

# Efficacy of neurolinguistic programming training on mental health in nursing and midwifery students

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## ABSTRACT

**Background:** Neurolinguistic programming (NLP) refers to the science and art of reaching success and perfection. It is a collection of the skills based on human beings' psychological characteristics through which the individuals obtain the ability to use their personal capabilities as much as possible. This study aimed to investigate the efficacy of NLP training on mental health in nursing and midwifery students in Islamic Azad University Tehran Medical Sciences branch.

**Materials and Methods:** In this quasi-experimental study, the study population comprised all nursing and midwifery students in Islamic Azad University, Tehran Medical branch, of whom 52 were selected and assigned to two groups through random sampling. Data collection tool was Goldberg General Health Questionnaire (28-item version). After primary evaluation, NLP training was given in five 120-min sessions and the groups were re-evaluated. The obtained data were analyzed.

**Results:** In the nursing group, paired *t*-test showed a significant difference in the scores of mental health (with 39 points decrease), physical signs (with 7.96 scores decrease), anxiety (with 10.75 scores decrease), social function (with 7.05 scores decrease) and depression (with 9.38 scores decrease). In the midwifery group, it showed a significant difference in mental health (with 22.63 scores decrease), physical signs (with 6.54 scores decrease), anxiety (with nine scores decrease), and depression (with 8.38 scores decrease).

**Conclusions:** This study showed that NLP strategies are effective in the improvement of general health and its various dimensions. Therefore, it is essential to conduct structured and executive programs concerning NLP among the students.

**Key words:** Iran, mental health, midwifery, neurolinguistic programming, nursing

## INTRODUCTION

A review on the history of mental disorders shows their wide prevalence among human beings always. They are among the serious and common problems of today's world.<sup>[1]</sup> Psychologists have defined mental disorders as any deviation from mental health.<sup>[2]</sup> A glance on statistics reveals that mental disorders and abnormalities are affecting the humans at an increasing pace. The World Health Organization (WHO) in its report revealed that the incidence of mental disorders is 10% among the young adults.<sup>[3]</sup> Noorbala *et al.*, in a study on mental health among individuals >15 years of age ( $N = 19,370$ ) who were randomly selected, reported that 34.2% of the subjects had different types of mental disorders.<sup>[4]</sup> On the other hand, university students as a major social group and human

resource are the future investment in each society and their mental health is of great importance.

The above-mentioned statistics show a high prevalence of the disorders among university students. On the one hand, the university entrance process influences students' mental health through educational stressors, immigration to major cities, being far from the family, facing financial problems, etc.<sup>[5]</sup> On the other hand, if these students face an additional stress due to the stressful nature of their major, their mental health should be considered more. Among the stressful educational courses are nursing and midwifery. Based on a study on the association between mental health and educational stressors in nursing students of Kerman Nursing School in 2011, a quarter of students were suspected to have mental disorders.<sup>[6]</sup>

An increase in the number of students' referrals to counseling centers shows their social and cultural growth on one hand, as asking help is believed to be a sign for mental growth, but on the other hand, it reveals the disturbing factors decreasing students' academic performance. In a study conducted in private universities of Malaysia, 46.2% of students were reported to be affected by psychological disorders.<sup>[7]</sup> Therefore, experts of education, psychologists,

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sociologists, and educational policy makers should seek an appropriate pattern to facilitate students' overall growth and their mental health improvement. Provision of mental health is achieved by prevention and promotion of health. In this regard, realizing the need of humans, scientists tried to explore and reconstruct more humanistic methods consistent with human beings' psychological characteristics to reach their mental health. Therefore, in the recent past, some psychologists have turned to new educational and treatment methods, namely, neurolinguistic programming (NLP).<sup>[8]</sup> This program emphasizes that human behavior originates from neurological processes. In addition, a wide spectrum of human behaviors are mediated and regulated by human language. The importance of NLP lies in the fact that this programming is a collection of skills based on psychological characteristics of the human beings through which the individuals obtain the ability to use their personal capabilities as much as possible.<sup>[9]</sup> Research shows NLP is the science and art to reach success. Research conducted on NLP showed its positive effect on various dimensions.

