



Is Professional Self-concept Associated With Stress Among Nursing Students in Clinical Setting: A Descriptive Correlational Research

Azizeh Barry¹, Kobra Parvan¹, Faranak Jabbarzadeh Tabrizi^{1*}, Parvin Sarbakhsh², Bagher Safa¹

Abstract

Objectives: Professional self-concept is the individual's perception of himself/herself as a professional person. Stress is considered a common phenomenon in nursing education due to the nature of clinical environments. However, the relationship between these two variables is unclear in the review of the literature. Accordingly, this study aimed to assess the correlation between professional self-concept and stress among nursing students in clinical environments.

Materials and Methods: The present descriptive correlational study was conducted, between the second and the eighth semesters, on 154 nursing students who were selected using the stratified random sampling technique. Based on the purpose of the study, the Cowin's 36-item questionnaire of professional self-concept and Cohen's perceived stress scale (PSS) were used to collect the required data. Finally, data were analyzed by SPSS using the Pearson correlation coefficient (or Spearman correlation coefficient in case of non-normality of the variables).

Results: The overall mean score of professional self-concept in nursing students was 210.80 ± 37.41 . In addition, the highest and lowest scores were related to the seventh and second semesters, respectively. Further, the correlation coefficient of the total score of professional self-concept with the total score of stress was equal to -0.31 , which is considered significant ($P < 0.001$).

Conclusions: In general, a statistically significant correlation was observed between the professional self-concept and stress among the nursing students. In other words, a higher professional self-concept was associated with a reduction in the level of stress. Therefore, lower professional self-concept can be one of the possible causes of stress among the students. As a result, designing and implementing interventions are considered essential in promoting professional self-concept among nursing students.

Keywords: Self-concepts, Stressful events, Nursing student

Introduction

Self-concept refers to an individual's description of his/her own characteristics (1). According to Shavelson, it is a hierarchical phenomenon. At the first level, there is a general self-concept. The general self-concept is a set of beliefs that a person has about himself/herself, which is relatively difficult to change. The second level is divided into academic and non-academic levels (2). The occupational or professional self-concept can replace academic self-concept with a person's maturity (3). Professional self-concept is regarded as a person's perception of himself/herself as a professional, which influences his/her thinking, role development, behavior, and professional performance (4). It seems that a number of the academic disciplines and professions require a higher self-concept, among which nursing is of greater importance in this regard.

Due to the nature of clinical environments, nursing students' mental and psychological health is affected by stress which is a common phenomenon in nursing

education (5). In addition, the level of stress perceived by the students is the most significant factor during their study period in clinical environments. Further, stress can cause a feeling of inefficiency in students leading to consequences such as negative effects on the formation and development of professional identity among the students (6,7).

In a review of the literature, some studies were found focused on measuring the self-concept in nursing students (8,9). Several other experimental studies focused on developing the students' self-concept (2). Based on several previous studies, there is a positive correlation between self-concept and the concepts of students' self-esteem and self-efficacy (10), caring perception (11), clinical performance (12), and motivation (13). However, no study was found to address the association between professional self-concept and stress in nursing students in the review of the literature.

Cowin emphasized the need to measure this concept by instruments specifically designed to measure Shavelson's

Received 5 September 2018, Accepted 8 February 2019, Available online 1 March 2019

¹Department of Medical Surgical Nursing, Faculty of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran. ²Department of Statistics and Epidemiology, Faculty of Health Science, Tabriz University of Medical Sciences, Tabriz, Iran.

*Corresponding Author: Faranak Jabbarzadeh Tabrizi, Tel/Fax:+984134770648, Email: jabbarzadehf@tbzmed.ac.ir



hierarchical model. Cowin developed his own instrument based on the above-mentioned model and recommended that correlational studies can investigate the role of self-concept in the nurses' level of stress, job satisfaction, and the like employing this instrument. Furthermore, he believed that such studies are helpful in solving the problem of discovering the causes of unwillingness to work (be employed) or leaving a job among the nurses (14). Now, these questions arise that whether, based on the Cowin's model, nursing students' perception of themselves as professional individuals is related to the level of their stress? Or can improvements in professional self-concept change the students' stress levels in clinical environments? Accordingly, based on the above-mentioned explanations, the present study sought to investigate the relationship between the professional self-concept of the nursing students and their level of stress (tension).

Materials and Methods

Study Design and Setting

The current research was a descriptive correlational study which was implemented in Tabriz University of Medical Sciences.

