

The effect of laughter Yoga on general health among nursing students

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ABSTRACT

Background: Promotion and provision of individuals' health is one of the bases for development in societies. Students' mental health is very important in each society. Students of medical sciences universities, especially nursing students, are under various stresses in clinical environment, in addition to the stress they experience in theoretical education environment. With regard to the importance of nursing students' general health and considering the various existing strategies to promote general health components, use of complementary treatments is more considered because of their better public acceptance, low costs, and fewer complications. One of the new strategies in this regard is laughter Yoga. The present study was conducted with an aim to define the effect of laughter Yoga on general health among nursing students.

Materials and Methods: This is a quasi-experimental two-group three-step study conducted on 38 male nursing students in the nursing and midwifery school of Isfahan University of Medical Sciences in 2012. In the study group, eight 1 h sessions of laughter Yoga were held (two sessions a week), and in the control group, no intervention was conducted. The data of the present study were collected by Goldberg and Hiller's General Health Questionnaire and analyzed by SPSS version 12.

Results: The findings showed a significant difference in the mean scores of general health before and after laughter Yoga intervention in the two groups of study and control.

Conclusions: The findings showed that laughter Yoga had a positive effect on students' general health and improved the signs of physical and sleep disorders, lowered anxiety and depression, and promoted their social function. Therefore, laughter Yoga can be used as one of the effective strategies on students' general health.

Key words: Health, laughter, nursing students, Yoga

INTRODUCTION

Goldberg and Hiller defined general health as an individual's physical and mental health which includes a collection of physical signs, anxiety and insomnia, social dysfunction, and depression.^[1] The World Health Organization (WHO) defines health as physical, mental, social welfare and not just lack of diseases and disability. One of the criteria to assess societies' health is the mental health status. Mental health plays an important role in dynamism and efficacy of each society.^[2]

As observed in our study, one of the important reasons for development in the developed countries is the focus and effort on training innovative and efficient human resources. The students of human sciences are the key elements who

form the most vulnerable social groups. Many of them may act as the future managers and strategy makers of the country, and their academic achievement is among the basic goals of educational programs.^[3] Since a major part of an individual's life is spent at work or educational environment, with completely different conditions from home, many of the events and life activities have a lot of effects on their physical and mental health. University students are predisposed to lose mental health and need appropriate interventions in this regard due to their special conditions including being far from their families, entering a big and distressful community, facing economic problems and lack of adequate income, high volume of lessons, and tight competitions.^[4]

Students of medical universities, especially nursing students, are also under clinical environment stress, in addition to the stress related to theoretical education environments. Hospitals are considered as one of the most stressful working environments where it is the case of human life or death. The tension in these environments can not only lead to low academic achievement but also affect students' personality growth and cause many inappropriate behaviors among them.^[5] As the dimensions of general health are associated with all the individuals' daily life and the disorder in any

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of these dimensions can lead to disturbance in general health, and consequently, individuals' mental health disorder, conducting appropriate interventions to improve each of these dimensions is of great importance. Rezaei *et al.* in their study on investigation of nursing students' mental health in the nursing school of Amol showed that 30.6% of the studied students had mental disorders.^[6] The research shows that the prevalence and intensity of mental disorders have increased among students compared to a non-student community. Based on National Mental Health Association report, the results of the recent studies conducted in London Welfson Health Sciences Institute show that 46% of male students and 64% of female students suffer from anxiety while 12% of male students and 15% of female students suffer from depression. The counselors in the above-mentioned institute reported an increase in students' referrals to counseling centers from 2.4 out of 100,000 students in the year 1995 to 9.7 out of 100,000 in the year 2000.^[7] The research results show that individuals' leisure time activities can lead to expansion of thoughts, personality growth and development, prevention of crimes, an increase in social participation, and a feeling of responsibility, and improves individuals' physical mental health. On the other hand, Iranian students' daily leisure time is 3-4 h. 58% of the students have their leisure time activities in the evening and night and 69.5% have these activities at dormitory or home. They only spend 5.5% of their leisure time at cultural or recreational sports centers. It reveals a shortage in healthy leisure time among the Iranian students, resulting in their predisposition to diminished academic achievement and mental problems.^[8] One of the other variables of general health is sleep, so sleep disorder is one of the most common problems among adults. Sleep disorders (falling sleep and waking up) cause physical and mental disorders and negatively affect educational function, resulting in a drop in students' academic achievement. Shamsaei and Cheraghi, in a study on the assessment of sleep disorders' prevalence among nursing and midwifery students in Hamedan, showed that one-third of the students suffer from insomnia, with a higher prevalence among female students compared to males and among nursing students compared to midwifery students.^[9] Numerous strategies have been indicated for improvement of general health components. Among these strategies, complementary treatments have been considered more by researchers in recent years due to their public acceptance, low costs, and fewer complications.^[10] Nowadays, modern medicine has clearly been directed toward complementary medicine, so the WHO named the year 2005 as the year of complementary and alternative medicine.^[11]

