors for health organisations [1]. Over the past two decades entrepreneurship of nurses has significantly expanded [2,3]. The results of recent studies also indicate the satisfaction of patients with active entrepreneur nurses [4,5]. According to the National Nursing Institute, as many as 0.5-1% of the world's nurses have entrepreneurial roles [6]. In New Zealand, less than 0.1% [7], in the United States, 0.18% [5], and in England more than 18% of nurses have entrepreneurial roles [2].

Studies showed that entrepreneur nurses deal with several problems for developing entrepreneurship in nursing [5,8]. Jahani S et al., consider the traditional nursing structure, the unprofessional behaviors of colleagues, and the immoral business are important barriers to achieve entrepreneurship among nurses [8]. Self-efficacy is one of the most important variables predicting continuity in work and achieving challenging goals in setting up and developing an entrepreneurial business [9,10]. Self-efficacy is the individual's belief in whether he has the ability to do something or not [11]. According to Bandura, low self-efficacy beliefs will weaken performance, while high self-efficacy beliefs facilitate contribution in task, effort and performance, and plays an important role in development of the business [12].

Increased entrepreneurial self-efficacy can affect the intention of self-efficacy, and increase in entrepreneurial intention can lead to increased entrepreneurial self-efficacy as well [13-16]. Auzoult L et al., reported a positive and significant correlation between self-efficacy and entrepreneurial intention among the students in Spain [13].

Entrepreneurship culture is a collective planning in which the underlying value system has a tendency toward entrepreneurial behaviors [17]. The First step to be taken in the development of entrepreneurship is the promotion of entrepreneurship culture

[18]. Change and promotion of entrepreneurship culture can be conducted through educational programs [19]. Increased entrepreneurship education can promote the entrepreneurship culture indicators [20].

Most of the studies highlighted the need for entrepreneurship education in this profession [21-23]. Boore and Porter have emphasised the need to educate entrepreneurship activities in nurses by providing strategies for developing entrepreneurship education in nursing and integrating it into nursing programs in the United Kingdom [21]. Farsi JY et al., showed that education did not affect the entrepreneurial intention of nursing students [24]. Given the importance of entrepreneurship education, its effectiveness on self-efficacy and entrepreneurial intention [25], and the limited studies conducted in nursing, this study aimed to determine the effect of entrepreneurial intention on self-efficacy beliefs and nursing entrepreneurial intention.

MATERIALS AND METHODS

This was a quasi-experimental study with a pre test/post test design. The study population included the nurses working in Imam Khomeini and Golestan hospitals of Ahwaz in 2016. The inclusion criteria were: having at least a bachelor degree in nursing, complete consent to participate in the research. The exclusion criteria were: failing to attend one of the educational sessions, failing to complete the questionnaires, and unwilingness to continue the study.

The sample size was obtained according to the results of Barani S et al., [26]. Based on the results of their study, a statistically significant difference (p<0.001) was found in the entrepreneurial intention of the samples after the intervention, and keeping α =0.05, β =0.1, and power=90, 34 individuals were selected for each group, which by including 10% attrition, reached 38 participants in each group.

A demographic questionnaire, Linan & Chen's entrepreneurial intention, and Sherer's general self-efficacy questionnaires were used to collect data. The Linan and Chen's questionnaire comprise six sections: social-mental norms (three items), general attitude toward entrepreneurship (fifteen items), belief in self-efficacy (five items), attitudes toward values and material (five items), motivation for progress (four items), and independence. The scale of this questionnaire is in the form of a 5-point Likert scale, ranging from "completely agree" to "completely disagree". The maximum and minimum scores were 240 and 48 respectively. Keshavarz M et al., translated this questionnaire to Persian and its factual validity was confirmed by panel of experts [27]. Moreover, the reliability and internal consistency of the items with Cronbach's alpha coefficient were reported to be between 0.731 and 0.964 [28]. The Sherer's self-efficacy questionnaire consists of 17 questions. Each question is based on the Likert scale ranging from "I completely disagree" to "I completely agree". The maximum and minimum scores were 85 and 17 respectively [29]. This questionnaire was first translated by Baghtiari Brati and predicted correlation between the self-efficacy scale and the mean personality traits (0.61 and at significance level of 0.05) were reported to confirm the desired structure. Furthermore, the reliability coefficient of the scale was measured to be 0.76 by using the two-step method of Gutman test, and it was confirmed by using Cronbach's alpha coefficient of 0.79.