A study proved the efficacy of NLP on students' general health and educational motivation.<sup>[10]</sup> Another study proved its effect on students' self-efficacy.<sup>[11]</sup> Sargolzaee *et al.*, in an article titled "Neurolinguistic methodology in controlling examination anxiety" reported that anxiety is one of the destructive factors of students' mental health in every level and can reduce educational function. They introduced NLP as one of the efficient methods to control pre-exam anxiety.<sup>[12]</sup> As mentioned earlier, students of medical group, including nursing and midwifery, tolerate high stress due to the stressful nature of their course, not only during their education but also at their working environment, and need decision making in critical situations. With regard to their various employment opportunities and working conditions in hospitals, which can affect their mental health, the researcher conducted a study with an aim to define and compare the efficacy of NLP training on mental health in nursing and midwifery students in Islamic Azad University, Tehran medical branch in 2011-2012.

## MATERIALS AND METHODS

This is a two-group before–after quasi-experimental study. The sample size was calculated as 30 subjects in each group by  $\alpha = 0.05$ ,  $Z = 1.96$ , and  $\delta = 0.80$ . Due to subjects dropping out of the study in the midwifery group, finally 52 subjects entered the study in both groups. The subjects were randomly selected from among nursing and midwifery students. Both groups were homogenous concerning age range, sex, education level, and the faculty and the university. Group comparison was conducted with regard to adequacy of sample size (based on sample size formula).

Inclusion criterion was passing no NLP course prior to study. Data collection tool was a two-section questionnaire. The first section was on personal characteristics including age, sex, course of study, year of entering university, marital status, place of birth, residence, head of household, parents' education and family monthly income, history of psychotropic drug, stimulants, and narcotics consumption, and history of a disastrous experience in the past 6 months. The second section consisted of 28-item Goldberg General Health Questionnaire, which had four subscales of physical signs, anxiety, social dysfunction, and depression. The total score of general health was obtained for the subjects by adding up the scores of these four sub-scales. Questions 1-7 were connected with physical signs, 8-14 with anxiety, 15-21 with social function, and 21-28 were connected with depression. Each question had four options, with scores ranging from 0 to 3 (never = 0, normal = 1, almost more than normal = 2, and actually more than normal = 3). The total scores ranged 0-84, of which scores >23 showed low general health.<sup>[13]</sup> Chavoshi *et al.* reported the general validity of this test as 88% and that of its subscales to be between 50% and 81%. Sadeghi Movahed *et al.* reported its reliability estimated by Cronbach's  $\alpha = 0.89$ . They also reported the reliability of its subscales as: Physical signs = 0.78, anxiety = 0.86, social dysfunction = 0.77, and depression = 0.88.<sup>[14,15]</sup> This questionnaire was filled by the students before education. Then, the educational program in the form of a 1-month program containing five 120-min educational sessions was held. The sessions were in lecture form and as questions and answers accompanied with slide show and short films. An education booklet and a CD were prepared from valid references prior to each educational session and distributed among the attendants. During the sessions, some skills of NLP were taught: (1) Defining a goal, (2) time management, and (3) self-assertion. Then, 1 month after the last educational session, subjects' mental health was measured with the same questionnaire. Data were analyzed by descriptive (absolute and relative distribution table, mean and SD) and inferential (paired *t*-test) statistical tests. Ethical considerations of the present study included obtaining consent from the subjects and giving them explanations about the goal of the study. They were also assured of confidentiality of their data and the mere use of the data for analysis. Some limitations, which were out of the researchers' control, were personal differences (different levels of motivation, comprehension, interest of the subject, and IQ) and social and cultural differences, which could have affected the subjects' level of learning. Subjects' honesty in responses and the relevancy of their answers were out of control of the researchers. Lack of a control group due to less number of volunteers and educational classes' interference with students' own classes were the other limitations of this study.

