Original Article

Factors associated with nurses' self-efficacy in clinical setting in Iran, 2013

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Abstract

Background: In nursing, self-efficacy is quite critical for skill performance. Some factors might influence and predict self-efficacy in nurses. Thus, the present study aimed to investigate self-efficacy and the factors predicting nurses' self-efficacy in clinical setting.

Materials and Methods: In this cross-sectional study, 264 nurses were selected from five hospitals affiliated to Shiraz University of Medical Sciences by stratified random sampling. General Self-efficacy Scale (GSE) was used to assess a general sense of perceived self-efficacy. The data were analyzed using one-way analysis of variance (ANOVA) and multiple regression analysis.

Results: The mean of self-efficacy in all the nurses was 29.78 [Standard Deviation (SD) = 5.82]. Moreover, the self-efficacy of the nurses with diploma, bachelor's, and master's degrees was 32.22 (SD = 6.21), 29.33 (SD = 5.68), and 32.00 (SD = 6.00), respectively. In addition, a significant difference was found between the nurses with bachelor's and diploma degrees regarding their self-efficacy (P = 0.01). Also, a significant relationship was found between self-efficacy and willingness to work in the nursing unit (F = 3.31, P = 0.01) and interest in the nursing field (F = 2.43, P = 0.04). The nurses who had more than 16 years of working experience in the field of nursing reported a better self-efficacy score. Overall, self-efficacy was predicted by the years of experience in the field of nursing (β =0.25, P = 0.009) and the interest in the nursing field (β = −0.15, P = 0.02).

Conclusions: This study indicated that the nurses with diploma degrees gained higher self-efficacy scores compared to those with bachelor's degrees. Changing the nursing curriculum and increasing the motivation in the nursing context might enhance the interest in the nursing field as well as the nurses' self-efficacy. Of course, other studies are recommended to be conducted to improve the nurses' self-efficacy.

Key words: Hospital, nursing staff, self-efficacy

Introduction

Self-efficacy is an individual's belief to organize and implement courses of action to achieve goals.[1] In fact, self-efficacy refers to one's belief about his or her ability to cope in certain situations.[2] In nursing, self-efficacy is quite critical for skill performance.[3]

In general, a nurse's self-efficacy is correlated with professional autonomy and empowerment.[4] Nurses with high levels of self-efficacy consider barriers as opportunities rather than threats.[4] Besides, the individuals with adequate belief in their self-efficacy aim at overcoming difficult situations rather than avoiding them.[5] They are better able to cope with particular situations and are more likely to perform a task until they excel in it.[1,2]

Self-efficacy makes a difference in people's thoughts, feelings, and actions.[6] The individuals with high levels of self-efficacy select to perform more challenging tasks,[6] start and continue activities, attain a positive outcome,[7] and set higher goals for themselves, eventually increasing their commitment to these goals.[6] Self-efficacy creates motivation[8] and improves performance.[8-10] Moreover, high levels of self-efficacy increase the sense of self-control and performances and helps one to perform tasks at a higher level.[8] Self-efficacy has an impact on performance through mediating the connection between previous exposures and actions.[11] On the other hand, the people who lack self-efficacy are more likely to face problems in conducting specific activities.[2]

In general, self-efficacy is affected by several factors. Self-efficacy is believed to be a dynamic construct which

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Submitted: 19-Nov-13; Accepted: 02-Sep-14

changes over time in response to new experiences, such as education and clinical experiences.[12] Social experiences influence self-efficacy and determine whether someone has high or low self-efficacy levels. Moreover, some variables predict self-efficacy. It has been reported as, "People's beliefs in their abilities to perform specific behaviors are an important predictor of how they are functioning in terms of choice behavior, effort expenditure, thought patterns, and emotional reactions."[13] Mastery experiences promote a feeling of confidence and an eventual feeling of self-efficacy. On the other hand, failure in tasks leads to a low level of self-efficacy.[6] Molinari and Monserud, in a study on 104 rural nurses in the northwest, reported that self-efficacy was associated with personal characteristics and that nurses who were older, experienced, and with urban backgrounds demonstrated higher efficacies when caring for people.[14] Although context and some social and physiological factors might affect self-efficacy[12] and identifying these factors and then performing effective interventions might improve self-efficacy, no studies were found evaluating the factors influencing self-efficacy in nurses. Therefore, the current study aims to examine self-efficacy as well as the factors predicting it in the clinical nurses. In fact, this study aims to assess the relationships between self-efficacy and some demographic characteristics (sex, age, and marital status), work experience (working hours in a week and years of working experience in the field of nursing), social factors (educational level, the university in which nurses continued their education, and work setting), and psychological factors (willingness to work in nursing units and interest in the nursing field). To make predictions of self-efficacy, regression analysis was used. An important feature of regression is that the higher the correlation between two variables, the more accurate the prediction will be. Thus, if the correlation between self-efficacy and another variable is perfect (i.e. if $r = 1.00$), by measuring only one, we can determine the value of the other.[15]

