Improving Mental Health and Academic Performance through Multiple Stress Management Intervention: Implication For Diverse Learners

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Abstract

This study examined the effectiveness of Multiple Stress Management Intervention (MSMI) on academic performance and mental health among undergraduate students. Sixty students were randomly assigned to either a stress-management training group, or a non-training control group. During the 8-week period, sixteen 2-hour session interventions were conducted for the experimental group. Results indicated that there is an increase in the academic performance and mental health measures in the experimental group. This study implies that stress management could be learned and coping skills could be acquired.

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Keywords: Stress management; Mental health; Coping responses; Academic performance; Cognitive reaction.

1. Introduction

Helping students manage stressful lives has been a goal of counseling practitioners. Because college students perceive academic life as stressful and demanding and report experiencing emotional and cognitive reactions to this stress, especially due to external pressures and self-imposed expectations (Aheme, 2001; Hicks & Miller, 2006). There are many researches to indicate college can be a stressful experience for students (eg. Hudd, et al. 2000; The National Alliance for Mental Health 2005; Veeser & Blakemore, 2006). Iranian students are, of course, among those suffering from such concerns (Gholamzadeh, Passyar & Haghshenas, 2008; Moeini, Birashk, & Allahverdipour, 2008). Because high level of stress have been reported among Iranian students and large percentage of Iranian university students are feeling overwhelmed, sad, hopeless, and so depressed that they are unable to function (Ferdusi, 2004; Gholamzadeh, Passyar & Haghshenas, 2008; Moeini, Birashk, & Allahverdipour, 2008), the integration of stress-management programs into university curriculum is necessary to examine. In order to prevent sever stress symptoms among students; effective stress-management programs should be implemented. Self-care strategies using a combination of stress-management techniques could be learned by students as part of their curriculum. Being able to manage and control stress is a useful skill, for life as a student but also for life beyond university. Although stress management interventions of various types are found on college campuses (e.g. Vesser & Blakemore, 2006), the lack of a program for Iranian students to fulfill their needs seems vital in Iran.

It is important to have techniques to reduce stress. Sharoff (2004) suggested that an adequate recovery period was necessary following stressful situations for individuals. Down through the ages, counselors and psychologists have provided much leadership through the development and research of psychological interventions to alter maladaptive behaviors (Keogh, Bond & Flaxman 2006; Lazarus and Folkman 1984; Meichenbaum 1986; Palmer & Dryden, 1995).
1.1 Literature review of Intervention

Bond and Bunce (2000) addressed the advantages of using emotional-focused and problem-focused stress management interventions in order to reduce overall employee stress by observing mental health, job motivation, job satisfaction, and propensity to innovate. When emotional-focused, acceptance and commitment therapy (ACT) and innovation promotion programs (IPP) were used for employees, their emotional state improved when compared to the control group.

Koeg, Bond, and Flaxman (2006) improved academic performance and mental health a stress management intervention among secondary education students in the United Kingdom. Simple main effects tests indicated that mental ill-health and anxiety scores significantly decreased from Time 1 to Time 2 in the SMI group to a statistically large extent. Hirokawa, Yagi, and Miyata (2002) examined the effects of stress management training for Japanese college students of social work. They conducted five basic formats in stress management: progressive muscle relaxation, meditation, biofeedback, cognitive-behavioral skills training, and a combination of techniques. The results showed that the stress management program for college students of social work reduced passive coping strategies. However, active coping strategies were not significantly affected in either group. Stress symptoms were not reduced on both life events and stress symptoms. Participants with a higher degree of anxiety perceived their life events as harmful and showed an increase in their stress symptoms; those with a lower degree anxiety showed decrease. Hiokawa, Yagi, and Miyata (2002) stated that their program focused more on relaxation training than on modification of cognitive skills. While, Agha-Yusofi (2002) examined the effectiveness of coping therapy on personality factors and depression among Iranian students. The findings showed although coping therapy and relaxation training effected in changing personality factors, the effectiveness of coping therapy more in reducing depression than relaxation training among depressive students. Moeini et al. (2008) also conducted a stress management founded social marketing assessment and response tool among adolescents of Tehran city. The results of study showed that stress management founded social marketing assessment & response tool had strong effective in reducing stress, improving mental health, and changing the beliefs about mental disorder.