Sample

The population of the study included all the nursing students who were studying between the second and the eighth semesters. A total of 154 nursing students were selected employing the stratified random sampling method while the required sample size was calculated to be 124 using the following formula.

$$N = [(Z_{1-\alpha} + Z_{1-\beta}) / C] 2 + 3$$

The standard normal deviate for $\alpha = Z_{1-\alpha} = 1.960$

The standard deviate for $\beta = Z_{1-\beta} = 0.842$

$$C = 0.5 * \ln [(1 + r) / (1 - r)] = 0.255$$

However, it was increased to 154 students considering a 20 % chance of attrition for the incomplete questionnaires and based on the correlation of 0.25, the power of 80 %, and type I error of 5 %.

Each semester was considered one stratum, and the research samples were equally divided across seven semesters since the number of students in each semester was relatively equal. A sample of 22 students was considered for each semester who were selected upon visiting each class in which the majority of students were present. Therefore, the number of students in each class was divided by 22 and the questionnaires were distributed among every other two-three students in the order of sitting from the right-hand side.

Inclusion criteria encompassed studying between the second and the eighth semesters and not suffering from mental illnesses such as anxiety and depression based on data regarding the history of drug use obtained by asking questions from the participants.

Moreover, exclusion criteria included failure to

completely respond to the questionnaire items as well as pass the internship based on the clinical education program.

Instruments

The questionnaire contained three parts. The first part was related to the demographic characteristics of the students, namely, data about the participants' age, sex, and the like. The second and third parts included the Cowin's 36-item questionnaire regarding professional self-concept and Cohen's perceived stress scale, respectively.

Professional Self-concept Scale

This questionnaire was designed by Cowin to evaluate and assess the professional self-concept of the nurses based on a hierarchical model of self-concept. This scale contained 36 questions including 6 dimensions, namely, self-esteem, caring, knowledge, communication with colleagues, communication, and leadership. Values 1 to 8 were assigned to the responses provided for the items. To obtain the score of each sub-scale, the scores of all the terms related to that sub-scale were added together. Additionally, the scores of all the items were added together in order to obtain the overall score of the test. The higher score indicated better self-concept (14). Validity and reliability of the instrument were approved by previous studies in order to be used for nursing students in Iran and other countries (15).

Standard Stress Scale

This scale was developed by Cohen in 1998. It included 24 items which measured the students' stress level on a four-point Likert-type scale. Scores ranged from 1 to 4. The highest score indicated the highest levels of stress in students' clinical experiences. The Persian version represented reliability of 0.82 (16). In the present study, the reliability of the questionnaires, with the Cronbach α coefficient, was estimated to be 0.83 and 0.89 for Cowin's 36-item questionnaire and Cohen's questionnaire, respectively.

Data Analyses

Data were analysed using the SPSS software, version 16. In addition, symmetric quantitative and skewed quantitative data were reported as mean and standard deviation, as well as median and interquartile range. Further, the Pearson correlation coefficient was used to examine the relationship between professional self-concept and stress. Furthermore, multivariate regression analysis was applied to investigate their relationship with adjustment for potential confounding factors such as age, gender, and the like. The significance level of all these tests was considered $P < 0.05$.

Results

Based on the findings of the study, the age range of the

research participants was 21.98 ± 1.84 years old. The demographic characteristics of the students are shown in Table 1. The total mean score of the students' stress was 47.85 ± 16.07 and the mean score of professional self-concept was 210.80 ± 37.41 (Table 2). Figure 1 illustrates the mean scores of stress and professional self-concept in terms of the academic semester. Based on the results of this study, the lowest mean score of the stress (46.59 ± 11.84) and the highest mean score of professional self-concept (224.68 ± 41.22) were related to the eighth semester. The correlation coefficient between the total score of professional self-concept and that of stress was -0.33 , which was significant ($P < 0.001$), indicating that the increased self-concept decreased the stress level. Finally, staff communication (communication with colleagues), among the other dimensions of professional self-concept, had the highest correlation coefficient with the stress. In other words, the students' stress decreased by increasing staff communication (Figure 1).

Discussion

The mean score of nursing students' professional self-concept in the present study was 210.80 ± 37.41 which is not within the desirable range (36-288). In most of the studies conducted in Iran and abroad, students' self-concept was reported to be moderate (17) or low (18). This can indicate a weakness in the educational and managerial system of the nursing profession. In fact, it is the nursing education that brings specific beliefs and attitudes towards oneself, colleagues, and other members of the health care team (19).