Materials and Methods

The present study was a cross-sectional one. The target population of the study consisted of all the nurses with diploma, bachelor's, and master's degrees. The samples were selected from five hospitals by stratified random sampling based on the hospital units and the number of nursing staff. Using a pilot study, a sample size of 260 nurses was determined for this study. The sample size was increased to 280 subjects to allow drop-outs.

This study was conducted in five hospitals (Namazee, Shahid Faghihi, Khalili, Shahid Chamran, and Shahid Rajaee) affiliated to Shiraz University of Medical Sciences (SUMS), Shiraz, southwest of Iran. These hospitals are big medical-surgical centers in Shiraz.

This study was approved by the Ethics Committee of SUMS. Written informed consents were also obtained from all the subjects. In the form, the aim of this study was explained to the nurses. It was also emphasized that participation in this study was voluntary, they had the right to withdraw at any time without giving any reasons, and participation/non-participation was not effective in the subjects' annual evaluation. Moreover, anonymity was maintained in data analysis.

The study data were collected using a form containing the socio-demographic characteristics, including sex, age, marital status, the university in which they continued their education, years of working experience in the field of nursing, educational level, work setting, working hours in a week, willingness to work in nursing units, and interest in the nursing field.

Moreover, General Self-efficacy Scale (GSE) was used to assess a general sense of perceived self-efficacy. The German version of GSE was developed by Matthias Jerusalem and Ralf Schwarzer in 1979. It was later revised and translated to 26 other languages by various co-authors.[16] The Persian version of GSE was developed by Ellie Nezami, Ralf Schwarzer, and Matthias Jerusalem in 1996 (http://userpage.fu-berlin.de/~health/persean.htm).

GSE consists of 10 items answered through a 4-point scale (1 = not at all true, 2 = hardly true, 3 = moderately true, 4 = exactly true).[16] The responses to the 10 items are summed up to yield the final score ranging from 10 to 40. It averagely takes 4 min to fill out this scale.[16]

Criterion-related validity of GSE has been reported in numerous studies where positive coefficients were demonstrated with favorable emotions, dispositional optimism, and work satisfaction. On the other hand, negative coefficients were indicated with depression, anxiety, stress, burnout, and health complaints.[16] In the subjects from 23 nations, the Cronbach's alphas ranged from 0.76 to 0.90, with the majority of the coefficients being above 0.80.[16] In one study in Hong Kong also, GSE demonstrated high Cronbach's alpha (0.89).[17] This scale has also been used in some studies in Iran.[18] In this study, the 2-week test–retest reliability of GSE in nurses was 0.85. Moreover, the Cronbach's alpha for the Persian version of self-efficacy in nurses was 0.89.

The study data were analyzed using the SPSS statistical software, version 16 (SPSS Inc, Chicago, IL). Descriptive

statistics, including mean (M) and Standard Deviation (SD), as well as frequency and percentage were used for the socio-demographic characteristics and the self-efficacy data. Besides, one-way analysis of variance (ANOVA) was used to determine the relationship between self-efficacy and educational level, years of working experience in the field of nursing, marital status, work setting, working hours per week, the universities in which the nurses were educated, willingness to work in the nursing unit, and interest in the nursing field. In addition, the associations between self-efficacy and sex and type of university were determined using independent sample *t*-test. Pearson's correlation coefficient was also used to examine the relationship between age and self-efficacy scores among the study nurses. Moreover, multiple regression analysis was employed to assess the factors predicting self-efficacy. $P < 0.05$ were considered as statistically significant.