All of approaches are generally accepted and recommended by clinicians as stress management procedures (Barlow, 2001; Lehrer, Woolfolk, & Sime, 2007; Smith, 2005). Taking into consideration the aspects of the stress management are explained above the present study provided a stress-management program to more effectively reduce stress symptoms by focusing more on cognitive-behavioral skills training. Because stressful persons perceived an event as more stressful, cognitive skills would hopefully modify the perceptual process and reduce stress symptoms.

1.2 Purpose of the study

This study aimed to examine the effects of a stress-management program that is an instructional classroom intervention designed, implemented, and evaluated to help students learn strategies for altering potentially harmful life-style habits. The program components were chosen so that students could later pursue them on their own and in other activities. Therefore, purpose of the present study was to examine the effects of a stress-management program for undergraduate students on their mental health and academic performance. Researchers hypothesized that this study shows that: "Students who received a stress-management intervention will have better mental health and academic performance than those in control group that did not receive this intervention".

2. Methods

2.1. Design

To investigate the efficacy of our stress-management program we used a repeated measure, randomized design. Intervention group (intervention vs. no intervention) served as the between-groups variable, whereas time of testing served as the within-groups variable (before vs. after intervention). For the control group, the questionnaires were administered twice, at about same time as pre-and posttest administration for the stress-management group.

2.2. Participants

Participants came from the same academic year of a large, co-ed under-graduate students in the Fars province of Iran total of 576 (48% male), aged between 18 and 31, completed a set of questionnaires (described below). Due to financial constrains, we could only administer the stress-management program to a limited students; therefore, we used a systematic sampling procedure (Pedhazur & Schmelkin, 1991) to select 60 of these students, matching on intelligence. We then randomly allocated this sample either to the stress-management training or the control group. Thirty students were recruited to participate in the stress-management programs (18 males and 12 females), and thirty students were recruited as a control group (17 males and 13 females). The average age for the experimental group was 21.3 years and for the control group was 21.7 years.

2.3 Measures

The General health questionnaire (GHQ; Goldberg & Williams, 1988) was used to assess general health. The GHQ is one of the most widely used psychometric measures in health and psychiatry and has good reliability and validity (Goldberg & Williams, 1988). Each item is assessed on a four-point Likert-type scale, which assesses how a person has been feeling over the past few weeks. Higher scores indicated greater degrees of mental illness. Alpha coefficients for this
study were 0.89 and .90 for Times 1 and 2, respectively. A measure of academic performance was obtained from the respondents’ grade point average (GPA) for the four modules taken in their semester at university.

2.4. The Multiple Stress-Management Intervention (MSMI)

The stress-management program was administered for 16 weeks, 2-hour per week, and there was typically a 15-person limit per session. On the first day, the instructor outlined the program. The instructor lectured on the nature of stress, stressors, causes and implications of stress. The instructor also attempts to help students become aware of the signs and symptoms of stress early, to prevent stress, identify potential sources of stress, develop an awareness that they can cope with stress and how such responses can become maladaptive by using Lazarus's stress transactional model (Lazarus & Folkman, 1984), the interactional context, coping and adaptation model (Moos & Holahan, 2003), and Stress Model (Palmer & Strickland, 1996). At the second class, students were helped to identify their own optimal level of stress through the lecture and using work sheet. At the third class meeting, the instructor explained and practiced breathing exercises. This part was divided up into four sections: (a) breathing for awareness and relaxation, (b) breathing to release tension, (c) breathing to stimulate alertness, and (d) breathing for symptom control. Deep relaxation progressive relaxation was taught to provide one way of identifying particular muscles, muscle groups and distinguishing between the sensations of tension and deep relaxation at the fourth session. Progressive Muscle Relaxation Training (PMRT, Jacobsen, 1929) involves tensing and relaxing various muscle groups while taking note of the contrasting sensations. Four major categories were covered: (a) progressive muscle relaxation, including tensing and relaxing muscles of the legs and arms, shoulders, face, and whole body; (b) abdominal respiration; (c) meditation, including imagining a special place where one can relax; (d) stretching arms and getting up. Calm instrumental music was used as the background. During the seven weeks, relaxation training was repeated twenty minutes at the beginning each session (from the fifth session until sixteenth session).