In this study, self-esteem had the lowest average

Table 1. Demographic Characteristics of the Students

Variables	Type	No. (%)	Mean \pm SD
Sex	Male	100 (64.9)	1.6494 ± 0.47873
	Female	54 (35.1)	
Marital status	Single	137 (89.5)	1.1169 ± 0.34201
	Married	16 (10.5)	
Nationality	Azeri	130 (84.4)	1.2857 ± 0.68327
	Persian	4 (2.6)	
	Kurd	20 (13)	
Habitation	Native	77 (50.3)	1.5065 ± 0.51445
	Non-native	76 (79.7)	
Term	Two	22 (14.3)	5.00 ± 2.00
	Three	22 (14.3)	
	Four	22 (14.3)	
	Five	22 (14.3)	
	Six	22 (14.3)	
	Seven	22 (14.3)	
	Eight	22 (14.3)	
	Age (y)	-	

Table 2. Professional Self-concept and Tension of the Nursing Students

Dimensions	Number	Mean \pm SD	Minimum	Maximum
Professional	154	210.80 ± 37.41	87.00	278.00
Tension	154	47.85 ± 13.18	24.00	93.00

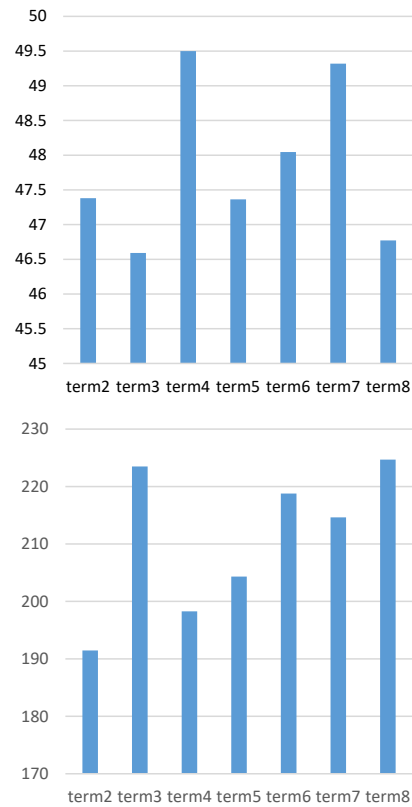


Figure 1. Stress levels in different terms (A); Professional self-concept levels in different terms (B).

distance compared to other areas. In the study by Badiyepymaie Jahromi et al (18), the minimum and maximum scores were related to the aspects of self-esteem and communication. However, in other studies by Hensel & Stoelting-Gettelfinger and Cowin & Hengstberger-Sims, the highest scores belonged to self-esteem (9, 20).

The undergraduate nursing course in Iran includes 8 semesters and students' internship credits begin from the second semester. Comparing the scores at the beginning of the internship period (second semester) and its completion (eighth semester) revealed that the mean score of the professional self-concept increased while that of the stress decreased compared to the second semester. However, as displays in Figure 1, considering bar chart (A), it seems that the level of the students' stress is not associated with any stress fluctuations during the course. Based on the results of a study in Australia, students had lower levels of stress in the first year compared to other academic years (19). However, the findings of another study revealed that nursing students had lower levels of stress in higher semesters (5). Moreover, factors such as lack of adequate skills and appropriate professional competence, as well as the patient's uncertainty about the possible causes of high levels of stress were reported at the onset of the related clinical course (21). According to the authors of the present study, the above-mentioned differences may have various reasons. For example, students experience some degree of

stress at the beginning of a clinical course. However, in the third semester, the level of stress decreases due to the normalization of bedside attendance or its level can change because of the expectation of different educators regarding the independent performance of the students. As a result, further comprehensive studies, especially the qualitative types are recommended for comprehensive analysis of factors which increase or reduce the level of students' professional self-concept and stress. However, based on the results of the current study, the authors believe that the coincidence of the increase or decrease of the students' professional self-concept with their level of stress is very important. As shown in Figure 1, the students' stress levels are low in any semester during which the students have a high level of professional self-concept and vice versa (e.g., the comparison between the third and fourth semesters). Therefore, educators are required to pay attention to the importance of students' self-concept as professional individuals since it is essential in their perceived levels of stress during clinical courses. Additionally, in this study, the correlation coefficient between stress and professional self-concept was significant (-0.31). Given the obtained figure, the intensity of the correlation is moderate.

Self-concept is a complex abstract concept and thus this intensity of correlation is predictable due to its abstract nature and actually seems appropriate. In several studies, self-concept of the employed nurses was recognized as an important factor in their job satisfaction, burnout, lay-off, and stress levels (14,22), which is consistent with the results of the present study. Cowin believed that the professional self-concept was more specific in the Shavelson's hierarchical model than in the general self-concept. Therefore, he emphasizes conducting studies using specialized self-concept instruments (14). Accordingly, in the current study, the correlation between professional self-concept and stress was examined, based on the framework of the Shavelson-Cowin model, and confirmed using a specialized instrument.

In addition, the lowest intensity regarding the correlation between self-concept and stress was related to the self-esteem subscale while the highest intensity belonged to the staff communication. It should be noted that self-concept involves the facts while self-esteem encompasses a sense of value and respect (23). In fact, in the present study, self-esteem was equivalent to the sense of value and respect perceived by the students as part of their self-concept, which had the lowest correlation intensity with stress (tension). As the concept of self-esteem, in contrast to self-concept, has a great value, some researchers defined it based on this notion and considered the dimensions and attitudes of these 2 concepts separately (24). This may be the reason for the obtained results (i.e., the existence of boundaries between self-concept and self-esteem).

Further, the results indicated that the highest correlation coefficient was associated with staff communication. Sheu et al reported the inability to communicate with nurses

as one of the most important stressors among senior students (25), which seems to be in line with the results of the present study. Furthermore, lack of a positive professional identity is believed to cause a weakness in students' self-confidence leading to a problem in establishing their interpersonal communication. As the professional self-concept increases, the students' interpersonal communication decreases (26,27). Interpersonal communication skills have the greatest impact on self-concept. Therefore, communication and problem-solving skills can be used to improve professional self-awareness (17).

Conclusions

In general, based on the results of the present study, there was a moderate and reverse correlation between nursing students' professional self-concept and stress. The high self-concept was associated with a reduction in tension. Therefore, decreased self-concept could be regarded as one of the possible causes of the students' stress (tension). The results of the present study can help solve the causes associated with stressors in nursing students. In other words, after improving the students' professional self-concept, some changes are expected in the level of their stress in clinical environments. Accordingly, nursing educators should attempt to provide nursing students with an appropriate level of professional self-concept. Moreover, interventional studies regarding the students' self-concept and its impact on their level of stress are subject to further investigation. Accordingly, interventions can be designed to promote professional self-concept among nursing students.

Limitations of the Study

The research participants probably failed to reflect their true feelings while answering the questions. However, since the content of the questionnaire was completely confidential and had no effect on the evaluation, it was partially controlled. Moreover, self-evaluation method was employed to measure the psychological variables of the students. Therefore, researchers are suggested to apply interviews and clinical examinations along with self-reporting tools in order to diagnose the students' psychological problems in future studies.

Conflict of Interests

Authors have no conflict of interests.

Ethical Issues

The present study is based on a research project approved by the Ethics Committee of Tabriz University of Medical Sciences under the ethical code of 1396.122.

Financial Support

This study was funded by Tabriz University of Medical Sciences.

Acknowledgements

The authors would like to thank the authorities of Tabriz University of Medical Sciences and the Faculty of Nursing and Midwifery as well as the students who participated in this study.

References

1. Chu YW. The relationships between domain-specific self-concepts and global self-esteem among adolescents in Taiwan. *Educ Psychol.* 2002;33(2):103-123. doi:10.6251/BEP.20010629. [Chinese].
2. Marsh HW, Shavelson R. Self-concept: Its multifaceted, hierarchical structure. *Educ Psychol.* 1985;20(3):107-123. doi:10.1207/s15326985ep2003_1.
3. O'malley PM, Bachman JG. Self-esteem and education: Sex and cohort comparisons among high school seniors. *J Pers Soc Psychol.* 1979;37(7):1153-1159. doi:10.1037/0022-3514.37.7.1153
4. Cowin LS, Johnson M, Craven RG, Marsh HW. Causal modeling of self-concept, job satisfaction, and retention of nurses. *Int J Nurs Stud.* 2008;45(10):1449-1459. doi:10.1016/j.ijnurstu.2007.10.009
5. Labrague LJ. Stress, stressors, and stress responses of student nurses in a government nursing school. *Health Sci J.* 2013;7(4):424-435.
6. Arthur D. Measuring the professional self-concept of nurses: a critical review. *J Adv Nurs.* 1992;17(6):712-719.
7. Cowin LS, Craven RG, Johnson M, Marsh HW. A longitudinal study of student and experienced nurses' self-concept. *Collegian.* 2006;13(3):25-31. doi:10.1016/S1322-7696(08)60529-6
8. Kelly S, Courts N. The professional self-concept of new graduate nurses. *Nurse Educ Pract.* 2007;7(5):332-337. doi:10.1016/j.nepr.2006.10.004
9. Hensel D, Stoelting-Gettelfinger W. Changes in stress and nurse self-concept among baccalaureate nursing students. *J Nurs Educ.* 2011;50(5):290-293. doi:10.3928/01484834-20110131-09
10. Jeon MK. Factors influencing professional self-concept among nursing students. *Korean Journal of Health Service Management.* 2013;7(4):119-129. doi:10.12811/kshsm.2013.7.4.119
11. Woo HY, Tak YR. Professional self-concept and caring perception in nursing students. *Adv Sci Technol Lett.* 2015;88:79-82. doi:10.14257/astl.2015.88.17
12. Poorgholami F, Ramezanli S, Kargar Jahromi M, Badiyepymaie Jahromi Z. Nursing students' clinical performance and professional self-concept. *Bangladesh J Med Sci.* 2016;15(1):57-61. doi:10.3329/bjms.v15i1.22118
13. Yilmaz FT, Sabancıogulları S, Kumsar A. Motivation in the First Year of Nursing Education: It's Relationship with Professional Self-Concept, Self-Esteem. *Arch Nurs Pract Care.* 2016;2(1):50-56. doi:10.17352/anpc.000014
14. Cowin L. Measuring nurses' self-concept. *West J Nurs Res.* 2001;23(3):313-325. doi:10.1177/01939450122045177
15. Angel E, Craven R, Denson N. The nurses' self-concept instrument (NSCI): a comparison of domestic and international student nurses' professional self-concepts from a large Australian University. *Nurse Educ Today.* 2012;32(6):636-640. doi:10.1016/j.nedt.2011.09.006
16. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *J Health Soc Behav.* 1983;24(4):385-396. doi:10.2307/2136404
17. Najafi SS, Rabiei Golmakani R, Moattari M, Momennasab M. Study of professional self -concept of nursing students of Shiraz University of medical science. *Int Res J Appl Basic Sci.* 2014;8(11):1916-1921.
18. Badiyepymaie Jahromi Z, Jahanbin I, Sharif F, Ghodsbin F, Keshavarzi S. Investigation of the professional selfconcept of nursing students in Shiraz, Iran. *Cent Eur J Nurs Midwifery.* 2014;5(3):112-116. doi:10.15452/CEJNM.2014.05.0005
19. Lo R. A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: an Australian case study. *J Adv Nurs.* 2002;39(2):119-126. doi:10.1046/j.1365-2648.2000.02251.x
20. Cowin LS, Hengstberger-Sims C. New graduate nurse self-concept and retention: a longitudinal survey. *Int J Nurs Stud.* 2006;43(1):59-70. doi:10.1016/j.ijnurstu.2005.03.004
21. Pagana KD. Stresses and threats reported by baccalaureate students in relation to an initial clinical experience. *J Nurs Educ.* 1988;27(9):418-424.
22. Dewe PJ. Identifying the causes of nurses' stress: A survey of New Zealand nurses. *Work Stress.* 1987;1(1):15-24. doi:10.1080/02678378708258477
23. Frank MA. The pillars of the self-concept: Self-esteem and self-efficacy. <https://www.excelatlife.com/articles/selfesteem.htm>. Published 2011.
24. Fleming JS, Courtney BE. The dimensionality of self-esteem: II. Hierarchical facet model for revised measurement scales. *J Pers Soc Psychol.* 1984;46(2):404-421. doi:10.1037/0022-3514.46.2.404
25. Sheu S, Lin HS, Hwang SL. Perceived stress and psychosocial status of nursing students during their initial period of clinical practice: the effect of coping behaviors. *Int J Nurs Stud.* 2002;39(2):165-175. doi:10.1016/S0020-7489(01)00016-5
26. Ware SM. Developing a self-concept of nurse in baccalaureate nursing students. *Int J Nurs Educ Scholarsh.* 2008;5:Article5. doi:10.2202/1548-923x.1500
27. Kantek F, Simsek B. Factors relating to professional self-concept among nurse managers. *J Clin Nurs.* 2017;26(23-24):4293-4299. doi:10.1111/jocn.13755

Copyright © 2019 The Author(s); This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.