It should be noted that before using ANOVA and independent sample *t*-test, their assumptions, such as normality and homogeneity of variance (equal variance), were examined. In this study, the distribution of the data was normal and the samples in the study groups had equal variance. Moreover, the four assumptions of multiple regression analysis, i.e. normal distributions of variables, relationship between dependent and independent variables, measuring variables without error (reliability), and equal variance in the groups' samples, were established in this study.

Results

The results of this study indicated that most of the subjects were female ($n = 209$, 79.2%). In addition, the subjects' age ranged from 20 to 52 years (mean = 31.72, SD = 6.86). The mean of working experience in the field of nursing was 8.33 years (SD = 6.88), ranging from less than 1 year to 34 years. The majority of the subjects had bachelor's degrees ($n = 213$, 84.2%). Besides, most of the participants were married ($n = 137$, 54.8%). Furthermore, 111 subjects (42.04%) worked in the medical wards and most of the nurses had been educated in state universities ($n = 153$, 76.8%). The mean of working hours in 1 week was 48.31 h (SD = 11.41), ranging from 30 to 100 h [Table 1].

As shown in Table 2, 133 subjects (53.2%) had moderate and high willingness to work in the nursing units. Moreover, 164 nurses (61.90%) reported moderate and high interest in the nursing field [Table 2].

Self-efficacy

The mean of self-efficacy in the nurses in the clinical setting was 29.78 (SD = 5.82). The highest and lowest scores of self-efficacy were 40 and 12, respectively.

Table 1: Socio-demographic characteristics of the nurses in this study

Variable	
Age	
Mean (SD)	31.72 (6.86)
Sex, *n* (%)	
Male	43 (17.1)
Female	209 (82.9)
Marital status, *n* (%)	
Single	111 (44.4)
Married	137 (54.8)
Divorced	2 (0.8)
Educational level, *n* (%)	
Diploma	31 (12.2)
Bachelor's degree	213 (84.2)
Master's degree	9 (3.6)
Type of university, *n* (%)	
State	153 (76.8)
Private	46 (23.2)
Work setting, *n* (%)	
Medical ward	66 (26.2)
Surgical ward	87 (34.5)
Intensive care unit	52 (20.6)
Emergency ward	35 (13.9)
OR and recovery	12 (8.4)
Years of nursing experience	
Mean (SD)	8.33 (6.88)
Working hours per week	
Mean (SD)	48.31 (11.14)

OR: Operation room, SD: Standard deviation

Table 2: The subjects' willingness to work in nursing units and interest in the nursing field

Variable	*n* (%)			
	High	Moderately	Slightly	No
Willingness to work in nursing units	21 (8.4)	112 (44.8)	97 (38.8)	20 (0.8)
Interest in the nursing field	42 (16.9)	112 (45.0)	77 (30.9)	18 (7.2)

In addition, the mean of self-efficacy in the nurses with diploma, bachelor's, and master's degrees was 32.22 (SD = 6.21), 29.33 (SD = 5.68), and 32.00 (SD = 6.00), respectively. The results of ANOVA indicated a significant difference among the nurses with different educational levels regarding the total mean score of self-efficacy ($F = 4.09$, d.f. $= 2$, $P = 0.01$). Besides, ANOVA with *post-hoc* least significant difference (LSD) test indicated that the mean difference between the nurses with bachelor's and diploma degrees was statistically significant (mean difference = 2.89;

$P = 0.01$). However, no significant difference was found between the nurses with bachelor's and master's degrees regarding self-efficacy (mean difference = 2.66; $P = 0.91$). Also, no significant difference was observed between the nurses with diploma and master's degrees regarding the mean difference of self-efficacy (mean difference = 0.22; $P = 0.17$).

The mean of self-efficacy was 30.46 (SD = 5.74) and 28.56 (SD = 5.61) in the nurses who had been educated in state and private universities, respectively, and the results of independent sample *t*-test indicated this difference to be statistically significant ($t = 1.97$, d.f. =196, $P = 0.04$).