After obtaining the introduction letter needed from the Jundishapur University of Medical Sciences as well as the Ethics Committee's permission (with the Ethics Code of IR.AJUMS.REC.1395.483) and presenting them to the authorities of the hospitals, the researcher referred to the centres for recruiting the participants. In order to avoid the effects of the two groups on one another, control (Golestan) (n=38) and intervention (Imam Khomeini) (n=38) groups were selected from different hospitals.

At first, the demographic information form was completed. Then, Linan and Chen's entrepreneurial intention and Sherer's general self-efficacy questionnaires were completed as pre-tests. The intervention group was trained for three sessions in three consecutive days, using feedback lecture and PowerPoint presentation, while the control group did not underwent intervention. The training was provided by experts on nursing and entrepreneurship. The content of the meetings was selected using reliable sources of entrepreneurship and available articles, as well as the views of entrepreneurship experts in this field as follow:

Session 1: Concepts of entrepreneurship, nursing entrepreneurship and entrepreneur nurses, innovation and creativity, nursing opportunities, opportunity discovery resources, personality motives and features

Session 2: How to set up independent businesses, barriers and support resources, issuing licenses, financing and human resources.

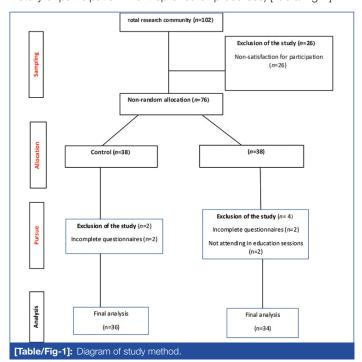
Session 3: How to Manage a business.

After completing the training, both nurses were asked to complete self-efficacy and entrepreneurial intention questionnaires at the same location. At the end of the course, all nurses were given certificates for completing entrepreneurship training.

After collecting data, the groups were marked with codes 1 and 2 (the analyst did not know their nature) and obtained information was analysed using SPSS-20. Descriptive statistics were applied to describe absolute frequency, relative frequency, mean and standard deviation, and Chi-square test was used to compare the demographic variables of the two groups. In order to compare entrepreneurship intention scores and self-efficacy belief between two groups and each group before and after training, independent t-test and paired t-test were used respectively. In all tests, p<0.05 was considered as the statistically significant.

RESULTS

From among the 38 nurses selected in each group, 4 nurses of the intervention group were excluded from the study due to incomplete completion of the questionnaire and lack of participation in the training sessions. Moreover, 2 participants of the control group were also excluded due to incomplete completion of the questionnaire. Thus, the final analysis was conducted on 70 people [Table/Fig-1]. According to chi-squared test, there was no significant difference between the two groups in terms of demographic variables (age, gender, marital status, number of households, income, business startup history, and history of participation in entrepreneurship courses) [Table/Fig-2].



Group	Features	Intervention (n=34) number (%)	Control (n=36) number (%)	p- value	
Age	20-30 years	5 (14.7)	16 (44.4)		
	31-40 years	20 (58.8)	17 (47.2)	0.057	
	41-50 years	6 (17.6)	2 (5.5)	0.057	
	51-60 years	3 (8)	1 (2.7)		
Sex	Female	27 (79.4)	25 (69.4)	0.372	
	Male	7 (20.6)	11 (30.5)		
Marital statue	Single	11 (32.3)	18 (50.0)	0.100	
	Married	23 (67.6)	18 (50.0)	0.190	
	1	3 (8.8)	5 (13.8)	0.089	
Household members	2	8 (23.5)	4 (11.1)		
	3	3 (8.8)	14 (38.8)		
	4	12 (35.3)	9 (25.0)		
	5	5 (14.7)	2 (5.5)		
	6	3 (8.8)	2 (5.5)		
Income	Less than 2 million	4 (11.8)	5 (13.9)		
	2-5 million	16 (47)	10 (27.8)		
	5-10 million	5 (14.7)	12 (33.3)	0.091	
	10-15 million	7 (20.6)	7 (19.4)		
	More than 15 million	2 (5.9)	2 (5.6)		
History of	Yes	19 (55.8)	22 (61.1)	0.746	
private business	No	15 (44.1)	14 (38.8)	0.713	
History of	Yes	9 (26.5)	9 (25.5)	0.766	
participating in entrepreneurship	No	25 (73.5)	27 (75.0)		