Through fifth to ninth session's cognitive-behavior skills (Thought Identification, Refuting irrational ideas training, Positive thinking training, problem solving, and Making decision training) were conducted among students by using psycho-educational technique, role playing, worksheets and homework. The cognitive-behavior skills (D’Zurilla & Nezu, 2007; Ellis, 1975; Meichenbaum, 1986) were thought for implementing changes in lifestyle behaviors through cognition to promote health. Cognitive-behavior skills help highly anxious and stressful persons to restructure their thinking patterns such that an event is perceived to be less harmful. Cognitive-behavior skills modify the appraisal processes that determine whether a specific stimulus is harmful and to develop behavioral skills for managing stress. These also help a person to attack irrational ideas or beliefs and replace them with realistic statements about the world. Cognitive-behavior skills training helps a person restructures his or her thinking patterns; a flexible person believes there are alternative choices. A combination of these techniques may be applied during stress management intervention to achieve more effective stress reduction.

Tenth, eleventh, and twelfth sessions focused on identifying feelings, which are an important part of any problem. Anger is a perfectly normal emotion or feeling that everyone experiences, but it becomes a problem when it is poorly managed. These sessions introduced anger and anxiety management techniques, which have been shown to be effective in reducing both anger and anxiety by role playing and demonstration a movie.

At the thirteenth, fourteenth, and fifteenth sessions students were trained in assertiveness, time management and self-monitoring. These sessions were experimental and designed to simulate a college student’s day. Students were forced to decide what to include and what to eliminate from their daily activities. The sessions concluded with a discussion of the methods that students used to complete the task and how approaches to time management may minimize or increase stress. The last session reviewed the stress management techniques presented in the class. The trainer provided a summary of how the different techniques impact the interaction response modalities and of their effects on mental health. This activity was conducted using the psycho-educational technique (see Table 1).

Table 1. Content of stress management intervention program

| Day 1 | Orientation: explanation of the stress management program |
| Day 2 | Lecture: Understanding Stress, How you React to Stress, Body Awareness Administration of questionnaires (pre stress management) |
| Day 3 | Training: Breathing training |
| Day 4 | Training: Relaxation training |
| Day 5 | Training: Relaxation, Thought identification training |
| Day 6 | Training: Relaxation, Refuting irrational ideas |
| Day 7 | Training: Relaxation, Positive thinking training |
| Day 8 | Training: Relaxation, Problem-solving training |
| Day 9 | Training: Relaxation, Making decision training |
| Day 10 | Lecture & Training: Relaxation, Identify feeling |
| Day 11 | Training & Role playing: Relaxation & Anger management training |
| Day 12 | Training & Role playing: Relaxation & Anxiety management training |
| Day 13 | Training & Role playing: Relaxation & Assertiveness training |
| Day 14 | Training & Discussion: Relaxation & Goal setting and time management |

Day 14   Training & Discussion: Relaxation & Goal setting and time management
3. Results

In order to examine the effects of MSMI on academic performance and mental health during pre-and post-training, a 2x2 repeated-measure of ANOVA was performed. Intervention group (intervention vs. no intervention) served as the between-groups variable, whereas time of testing served as the within-groups variable (before vs. after intervention). The results showed that the main effects of the stress management training were significant. There were significant differences between experimental and control groups in posttest (F [1, 58] = 3080.276, p = .000), but no significant difference in pretest. Simple main effects tests indicated that GPA scores' experimental group significantly larger than those for control group (Wilk's Λ = .014, F [2, 57], p = .000). Also, mental health (Wilk's Λ = .038, F [2, 57], p = .000) increased from pretest to posttest in the experimental group. However, there were no significant differences between pretest and posttest for control group.