As shown in Table 3, the highest and lowest mean scores of self-efficacy were related to the subjects who had ≥16 (31.86, SD = 5.49) and ≤5 years (29.44, SD = 5.50) of experience in the field of nursing, respectively. However, no significant relationship was demonstrated between the years of working experience in the field of nursing and self-efficacy (F = 2.22, d.f. =3, $P = 0.08$). Nevertheless, ANOVA with *post-hoc* LSD test indicated a statistically significant difference between the nurses who had ≥16 and ≤5 years of experience in the field of nursing regarding self-efficacy (mean difference = −2.42; $P = 0.02$). On the other hand, no significant difference was observed between the nurses with ≤5 and 6–10 years of working experience (mean difference = 0.54; $P = 0.55$), as well as between those with ≤5 and 11–15 years of experience (mean difference = −0.28; $P = 0.79$) in this regard.

The present study results revealed no association between the total score of self-efficacy and sex ($t = -1.50$, d.f. = 250, $P = 0.13$), age ($r = 0.03$, $P = 0.64$), marital status (F = 0.14, d.f. =2, $P = 0.86$), work setting (F = 1.11, d.f. =4, $P = 0.35$), working hours per week (F = 1.22, d.f. =2, $P = 0.29$), and the universities in which the nurses were educated (F = 1.42, d.f. =3, $P = 0.23$).

However, self-efficacy was associated with the willingness to work in the nursing unit (F = 3.31, d.f. =4, $P = 0.01$) and the interest in the nursing field (F = 2.43, d.f. =4, $P = 0.04$).

Predictors of self-efficacy

In this study, multiple regression analysis was used to determine the contribution of each variable to self-efficacy in nurses. The predictor variables were interest in the nursing field, years of experience in the field of nursing, work setting, working hours per week, marital status, and educational level. The results of multiple regression analysis indicated that 24% of the variance of self-efficacy was explained by these variables. In addition, self-efficacy was predicted by the years of experience in the field of nursing ($\beta = 0.25$, $P = 0.009$) and the interest in the nursing field ($\beta = -0.15$, $P = 0.02$). However, other variables showed no contribution to prediction of self-efficacy [Table 4].

Discussion

The present study aimed to determine self-efficacy and the factors associated with it in nurses. The study results indicated that the nurses with various educational levels gained different self-efficacy scores. The nurses who had more than 16 years of working experience in the field of nursing, the nurses with diploma degrees, and those who had been educated in state universities had better self-efficacy scores. In addition, self-efficacy was associated with the willingness to work in the nursing unit and interest in the nursing field.

According to the study results, the mean of self-efficacy in the clinical nurses was 29.78 (SD = 5.82). In a study on 777 nursing and midwifery students, Lauder *et al*. reported the mean score of general self-efficacy to be 30.67 (SD = 3.42).[11] In our study, the mean score of self-efficacy in the nurses educated in state universities was similar to that found by Lauder *et al*.[11] However, the mean score of self-efficacy in the study population was

Table 3: Comparison of mean of self-efficacy among the nurses with different years of experience in the field of nursing

Years of experience in the field of nursing	*n* (%)	Self-efficacy Mean (SD)	ANOVA; *P* value
≤5	113 (46.1)	29.44 (5.50)	F=2.22, d.f.=3, *P*=0.08
6-10	60 (24.5)	28.90 (6.26)	
11-15	34 (13.9)	29.73 (6.13)	
≥16	38 (15.5)	31.86 (5.49)	

Table 4: Predictors of self-efficacy in the nurses (*N*=264; results of a multiple regression analysis)

Model	Unstandardized coefficients		Standardized coefficients		
	β	Std. error	β	*t*	Sig.
Interest in the nursing field	−0.843	0.364	−0.158	−2.316	0.021*
Years of experience in the field of nursing	0.218	0.083	0.252	2.618	0.009*
Work setting	−0.081	0.077	−0.071	−1.052	0.294
Working hours per week	0.064	0.038	0.120	1.655	0.099
Marital status	−0.916	0.855	−0.080	−1.072	0.285
Educational level	−1.052	1.020	−0.068	−1.031	0.304

Dependent variable: self-efficacy. *Significant

lower than that reported by Lauder *et al*. This might be due to the fact that approximately half of the subjects in our study had ≤5 years of working experience in the field of nursing and one-fourth of them were educated in private universities.