These methods include stress management,^[12] physical exercises, relaxation and psychological counseling,

education of social skills,^[13] Yoga,^[14] and laughter therapy.^[15] Various methods of complementary medicine enable the nurses to help their patients control their anxiety.^[16]

Meanwhile, psychiatric nurses play an efficient and numerous roles in complementary medicine related interventions and are considered as administrators of this type of medicine.^[10,17] Some of the strategies to promote and develop individuals' general health include laughter, humor therapy, and laughter Yoga.^[18] Laughter has a valuable and specific position in psychology which can help in maintaining mental balance in humans and contributes to their mental health.^[19]

Laughter Yoga is a method in which there is a combination of unconditional laughter with Yoga breathing exercise (Pranayama) and was firstly suggested by Madan Kataria, an Indian doctor, in 1995. In this method, everybody can laugh by telling a joke or humor. As a matter of fact, laughter is first artificial, but is quickly changed to natural laughter and increases the O₂ saturation of brain and body. Enhanced feeling of security and self-belief, positive energy, and distraction from negative thoughts are among the positive treatment effects of laughter Yoga.^[20] As this strategy was started 16 years ago, there is limited research in this filed. Nagendra *et al.* (2007), in a study on the efficacy of laughter Yoga on the professionals to overcome professional stress in India, found a significant improvement in stress parameters including blood cortisol level after the intervention.^[21] The results of the study of Ko and Youn (2011) in Korea on the effects of laughter therapy on depression, cognition, and sleep among community dwelling elderly showed that laughter therapy was an efficient, cost-effective, and available intervention which resulted in positive effects on depression, insomnia, and sleep quality of the elderly.^[15] As the students of various medical sciences courses including nursing students will be responsible for provision and promotion of public health in future, they should be cared for to be able to play their role well as an educated and professional human resource.

With regard to nursing students' general health, making motivations in medical universities seems crucial. This study aimed to define the effect of laughter Yoga on the general health of nursing students in the nursing and midwifery school of Isfahan University of Medical Sciences in 2012.

MATERIALS AND METHODS

As the effect of the independent variable of laughter Yoga on the dependent variable of general health was investigated in the present study, it was a quasi-experimental two-group three-step design. Study population comprised male BS

nursing students of Isfahan University of Medical Sciences in 2012.

Sampling was firstly convenient sampling through which the male nursing students (in semesters 2-6) who were interested to participate in the study were invited to attend a primary laughter Yoga orientation session, and then, 42 of them meeting the inclusion criteria were selected. The list of the subjects was made and numbered from which the odd and even numbers were randomly assigned to control and study groups by lottery. Inclusion criteria were: Being single; studying in semesters 2-6 of bachelor's degree of nursing; no history of probation in the past semester; being interested in participating in the research; no concurrent participation in other complementary medicine methods; no cardiac diseases, hernia, acute hemorrhoid (accompanied with bleeding), hypertension, chronic coughs, incontinency, epilepsy, acute low back pain, acute mental disorders, consumption of antipsychotic drugs; and no history of any surgery in the past 3 months.

Exclusion criteria were: No interest to continue in the study, absenteeism for more than two sessions, consumption of medications affecting general health components (depression, anxiety, sleep, and social function, and physical signs) during the study, facing acute stressful events like immediate relative's death. Based on the exclusion criteria, two subjects in control and two in the study group were excluded from the study, and 38 subjects were considered as the final number (19 in the study group and 19 in the control group). Data were collected by a questionnaire of demographic characteristics and Goldberg and Hiller's General Health Questionnaire, which were filled prior to the study, immediately after the intervention, and 1 month after the intervention by the students in study and control groups.

Demographic data questionnaire included four questions on subjects' personal and familial characteristics.