4. Conclusion

This study showed that multiple stress management intervention influenced academic performance and mental health. Multivariate results indicated that significant interaction did occur between these dependent variables and the treatment. In comparison with the control group, students who received the MSMI had higher scores for GPA and mental health. The above results indicate that we met these objects, and we shall now discuss the findings.

4.1 Mental health

It seems reasonable to consider, based on the results of present study, the fact that studying participants who decrease stress level undergoing treatment may have developed mental health. In fact, the MSMI rested on the basic premise that students feel good about themselves, function well in the world, and have fewer interpersonal and intrapersonal problems when they know how to cope with a stressful situation. MSMI reduced the burden that stressful life events imposed on students. This allowed students to whatever stress or is affecting them on even terms and not be overwhelmed by it in comparison with the students who did not attend the intervention program. These findings are consistent with those from worksite stress management in adult organizations (e.g., Hirokawa, Yagi & Miyata, 2002; Romano, 1984; Bond & Bunce, 2000).

Moreover, the multiple stress management intervention in the present study included cognitive-behavior skills training. Cognitive-behavior skills help highly anxious and stressful persons to restructure their thinking patterns such that an event is perceived to be less harmful (Meichenbaum, 1986). Cognitive-behavior skills modify the perceptual process and reduce stress symptoms and negative appraisal while increasing positive appraisal (Beck, 1984). As predicted, the present study found that positive changes in metal health scores in the intervention group occurred because the dysfunctional beliefs and cognitive appraisal of students in this group became more functional and less distorted. These changes are consistent with the research aim of reducing dysfunctional cognitive appraisal by providing people with strategies they can use to make them less distorted and more functional. These mediation effects concerning mental health are consistent with core CBT principles; that is, challenging dysfunctional cognition results in an improvement in mental health (e.g., Beck, 1984; Bond & Dryden, 2002).

4.2 Academic performance

In relation to academic performance, stress management program produce higher grades, findings that support and extend those of previous studies with British and Japanese students (Koeg, Bond, & Flaxman, 2006; Hiokawa, Yagi, & Miyata, 2002). There are a number of factors identified in the relevant literature that may potentially moderate this relationship (e.g. personality, gender, and psychosocial adjustment) and associate with academic performance. For example, those individuals who reported better adjustment to university, were more intrinsically motivated toward accomplishment, and obtained significantly higher marks during the semester at university. It may be, for example, that effective stress management technique produce better levels of adjustment to university life or were more intrinsically motivated toward their academic studies, which in turn, led to better academic performance. Such an explanation would be supported by relationships observed between stress-management and mental health. It is also consistent with previous research in a range of educational settings that supports the notion that better adjustment and more health behaviors are linked to greater academic success (e.g. Deci & Ryan, 1985, 1991).

Although, the present study found evidence that MSMI improved academic performance and mental health by reducing stress and promoting positive changes in coping skills. The results of this study should be considered in light of several limitations. The first limitation relates to the self-report survey approach. Due to the nature of survey research, self-report data is relied upon the participants’ responses which can be inaccurate because of the inherent dynamics of self-report. The second limitation relates to experimental situation. Although participants showed measurable changes from the intervention, some of activities, because of novelty, often require more than one session to have an impact. Also, students
who were recruited to the intervention sessions were aware of their experimental assessment, which may have biased their reports of distress and mental illness.