## RESULTS

Mean age of participants was 23 years and their mean average was 15.21 years. About 57.7% of the subjects were nursing students and 42.35% were midwifery students, 80.8% were single and 19.2% were married, 78.8% were born in Tehran and 21.2% in other cities, 19.2% consumed psychotropic medications and 13.5% had a history of referring to a psychiatrist, and 30.8% smoked in their leisure time. Mean scores of nursing students' mental health dimensions were 56.23 (14.7) before NLP education and 17.36 (9.44) after NLP education. Score of mental health showed a significant reduction of 39 scores after education compared to before education. In other words, NLP education had a significant effect on the reduction of mental health scores ( $P < 0.001$ ,  $t = 18.42$ ) [Table 1]. With regard to subscales, the mean score of physical signs dimension was 14.30 (4.78) before education and 4.76 (3.63) after education ( $P < 0.001$ ). The mean score of anxiety was 15.10 (4.22) before education and 4.76 (3.63) after education ( $P < 0.001$ ). The mean score of depression was 10.73 (5.38) before education and 1.01 (2.27) after education ( $P < 0.001$ ). The mean score of social function was 16.10 (2.52) before and 8.53 (3.63) after intervention ( $P < 0.001$ ). The mean score of depression was 10.37 (5.38) before and 1.01 (2.27) after intervention ( $P < 0.001$ ). A reduction of mean score observed in all dimensions after education shows the positive effect of NLP education. The mean score of mental health among midwifery students was 53.72 (15.97) before education and 23.63 (12.06) after education, which is significantly less than pre-test values, showing that NLP was effective on the subjects' mental health ( $P < 0.001$ ) [Table 2]. With regard to mental health dimensions, the mean score of physical signs was 11.36 (5.10) before education and 5.54 (4.30) after education ( $P < 0.001$ ). The mean score of anxiety was 14.54 (6.32) before education and 5.54 (4.35) after education ( $P < 0.001$ ). The mean score of social function was 16.36 (3.23) before education and 10.01 (3.54) after education ( $P < 0.001$ ). The mean score of depression was 11.45 (5.56) before education and 2.54 (3.71) after education ( $P < 0.001$ ). Reduction of mean scores in all dimensions shows the effect of NLP education.

### Comparison of nursing and midwifery students before and after intervention

In the nursing group, the mean score of mental health was 56.23 (14.7) before education and 17.36 (9.44) after education, while in the midwifery group, it was 53.72 (15.97) before and 23.63 (12.06) after education. There was no significant difference in the mean scores of general health before education concerning the course

of study ( $P = 0.561$ ), but the difference was significant after education in nursing and midwifery subjects such that nursing students' mental health was more influenced by NLP education compared to that of midwifery students ( $P = 0.041$ ). In the nursing group, the mean score of physical signs was 14.30 (4.78) before education and 4.76 (3.63) after education and in the midwifery group, it was 11.36 (5.10) before education and 5.54 (4.30) after education, with no significant difference in the mean scores of physical signs concerning the course of study before and after NLP education ( $P = 0.584$ ). In the nursing group, the mean score of anxiety was 15.10 (4.22) before education and 3.06 (3.01) after education and in the midwifery group, it was 14.54 (6.32) before and 5.54 (4.35) after education, showing a significant difference concerning the course of study ( $P = 0.019$ ) such that anxiety in the nursing group was significantly higher than in the midwifery group before education. After NLP education, the anxiety in nursing group was less than in midwifery group, revealing the effect of NLP education on the nursing group. In the nursing group, the mean score of social function was 16.10 (2.52) before education and 8.53 (3.63) after education and in the midwifery group, it was 16.36 (3.23) before education and 10.01 (3.54) after education, revealing no significant difference in the mean scores of social function with regard to the course of study before and after education ( $P = 0.153$ ). In the nursing group, the mean score of depression was 10.73 (5.38) before education and 1.01 (2.27) after education and in the midwifery group, it

**Table 1: Determination and comparison of nursing students' health status before and after education**

Variable	Before intervention		After intervention		Paired t-test	
	Mean	SD	Mean	SD	t	P
Mental health	56.23	14.7	17.36	9.44	18.42	<0.001
Physical signs	14.30	4.78	4.76	3.63	13.47	<0.001
Anxiety	15.10	4.22	3.06	3.01	19.22	<0.001
Social function	16.10	2.52	8.53	3.63	11.39	<0.001
Depression	10.73	5.38	1.01	2.27	11.14	<0.001

SD: Standard deviation

**Table 2: Determination and comparison of midwifery students' health status before and after education**

Variable	Before intervention		After intervention		Paired t-test	
	Mean	SD	Mean	SD	t	P
Mental health	53.72	15.97	23.63	12.06	11.86	<0.001
Physical signs	11.36	5.10	5.54	4.30	6.83	<0.001
Anxiety	14.54	6.32	5.54	4.35	9.11	<0.001
Social function	16.36	3.23	10.01	3.54	10.98	<0.001
Depression	11.45	5.56	2.54	3.71	10.64	<0.001

SD: Standard deviation



was 11.45 (5.56) before education and 2.54 (3.17) after education, showing no significant difference ( $P = 0.153$ ). The mean scores of mental health pre-test were significantly different in the groups with respect to the variables of place of birth, interest in the selected course, interest in the present course, mental disease, consumption of psychotropic medications, referring to a psychiatrist, existence of a disastrous event 6 months prior to study, and smoking and alcohol consumption ( $P = 0.05$ ). Mental health was lower among the students of Tehran compared to that in students of other cities. It was also lower among the students who were not interested in their course of study compared to those who were. The students with a history of mental disease and referral to a psychiatrist had lower mental health compared to those with no such history. Mental health among the students experiencing a disastrous event in the past 6 months, or consuming psychotropic medication, cigarettes, or alcohol was lower than that of others. Mean scores of students' mental health showed a significant difference with regard to smoking a water pipe ( $P = 0.005$ ). Mental health was lower among the students who always smoked cigarette and a water pipe compared to those who did not. Mental health of nursing students was lower than that of midwifery students. Comparison of pre-test post-test mean scores of students' mental health showed no significant difference in the variables associated with family ( $P > 0.05$ ).

## DISCUSSION

The results obtained showed that NLP education was effective on the mental health of nursing and midwifery students ( $P < 0.001$ ). These results are consistent with the results of Sahebalzamani *et al.*, who conducted a study on the effect of life skills training on general health in students and showed that life skills training is effective on nursing and midwifery students' mental health ( $P < 0.01$ ,  $t = 11.2$ ).<sup>[13]</sup> Our results are consistent with the result of Zamini *et al.* who studied the effect of NLP education on self-efficiency and problem solving among students.<sup>[11]</sup> Our results showed that NLP education is notably effective on students' mental health, indicating that students' general health can be promoted through NLP education. The results showed that the mean scores of mental health were 56.23 (14.7) and 53.72 (15.97) in nursing and midwifery groups, respectively, before education, showing no significant difference with regard to the course of study ( $P = 0.561$ ). But they were 17.36 (9.44) and 23.63 (12.06) in nursing and midwifery groups, respectively, after education, showing a significant difference with regard to the course of study ( $P = 0.041$ ). It can be concluded that mental health was higher in the nursing group after they were given NLP education, compared to the midwifery group.

In other words, NLP education had a notable effect on nursing students' mental health promotion. Results of this study concerning mental health dimensions showed that anxiety was more influenced by education in nursing students, which needs further studies investigating more dimensions in this regard. The obtained results are consistent with the result of Sahebalzamani *et al.* reporting the effect of expression skill education on self-esteem and decisiveness of high-school girls ( $P = 0.000$ ).<sup>[16]</sup>

## CONCLUSION

With regard to the increasing changes and sophistication of society and development of social communications, preparation of individuals, especially the young generation, for facing difficult situations is an essential issue. Since Iran has a young population, and unfortunately, corruption and social assaults have increased in recent years, the policy makers of education and training system and the related authorities should essentially have plans to lower the corruption and assault and to increase job opportunities in the society and create jobs for students.<sup>[17]</sup> Future challenges can be modified by empowerment of NLP education strategies related to students.<sup>[18]</sup> Our results showed that NLP education can promote individuals' mental health level. By providing NLP education skills including setting a goal, time management, and the skill of self-expression in the form of NLP education, addiction and social corruptions can be prevented.<sup>[9]</sup> NLP education, as public education, can increase the level of knowledge and have a positive effect on the various dimensions of human life. As students are the future investment of the society, their mental health is of great importance. This study can be conducted among other social groups. A family is the first place for children to experience a common life and so ciability. Research shows that NLP education in families can increase their qualitative level. Therefore, based on the findings, it is suggested to consider NLP education along with other educational courses, not only to promote individuals' general health but also to lower depression, anxiety, social function reduction, and physical problems, which will prevent mental and physical disorders.

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