Goldberg and Hiller's General Health Questionnaire contained 28 four-point questions investigating the four domains of physical signs, anxiety and sleep disorder, social function, and depression. Reliability of the General Health Questionnaire has been confirmed in translation of various cultures. Shigemi and Toshihide reported Cronbach's alpha of >0.9 in their study on Japanese employees.^[22] Goldberg and Blackwell calculated the validity of General Health Questionnaire through a clinical interview checklist filled for 200 patients in the surgery ward in England. Based on their study, this questionnaire could sort out the subjects as diseased and healthy individuals with $>90\%$ accuracy.^[23] Laughter Yoga sessions (a total of eight sessions) were held at 7.00-8.00 a.m., twice a week, and the duration was 1 h for each session.

The researcher conducted the sessions, in which the first 10 min were devoted to relaxation techniques, deep breathing exercises, and warm up. For warm-up exercises, for example, the subjects held their palms parallel to each other while clapping, so that their palms and fingers thoroughly clapped. This stimulated palm pressure points and increased the level of energy and coordination in the group. Rhythm of 1, 2, 3, and 1, 2 was added to clapping while bending the knees and shaking the head, which made clapping very joyful and left everybody in a good mood for laughing and smiling. Then, laughter Yoga techniques were practiced for 30 min. Next, there were 10 min of rest, and finally, 10 min of laughter meditation was administrated. General framework of laughter meditation was such that the subjects comfortably sat down on the ground in a way they could stare at one another's eyes. The researcher warned them not to talk or use other communicational methods like imitation, changing location, and making other noises, as they would involve the subjects' superego. The subjects had to sit calmly with closed eyes and concentrate on their breathing. They gradually started artificial laughter until one subject started natural laughter. If not so, the subjects continued Pranayama breathing exercise to start natural laughter by stimulation of diaphragm. Group leader invited the group to reduce the intensity of laughter and meditation was gradually restarted. In the end, the group leader asked the subjects to concentrate on their breathing to leave meditation and invited them to peace and relaxation. No concurrent intervention was conducted in the control group and the subjects just filled the General Health Questionnaire three times.

The research location for administration of laughter Yoga sessions was Etehad sports hall located in Shahid Movahedi sports complex of Isfahan University of Medical Sciences. Data were analyzed by independent *t*-test, repeated measures analysis of variance (ANOVA), and least significant difference (LSD) *post-hoc* using SPSS version 12.

RESULTS

The results showed that there was no significant difference in the two groups concerning demographic characteristics including age, students' semester, their present residential location, and the parental aliveness ($P > 0.19$).

As presented in Table 1, the mean scores of general health before intervention showed no significant difference in the two groups, but there was a significant difference in the mean scores of general health immediately after and 1 month the after intervention in the two groups of study and control. Repeated measure ANOVA test showed no significant difference in the mean total scores of general health at three time intervals in the control group ($P = 0.33$), but there was

a significant difference concerning the above issue in the study group ($P = 0.01$). LSD (Least Significant Difference). *post-hoc* test showed a significant difference between the mean total scores of general health before intervention and the scores immediately after ($P = 0.004$) and 1 month after ($P = 0.003$), but there was no significant difference between these scores immediately after and 1 month after intervention ($P = 0.55$).

As presented in Tables 2-4, the mean scores of four domains of general health including physical signs, anxiety and sleep disorder, social function, and depression showed no significant difference before intervention in the two groups, but the mean scores of these four domains showed a significant difference immediately after and 1 month after intervention in the two groups.

DISCUSSION

As shown by the findings, laughter Yoga positively affected the general health of nursing students, which is almost consistent with the results of some studies. The findings of Nagendra *et al.* concerning the efficacy of laughter Yoga on IT professionals to overcome professional stress in India showed that there was a significant improvement in stress parameters including the level of blood cortisol.^[21] Shahidi *et al.*, in their study comparing the effects of laughter Yoga and group sport program on the depressed elderly women, reported that laughter Yoga not only had positive effect

similar to sport program on the reduction of depression but also imposed positive effects on the feeling of life satisfaction among the elderly women.^[24]

The findings of the above-mentioned study are in line with the positive effect of laughter Yoga on the dimensions of depression and social function in general health obtained in the present study. On the other hand, a study was conducted by Kong *et al.* to investigate the effects of a stress management program, based on meditation, on stress, anxiety, and depression of nursing students in Korea in 2006. Their results revealed a significant difference concerning the scores of stress and anxiety in the two groups after intervention, but the difference in depression scores after intervention in the two groups of study and control was not significant.^[25]

The above-mentioned study result was consistent with that of the present study concerning the variable of anxiety which is one of the general health dimensions; but for the dimension of depression, it yielded different results, possibly due to it being a different type of study. Rezaei, in a study on the effect of a stress management educational program on the level of students' depression, anxiety, and stress in Isfahan University of Medical Sciences in 2010, reported that the mean scores of stress, anxiety, and depression were reduced in the study group after administration of a stress educational program, and this

Table 1: Comparison of mean scores of general health in the two groups of study and control

| Mean score | Study | | Control | | Independent t-test | |
|------------------------------|-------|------|---------|-------|--------------------|-------|
| | Mean | SD | Mean | SD | P value | t |
| Before intervention | 24.5 | 15.1 | 23.2 | 11.2 | 0.75 | 0.32 |
| After intervention | 13.9 | 9.2 | 25.1 | 11.04 | 3.39 | 0.002 |
| One month after intervention | 12.8 | 10.6 | 24.4 | 14.5 | 2.81 | 0.008 |

SD: Standard deviation

Table 2: Comparison of mean scores of general health in the two groups of study and control before intervention

| Mean score | Study | | Control | | Independent t-test | |
|----------------------------|-------|-----|---------|-----|--------------------|------|
| | Mean | SD | Mean | SD | P value | t |
| Physical signs | 5.4 | 3.3 | 5.2 | 3.4 | 0.846 | 0.19 |
| Anxiety and sleep disorder | 7.1 | 5.3 | 6.1 | 4.3 | 0.51 | 0.66 |
| Social function | 7.2 | 3.1 | 7.5 | 2.5 | 0.78 | 0.28 |
| Depression | 4.7 | 5.3 | 4.3 | 3.9 | 0.81 | 0.24 |

SD: Standard deviation

Table 3: Comparison of mean scores of general health in the two groups of study and control after intervention

| Mean score | Study | | Control | | Independent t-test | |
|----------------------------|-------|------|---------|-----|--------------------|------|
| | Mean | SD | Mean | SD | P value | t |
| Physical signs | 3.7 | 2.4 | 5.7 | 3.5 | 0.03 | 2.05 |
| Anxiety and sleep disorder | 3.7 | 3.19 | 6.8 | 4.5 | 0.02 | 2.44 |
| Social function | 4.2 | 2.84 | 7.26 | 2.9 | 0.003 | 3.25 |
| Depression | 2.2 | 2.9 | 5.3 | 2.8 | 0.002 | 3.26 |

SD: Standard deviation

Table 4: Comparison of mean scores of general health in the two groups of study and control 1 month after intervention

| Mean score | Study | | Control | | Independent t-test | |
|----------------------------|-------|-----|---------|-----|--------------------|------|
| | Mean | SD | Mean | SD | P value | t |
| Physical signs | 3 | 2.5 | 5 | 3.7 | 0.04 | 1.98 |
| Anxiety and sleep disorder | 4.1 | 4.1 | 6.9 | 5.4 | 0.04 | 1.98 |
| Social function | 4 | 3.1 | 7.4 | 3.6 | 0.004 | 3.07 |
| Depression | 1.7 | 2.4 | 5.1 | 3.3 | 0.001 | 3.55 |

SD: Standard deviation

reduction was significant compared to the control group.^[12] The findings of his study confirm similar effect of intervention on the dimensions of general health. The only difference is that in the present study, all the dimensions of general health were measured, while in the above-mentioned study, only two dimensions of general health (anxiety and depression) were studied. The findings of Ko and Youn on the effects of laughter therapy on depression, cognition, and sleep among the elderly in Korea showed that laughter therapy is an efficient, cost-effective, and available intervention which has positive effects on depression, insomnia, and sleep quality among the elderly.^[15] The authors believe that as the subjects in the present study are different from those of other studies, further research is needed to support the present study. As the present study was conducted on male university students, it is suggested to conduct another study on female students to be able to compare these effects in these two groups, in order to use laughter Yoga for promotion of students' general health and improving their educational function in all medical universities.

CONCLUSIONS

The findings showed that laughter Yoga had a positive effect on students' general health and improved the signs of physical and sleep disorders, lowered anxiety and depression, and promoted their social function. Therefore, laughter Yoga can be used as one of the effective strategies on students' general health.

ACKNOWLEDGMENTS

The researchers of this study would like to thank the research center of the Faculty of Nursing and Midwifery of Isfahan University of Medical Sciences and the nursing students who participated in this research.

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How to cite: Yazdani M, Esmaeilzadeh M, Pahlavanzadeh S, Khaledi F. The effect of laughter Yoga on general health among nursing students. Iranian Journal of Nursing and Midwifery Research 2014;19:36-40.

Source of Support: Source of Support :Isfahan University of Medical Sciences,Iran,Grant No 391048, **Conflict of Interest:** Nil.