The findings of the current study showed a difference among the nurses with diploma, bachelor's, and master's degrees regarding the total mean score of self-efficacy. The nurses with diploma degrees showed higher self-efficacy compared to those with bachelor's degrees. In general, the nurses with bachelor's degrees attend more multidimensional and complex tasks in comparison to those with diploma degrees. It should also be mentioned that allocation of duties to the nurses with diploma and bachelor's degrees is poorly differentiated.[19] This lack of distinction might have a negative impact on self-confidence and self-esteem of the bachelor's degree nurses. Therefore, this relationship between self-efficacy, and self-confidence and self-esteem[6] might have led to a decrease in the self-efficacy of the nurses with bachelor's degrees compared to those with diploma degrees.

This study revealed a significant difference between the nurses who had ≥16 and ≤5 years of working experience in the field of nursing regarding self-efficacy. Moreover, the number of years of experience in the field of nursing was the greatest predictor of self-efficacy. This finding was in line with the results indicating a positive relationship between years in function as mental health nurses and self-efficacy beliefs.[19] Also, our study is consistent with several studies which indicated that clinical experience was an important factor in creating clinical confidence in nurses.[20,21]

The findings of the current study demonstrated that self-efficacy was correlated with the willingness to work in the nursing unit as well as interest in the nursing field. Moreover, interest in the nursing field predicted self-efficacy. Ben Natan *et al*. reported that perceived self-efficacy influenced the nurses' willingness to work in the event of an earthquake. Besides, high perceived self-efficacy, level of knowledge, and experience predicted the willingness to work in the event of an earthquake.[22] Generally, self-efficacy beliefs affect how people think, feel, motivate, and act. The individuals' beliefs in their abilities to perform certain behaviors are an important predictor of how they perform regarding choice behavior, thought patterns, and emotional reactions.[13] It is possible that higher self-efficacy improves the willingness to work in the nursing unit or improvement of the willingness to work in the nursing unit leads to good self-efficacy.

The nurses in this study were selected from five hospitals affiliated to SUMS. However, one of the limitations of this study was its cross-sectional design. In order to assess self-efficacy as well as its association with patients' outcomes, performing other longitudinal studies for 10 years could be effective.

Future investigations are also suggested to determine how interventions can help to improve the nurses' self-efficacy. Besides, further studies are recommended to be conducted in order to assess what other variables are related to self-efficacy in nurses. Comparison between the nursing students and nurses' self-efficacy is suggested, as well. It is also preferable to conduct a qualitative study to determine how willingness to work in the nursing unit could affect self-efficacy.

Conclusion

The results of this study showed that the nurses with diploma degrees gained higher self-efficacy scores compared to those with bachelor's degrees. This issue is recommended to be assessed in another study. Since self-efficacy was predicted by the interest in the nursing field, by changing the nursing curriculum and increasing the motivation in the nursing context, it might be possible to enhance the interest in the nursing field and improve the nurses' self-efficacy. Moreover, since the nurses who had been educated in private universities showed lower self-efficacy, the managers of these universities are suggested to assess the causes of this issue and try to improve the students' and, thereby, the nurses' self-efficacy. Furthermore, this study indicated that higher experience in the field of nursing led to improvement of self-efficacy. It is recommended that these experiences be shared with the nurses who have less working experience. For evidence-based practice, other studies are needed to be conducted in order to improve self-efficacy.

Acknowledgement

This study was a research project financially supported by Shiraz University of Medical Sciences, Shiraz, Iran (92-01-21-5941). The authors also wish to acknowledge to the Student Research Committee of Shiraz University of Medical Sciences. Research Improvement Center of Shiraz University of Medical Sciences and Ms. A. Keivanshekouh are appreciated for improving the use of English in the manuscript. The authors also would like to thank zianab Rezaei, Rahele Niksirat, Mina Khalili and Mohadeseh Saedi for data collection.

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How to site: Soudagar S, Rambod M, Beheshtipour N. Factors associated with nurses' self efficacy in clinical setting in Iran, 2013. Journal of Nursing and Midwifery Research 2015;20:226-31.

Source of Support: Shiraz University of Medical Sciences. **Conflict of Interest:** There is no conflict of interest to disclosure.