4.3 Implication of the study

It is clear that accurately predicting which students are likely to experience academic, personal and social difficulties, or leave College before they graduate due to stress, would aid the creation and implementation of interventions targeted to specific cases. It is mentionable that stress can be reduced if appropriate intervention is applied so, the MSMI is considered as an effective program to reduce stress and it may add to develop knowledge of stress management. Students were helped to identify their own optimal level of stress through this research. The MSMI program provided a structured opportunity for students to learn, practice, and applies stress management techniques and change strategies in their present lives. This program as an instructional classroom intervention that has been designed, implemented, and evaluated to help students learn strategies for altering potentially harmful life-style habits is suggested as a course work for Iranian students. Because college students are forming adult life-styles, this course work can be particularly appropriate for them. The program's varied, action-oriented, and fun activities contribute to its popularity on campus.

References:

Agha-yusofi, A. (2002). The role of personality factors on coping strategies and the effectiveness of coping therapy on personality factors and depression. Doctoral Dissertation, Faculty of Psychology, Tarbiat Modaress University, Iran.

Aheme, D. (2001). Understanding students stress: A qualitative approach. Irish Journal of psychology, 22, 176-187.

Barlow, D.H. (2001). Clinical handbook of psychological disorders. 3rd ed. New York: Guilford Press.

Beck, A. (1984). Cognitive approaches to stress. In R. Woolfolk & P. Leher (Eds.), Principles and practice of stress management. New York: Guilford Press.

Bond, F. w., & Dryden, W. (Eds.) (2002). Handbook of brief cognitive behavior therapy. Chichester: Wiley.

Bond, F. w., & Bunce, D. (2000). Mediators of change in emotion-focused and problem-focus worksite stress management interventions. Journal of Occupational Health Psychology, 5, 156-163.

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behaviour. New York: PlenumPress

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: integration in personality. In R. Dienstbier (Ed.), Perspectives on motivation: vol. 38. Nebraska Symposium on motivation. (pp. 237–288). Lincoln, NE: University of Nebraska Press.

D’Zurilla, T.J.& Nezu A.M. (2007). Problem-solving therapy: A positive approach to clinical intervention (3rd ed.). New York: Springer Publishing.

Ellis, A. (1975). A New guide to Rational living. North Hollywood, California: Wilshire Books.

Ferdusi, T. (2004). The examination of kinds of mental problems and disorders among referred students' counseling centers of Tehran universities. Journal of Human Science, 69-95.

Gholamzadeh, S., Passyar, N., Haghshenas, A. (2008). Prevalence of risk for mental disorders among paramedical students at the Fatemeh nursing college, Shiraaz-Iran. Abstracts for Poster Session I / European Psychiatry 23 (2008) S81e.

Goldberg, D. P., & Williams, P. A. (1988). A user’s guide to the General Health Questionnaire. Berkshire, England: NFER-Nelson.

Hicks, T. & Miller, E. (2006). College life style, life stressors and health status: differences along gender lines. Journal of College Admission, 192: 22 – 29.

Hudd, S. (2000). Stress at college: Effects on health habits, health status and self-esteem. College Student Journal, 34(2): 217 – 228.

Hirokawa, K., Yagi, A. & Miyata, Y. (2002). An examination of the effects of stress management training for Japanese college students of social work. International Journal of Stress Management, 9: 113 – 123.

Jacobson, E. (1929). Progressive Relaxation. University of Chicago Press, Chicago.

Keogh, E., Bond, F., & Flaxman, P. (2006). Improving academic performance and mental health through stress management intervention: Outcomes and mediator of change. Behavior Research and Therapy, 44:339-357.

Lazarus, R.S.,& Folkman,S. (1984). Stress, Appraisal, and Coping. New York: Springer Publishing Company.

Lehrer, P., Woolfolk, R., & Sime, W. (2007). Principles and Practice of Stress Management. The Gilford Press, New York, U.S.A.

Meichenbaum, D. (1986). Stress inoculation training. Great Britain: A. Wheaton & Co. Ltd., