

# Assessment the effect of the CBT on motivation of the nursing students

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## ABSTRACT

**Background:** Motivation to academic achievement is critical for students of medical sciences, particularly nursing students. It is directly related to high levels of achievement and quality of life. Accordingly, diminished motivation would result in academic decline, study and work desertion and exhaustion. Therefore, this study aimed to investigate the effect of cognitive behavioural intervention on the motivation for academic achievement of the nursing students.

**Materials and Methods:** This study was conducted on 64 female nursing students who were recruited to study based on the inclusion criteria. After sampling, the subjects were randomly assigned to study and control groups. Then, cognitive behavioural intervention was administered in study group during 60 days. Academic motivation scale was filled before, after and one month after the intervention. Data were analyzed by descriptive and inferential statistical tests (Chi-square, *t*-test).

**Results:** After the intervention, mean scores of academic motivation were significantly increased in study group, compared to control group ( $P < 0.001$ ). Comparison of the mean scores of academic motivation in two groups revealed a significant increase in mean score of academic motivation 151.50 (20.22) after cognitive behavioural intervention ( $P < 0.001$ ).

**Conclusions:** The findings suggested that cognitive behavioural intervention was a valuable psychotherapy technique to improve academic achievement motivation among nursing students.

**Key words:** Achievement motivation, cognitive behavioral intervention, cognitive therapy, motivation, Iran, nursing, nursing students

## INTRODUCTION

Experts predict that human factors will account for the highest percent of societies in a close future. To manage and succeed in this regard, training students with motivation is needed, as they are the generation making the future. When this point is not taken into close consideration, the great human forces that found a country will be wasted. Education without interest and motivation has no products. In fact, motivation is the key element and a predictive factor for the students' learning and has a high impact on their learning.<sup>[1]</sup> One of the educational investments in any society is the students whose motivation plays a pivotal role in development and progression of a society. Medical sciences students, especially nursing

students, form a group in which motivation is essential. A diminished motivation in nursing students, who are involved in human's life, has numerous impacts on public health through the problems it causes for the nurses themselves leading to resources waste.<sup>[2]</sup> Research showed that only 13.7% of the medical sciences students have appropriate motivation.<sup>[3]</sup> Rouhi *et al.*, in a study on educational motivation and its association with some factors in medical sciences students, showed lower a moderate motivation in 46.9% of the students that needed close attention of educational authorities.<sup>[4]</sup> Research shows that a decrease in motivation or lack of motivation in nursing students is one of the major causes for nursing students and staff's turnover.<sup>[5]</sup> About 15-20% of nursing students annually leave their education in the world, which results in a shortage in nursing personnel and negatively affects educational and professional motivation of other nursing students.<sup>[2]</sup> Research shows that nursing programs are one of

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the most expensive high educational programs that impose a high financial burden to educational system and put the health services in shortage of nursing forces.<sup>[2]</sup> Based on research, 30% of the nursing students study nursing with no motivation.<sup>[6]</sup> Dehbozorgi indicated that lack of educational motivation is one of the causes for students' dropout, and stated that lowered motivation in education not only causes academic decline and financial resources waste but also results in students' hopelessness and disappointment and predisposes them to psychological problems and social corruptions.<sup>[7]</sup> Various studies reported that proper work function is associated with having motivation, and the individuals with adequate motivation in their education and profession are more successful, and it consequently results in their job satisfaction.<sup>[8]</sup> With regard to the importance of motivation in formation of academic achievement, progression and job satisfaction as well as nursing students' self-confidence, and the pivotal role of nursing graduates in public health, the existence of high educational motivation in this group is of great importance. A review on the research on educational motivation in Iran shows that the researchers mostly focused on the association between this variable and academic achievement,<sup>[3,9,10]</sup> and some were on formation of motivation through making changes in educational environment,<sup>[11,12]</sup> but they ignored the students as the major factor in formation of motivation. It seems that to increase educational motivation, promotion of teachers' professional function and their familiarization with different educational motivation theories, improvement of learning and studying methods among the students and empowerment of supervisors' role, educating study skills, holding suggestions and complaints sessions for the students and application of various psychotherapy treatments can all play an efficient role.<sup>[13,14]</sup> One of the psychotherapy methods that can be applied in educational issues and their progression and focuses on clients' psychological aspects is cognitive behavioral treatment that is a method, based on formation of responses through mental but not physical effects. This method is adopted by psychologists and other health staff to promote individuals' positive and efficient changes and relieve their emotional suffers as well as discussing several behavioral, social and mental problems. Cognitive behavioral therapists diagnose and treat the problems, resulted from personal illogical thinking, wrong inferences, abnormal thoughts and defective learning.<sup>[15]</sup> Therefore, with regard to the important role of psychiatric nurses in preservation and promotion of individuals' mental health and as this group can conduct psychotherapy including cognitive behavioral interventions,<sup>[16]</sup> the present study aimed to investigate the effect of cognitive behavioural intervention on the motivation for academic achievement of the nursing students, with respect to key role of nursing students in improvement of quality and quality of health care, and consequently, individuals' and public

health to prevent waste of resources and costs, and achieve socio- economic development.

## MATERIALS AND METHODS

This is a quasi- experimental two- group, three- stage, before- after and one- month- after intervention field study that was conducted in nursing and midwifery school of Isfahan University of Medical Sciences in 2014 after approval of ethics committee. In this study, cognitive behavioral intervention was the independent variable and educational motivation the dependent variable. Study population comprised 120 semesters 3, 4, 5 and 6 female nursing students. Inclusion criteria were female students, no diagnosed mental disorders or diseases, no chronic or acute physical diseases, not attending to similar research projects and not being a conditioned student in the previous semesters. Subjects' mental and physical health was either confirmed by cooperation of counseling office in nursing and midwifery school, or by asking the subjects already attending similar research. Informed consent was obtained from the subjects. Exclusion criteria were dissatisfaction to cooperate with the study due to any reasons at any stage of the study, incorrect questionnaire completion and not attending in two sequential sessions. Sampling was random stratified, and the subjects were assigned to study and control groups through random allocation. Firstly, the list of female students studying in years 2 and 3 during school year 2012-2013 was inquired from vice- chancellery for education. To conduct the sampling through random stratified sampling, firstly the study population was divided into some sub- groups (semesters 3, 4, 5 and 6). Then, the subjects were selected from each sub-group based on its size. One hundred and twenty female students were selected ( $n = 30$  from semester 3;  $n = 30$  from semester 4;  $n = 30$  from semester 5 and  $n = 30$  from semester 6). The number of subjects in each sub- group was 25% of all subjects ( $n = 16$ ). After selection of the subjects in each sub- group, the subjects were randomly (draw lotto) assigned to study and control groups in such a way that the selected numbers were considered as study group.

A two-section questionnaire was adopted to collect the data. The first section was on subjects' demographic characteristics (including age, semester, average, marital status, family income and present residing status). The second section included Persian version of Academic Motivation Scale that has been designed to investigate the type of students' educational motivation. This scale has been designed by Walrand (1992) and investigates three sub- scales of external motivation, internal motivation and lack of motivation. It has 27 items as a self-report tool, scored in a seven- point Likert's scale (never = 1, always = 7), and the subjects should select one answer, associated to the reason for their going to university. Scores lower than 114 show poor educational

motivation, scores between 114-148 show moderate and scores over 148 show high educational motivation. With regard to its reliability, Walrand reported Cronbach alpha between 0.83-0.86. Cronbach alpha of internal consistency was not in this spectrum just for external motivation ( $\alpha = 0.62$ ). Reliability index, obtained by clinical trial method for sub- scale of educational motivation was reported between 0.71-0.83 during one month. Bohrani (2005) reported the reliability of this scale was  $\alpha=0.88$  through test re-test method, showing its high reliability. Warland confirmed factor analysis and seven- item structure of the scale that shows its validity.<sup>[11]</sup> The questionnaires were completed in three time points of before, after and one month after intervention by the subjects.<sup>[17]</sup> Confidentiality of the data was also guaranteed. After stratified sampling and random allocation of the subjects into study and control groups, the subjects were called through phone, briefing sessions were held by the researcher's supervisor and counselor, and after giving the subjects explanations, they signed a consent form. Then, cognitive behavioral therapy program was coordinated with the students in study group through phone calls. It included 8 ninety- minute weekly sessions including a 10-minute brake and 15 minutes to review previous home assignments (the work shit). In the present study, through a review over previous studies, automatic thoughts prevention educations, cognitive reconstruction, stress management, time management and communications management were adopted. Researcher conducted the sessions with co-operation and supervision of a counseling expert who attended in three sessions. Control group just received an educational pamphlet to be familiarized with automatic thoughts and the way to cope with them. To answer the students' questions and follow up, they were given a contact number. The collected data were analyzed by descriptive and inferential statistical tests (independent t- test, repeated measures AVOVA) through SPSS18.

To define and compare subjects' demographic characteristics including age (independent *t*-test), educational semester (Man-Whitney), average frequency (Man-Whitney), marital status (Chi-square test), income status (Man-Whitney) and frequency of residential status (Chi-square), related statistical test were used. Independent *t*-test was used to define and compare subjects' educational motivation mean scores between two groups before intervention. For after intervention, independent *t*-test and ANOVA were used. For intragroup comparison, paired *t*-test was used and for comparison in each group of study and control before, after and one month after intervention, repeated measures ANOVA was adopted.

### Ethical considerations

- Permission from the Research Department of Nursing and midwifery

- Agree and consent to participate in research by the participants
- With freedom of action available to participants to withdraw from the study at any time they wish.
- In writing and the use of scientific resources apply ethical principles.

### RESULTS

Results showed that means (SD) of subjects' age were 21.5 (1.3) and 22.4 (1.9) years in study and control groups respectively. Independent *t*-test showed no significant difference in subjects' age. The results showed no significant difference in marital status, family income status, residing status, average and students' semester, the groups were almost identical [Table 1]. Results also showed no significant difference in educational motivation before intervention between study and control groups ( $P = 0.64$ ). Results showed a significant difference in educational motivation mean scores before, after and one month after intervention ( $P < 0.001$ ). Paired *t*-test showed a significant difference in academic motivation before and after intervention ( $t = 5.71, P < 0.001$ ), but

**Table 1: Frequency distribution of semester, average, and family income, residing and marital status in study and control groups**

Variable	Study		Control		Statistics
	F	Percentage	F	Percentage	
<b>Semester</b>					
Three	8	25	8	25	Z=0.39
Four	8	25	11	34.4	P=0.85
Five	8	25	8	25	
Six	8	25	5	15.6	
<b>Average</b>					
12-14	5	15.6	7	21.8	Z=0.96
14-16	14	43.7	12	37.5	P=0.05
16-18	12	37	12	37.5	
18>	1	3.12	1	3.12	
<b>Income status</b>					
Lower than expenditures	5	15.6	2	6.25	Z=0.65
Adequate for expenditures	24	75	27	43.8	P=0.46
More than expenditures	3	9.3	3	9.37	
<b>Marital status</b>					
Married	28	87.5	29	90	P=0.50
Single	4	12.5	3	10	X <sup>2</sup> =0.10
<b>Residing status</b>					
Dormitory	14	43.7	16	50	P=0.70
Personal	18	56.3	16	50	X <sup>2</sup> =0.14
<b>Total</b>	<b>32</b>	<b>100</b>	<b>32</b>	<b>100</b>	

it showed no significant difference between after and one month after intervention. Academic motivation mean scores showed a significant difference one month after intervention, compared to before ( $t = 5.29, P < 0.001$ ) [Table 2]. LSD *post hoc* test showed a significant increase in academic motivation mean scores after and one month after intervention, compared to before intervention, while there was no significant difference in time points after and one month after intervention [Table 3].

## DISCUSSION

Based on the results, no significant difference was observed between study and control groups in baseline variables and academic motivation scores before intervention and the groups were almost identical. Other studies also showed no significant difference in subjects' demographic characteristics.

Kumar (2011), in a study on the effect of cognitive behavioral effect on students' self-efficacy and academic achievement in India, reported no significant difference in demographic characteristics (the groups were identical).<sup>[18]</sup>

**Table 2: Comparison of the means of academic motivation scores in study and control groups**

Motivation score	Study		Control		Independent t-test	
	Mean	SD	Mean	SD	T	P
Before intervention	121.6	24.8	123.50	16.30	0.46	0.64
Immediately after intervention	151.50	20.22	124.10	18.05	5.71	0.001
One month after intervention	148.50	14.03	124.70	20.50	5.29	0.001
Repeated measures ANOVA						
F	21.6		0.33		-	
P	0.001		0.967			

SD: Standard deviation, ANOVA: Analysis of variance

**Table 3: Means of academic motivation in two groups in different time points**

Group time	Study		Control		Independent t-test	
	Mean	SD	Mean	SD	T	P
Before	121.06	24.80	123.50	16.30	0.46	0.64
After	151.50	20.22	124.10	18.05	5.71	0.001
One month after	148.50	14.03	124.70	20.50	5.29	0.001
Repeated measures ANOVA						
F	21.6		0.33		-	
P	0.001		0.967			

SD: Standard deviation, ANOVA: Analysis of variance

In study of Asgharpoir *et al.* (2012), to study the effect of cognitive behavioral group therapy on students' self-esteem, teachers' style and students' depression, reported no significant difference in demographic characteristics between study and control group.<sup>[19]</sup> Independent *t*-test showed no significant difference in academic motivation mean scores between study and control groups before intervention, which was expected with regard to subjects' random allocation. Results showed that nursing students' academic motivation was moderate. Dalir, in a study on students' motivation in selection of nursing course, reported academic motivation as moderate, which was decreased during their education period.<sup>[20]</sup> Shakibae *et al.* (2005) showed that medical students' motivation was moderate. This level was not appropriate among nursing students who would have important professional responsibilities in future.<sup>[21]</sup> Asadzadeh *et al.* showed that nursing students' academic motivation was moderate,<sup>[22]</sup> which is in line with the present study. Our results showed that subjects' academic motivation showed a significant increase after cognitive behavioral intervention between study and control group, which lasted for one month after intervention. Zyromski and Joseph, in a study on the effect of cognitive behavioral intervention on students' academic achievement, showed a significant, which is consistent with the present study. They argued that most of the researchers in this field investigated cognitive behavioral intervention short-term effect whilst notable effects would appear in a longer period of investigation.<sup>[15]</sup> Venerates Komarolizasepastian, in a study on the effect of cognitive behavioral intervention on students' self efficacy and academic motivation, through sessions containing education and definition of self-efficacy and academic motivation, relaxation, automatic thoughts prevention, cognitive reconstruction and fighting with negative thought, problem solving and adaptation skills, showed that cognitive behavioral intervention caused a significant increase in students' self efficacy and cm scores. It was a two-group preset post test study, conducted on 100 students to evaluate the changes occurring within time. Their subjects attended 12 cognitive behavioral sessions during 90 days and completed self efficacy and academic motivation questionnaires respectively. In addition to cognitive techniques, they used education of relaxation, problem solving and adaptation skills.<sup>[18]</sup> In the present study, cognitive behavioral intervention was conducted in 8 sessions while in the above-mentioned study, it was conducted in 12 sessions. Asgharipoir, Wance, Jiang du also conducted cognitive behavioral intervention in 8 sessions.<sup>[18,23]</sup> Hyun and Chung conducted a study with goal of the effect of cognitive behavioral intervention on self efficacy, self-confidence and depression and showed a significant difference in scors of self-efficacy, self confidence and depression before and after intervention, which is consistent with the present study.<sup>[23]</sup> Taylor and

Montgomery, in a literature review, on the effect of cognitive behavioral intervention on increase of depressed students' self-confidence, believed cognitive behavioral intervention could act as a factor increasing self confidence in education and academic achievement.<sup>[24]</sup> Solomando *et al.* report that cognitive behavioral intervention plays a notable role in improvement of individuals' mental health.<sup>[25]</sup> Ahghar showed that cognitive behavioral intervention led to an improvement in students' mental health and steady changes in their behavior.<sup>[26]</sup> Eizadifard *et al.*, in a study on the effect of cognitive behavioral intervention on problem solving skills, reduction of exam anxiety signs and improvement of high school students' function, reported that cognitive behavioral intervention was effective on students' mental health improvement and their educational status. They conducted the study on 30 students in which study group underwent 10 sixty-minute sessions during 10 weeks of cognitive behavioral therapy and social skills education.<sup>[27]</sup> Foruzande and Delaram conducted a study on the effect of cognitive behavioral intervention on coping methods of non-medical students of Shahrkord University of Medical Sciences. They had cognitive behavioral group education in 8 two-hour sessions on three ten-member groups. Psychological interventions were conducted by a bachelor in psychology and counseling in the hospital. The program contained a checklist of daily function such as writing down the positive and negative thoughts, feeling about the thoughts and grading them, and finally, conclusion, and was in form of cognitive and behavior educations as self-recognition, cognitive reconstruction, teaching relaxation techniques, control and management of time and problem solving. In the end of each session, the subjects were given home assignment for the next session. Two weeks after the last cognitive behavioral therapy sessions, the subjects in study and control groups were investigated by coping questionnaire revealing that use of emotional reactions significantly decreased in study group ( $P = 0.001$ ).<sup>[28]</sup>

Berso *et al.*, in a study on the effect of self efficacy - based interventions on students' burnout and educational function, showed that cognitive behavioral intervention increased students' function while they had no effect on educational burnout.<sup>[29]</sup> All aforementioned studies were consistent with the present study. Based on our obtained results, cognitive behavioral intervention, conducted by psychiatric nurses, were effective on students' academic motivation and can be a proper method to improve their educational status. Generally, cognitive behavioral intervention led to positive results, control and treatment of the signs and symptoms of anxiety, depression and improvement of social and educational function as well as promotion of mental health. Therefore, it is recommended to spend more time (increase cognitive behavioral intervention time) and conduct

further studies in a longer period of time to increase the generalization index of the results.

## CONCLUSION

Results showed that cognitive behavioral intervention could help nursing students detect their thoughts, stimulating loss of motivation and modify their wrong logics and beliefs. Therefore, as nursing course is stressful and full of tension, resulted from its theoretical education and clinical experience, academic motivation methods seem to be efficient and helpful strategies to increase students' academic motivation and academic function. Based on our obtained results, it is suggested that the nursing educators, psychiatric nurses, counselors and psychologists use this method to increase students' academic motivation and function.

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