[Table/Fig-2]: Comparing demographic variables in intervention and control groups Chi-souare test. p<0.05 significant difference

According to independent t-test, in terms of self-efficacy belief there was no significant difference between the two groups before the intervention, but after the intervention, the difference between the two groups was significant. Paired t-test showed that there was a significant difference between the mean of self-efficacy belief in the intervention group before and after education. However, in the control group, this difference was not significant [Table/Fig-3]. Moreover, there was a significant difference between the mean of entrepreneurial intention in the intervention group before and after training, but there was no significant difference in the control group [Table/Fig-4].

Self-efficacy	Intervention Group (n=34) mean±SD		
Before intervention	56.83±4.07	55.9±7.97*	0.619
After intervention	59.7±45.35	56.5±04.63*	0.044
p-value	0.037	0.837	

[Table/Fig-3]: Comparing nurse's self-efficiency belief in intervention and control groups before and after intervention.

Independent-t and paired t-test, p<0.05 significant difference

*the questionnaire were filled pre and post-test

Entrepreneurship intention	Intervention Group (n=34) mean±SD	Control Group (n=36) mean±SD	p-value
Before intervention	199.12±17.66	198.47±13.69*	0.892
After intervention	202.47±15.32	199.58±14.52*	0.047
p-value	0.041	0.720	

[Table/Fig-4]: Comparing nurse's entrepreneurship intention in intervention and control groups before and after intervention.

Independent-t and paired t-test, p<0.05 significant difference

*the questionnaire were filled pre and post-test

DISCUSSION

The results also showed that there was a significant difference between the mean of self-efficacy belief in the intervention group before and after education, and this indicates the effectiveness of education. A similar study was conducted by Farsi to investigate the effect of opportunity diagnosis on nursing students in Zanjan Azad University. The findings showed, perceived behavior control (self-efficacy) as a main factor of predicting entrepreneurial intention (29.54±4.59) didn't show significant difference after training in comparison to the score obtained before intervention (29.19±5.00) [27]. In justifying the different results of this research and the aforementioned study, one can refer to the research community in the present study that was all nurses. However, in the aforementioned study the participants were all nursing students. In the same study, entrepreneurship education was conducted for 8 sessions, focusing on the problem of identifying opportunities, including the entrepreneurship process and familiarity with business in the health sector, which is different from the training provided in this research. In addition, self-efficacy was considered as a major predictor of entrepreneurial intention. However, in the present study, self-efficacy belief variable was evaluated by the Sherer general self-efficacy questionnaire as the main dependent variable. In other studies, the effectiveness of entrepreneurship education has been evaluated on the self-efficacy of other professions, and in particular on that of the students, and contradictory results have been reported in this regard. In line with the results of this study, in the study conducted by Sánchez on the students of economics, social studies, technical sciences, law, and health in Spain, the results showed that self-efficacy significantly increased after an eight-month entrepreneurship training in comparison to the pre-educational period (p=0.001). After intervention, there was a significant difference between the intervention group and the control group in terms of selfefficacy (p<0.001[30]). Contrary to the results of the present study, in the study conducted by Oosterbeek H et al., on the students at the Faculty of Labour in the Netherlands, the results showed that there was no significant difference in post-test between the intervention group (5.46±1.10) and control (5.76±2.1) in terms of self-efficacy.

Moreover, the mean of the scores in the control group was higher than that of the intervention group [31]. In the aforementioned study, the training was provided in the form of standard program of small businesses. The training was provided every week for 5-10 hours in the classroom and in the form of a Dutch standard curriculum. This training program was designed to take on group responsibility for small businesses and short-term trades from the beginning of the university's entry into the university until graduation.

The results also showed that there was a significant difference between the mean of entrepreneurial intention of the intervention group before and after training. In line with the results of this study, a similar study was conducted by Christine, on a single-group to determine the effect of training the primary entrepreneurship model on nursing students. The findings showed that 50 minutes of online entrepreneurship training included initial assessment, general barriers, counseling, type of work, costs planning and trade significantly increased student entrepreneurial intention (p=0.001) [32]. Contrary to the results of this study, a study by Farsi aimed at determining the effect of opportunity diagnostic training on the entrepreneurial intention of nursing students showed that entrepreneurial intention score after the implementation of the program of teaching opportunities diagnosis (26.27±6.18) had no significant difference with the scores obtained after the implementation of the educational program (25.62±34.3) (p=0.705) [24]. Although, like the present study, Linan and Chen's questionnaire was used, in the aforementioned research, the research community was nursing students and entrepreneurship training was conducted for 8 sessions through focusing on the problem of identifying opportunities, including entrepreneurial process and familiarity with business in health sector. Thus, the aforementioned study is different from the present one. According to the aforementioned study, the ineffectiveness of education on the entrepreneurial intention of students may be due to the high employment attraction and the hope of being employed among nursing students in Iran.

In line with the findings of the present study, in the Pruett's study, when showed that the entrepreneurship workshop for 4 years (2 sessions per month) significantly increased the entrepreneurship intention of the participants (p=0.001) [33]. Moreover, in the study conducted by Arranz N et al., to determine effectiveness of entrepreneurship higher education on tourism students' entrepreneurship in Scandinavia, the results showed that education had a positive effect on the entrepreneurial intention of undergraduate and postgraduate students (p=0.02) [25]. Another study by Nabi in Manchester United 2012-2014 was conducted. The findings showed that entrepreneurship education (including business recognition and creation, entrepreneurship tools and skills, work group to provide entrepreneurship, business management, and entrepreneurship programs) for two semesters, increased the mean of entrepreneurship intention in the intervention group (0.057±0/80), while in the control group, the mean scores decreased (-0.556±0.790). The results also showed that there was a significant difference between the scores of the entrepreneurial intention of the control group (3.398±0.927) and those of the intervention group (3.1683 ± 0.911) (p=0.001). Contrary to this study, another study was conducted by Oosterbeek H et al., in the Netherlands to measure the effect of entrepreneurship training in the form of firm standard program. The results showed that there was a significant difference between the intervention and control groups in the post test and in favour of the control group; the control group had higher mean scores of entrepreneurial intention (p=0.001). The difference of the students' self-efficacy scores was negative in the intervention group (p=0.01, -0.375), while this difference was insignificant and positive in the control group $(2/11\pm0.178)$ [31]. In the aforementioned study, the training was provided in the form of a standard program of small companies in the Dutch standard curriculum, which is different from the type of training offered in the present study. Additionally,

in the aforementioned study, the intention of entrepreneurship was assessed by using Iscan standard questionnaire, while in the present study, Linan and Chen questionnaire was used to evaluate entrepreneurial intention. Therefore, the differences mentioned above can justify the differences observed in the findings. Present study is one of the few studies conducted to investigate the effect of entrepreneurship education on the self-efficacy and entrepreneurship intention of nurses.

LIMITATION

The psychological characteristics, cultural backgrounds, interest, and motivation of samples affect education in different ways. This was beyond the control of the researcher. It is suggested that future researches take into account the aforementioned. It is also recommended to examine the effect of entrepreneurship education or entrepreneurial counseling on self-efficacy belief, entrepreneurial intention, and psychological entrepreneurial characteristics and attitudes of nursing students and nurses.

CONCLUSION

According to the findings of this study, it seems that entrepreneurship education can affect the self-efficacy and entrepreneurship intention of nurses. Therefore, the findings can be used to encourage Nursing, Hospital Managers and Entrepreneurship Centers to implement nursing entrepreneurship training courses and thus promote nursing entrepreneurship culture.

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PARTICULARS OF CONTRIBUTORS:

- Assistant Professor, Department of Nursing, School of Nursing and Midwifery, Nursing Care Research Center in Chronic Diseases, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
- 2. Department of Nursing, School of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
- 3. Faculty instructor, Department of Nursing, School of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.
- 4. Assistant Professor, Department of Biostatistics and Epidemiology, School of Public Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Mahbubeh Babazadeh,

MSc Student, Department of Nursing, School of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran. E-mail: mahbubehbabazadeh@gmail.com

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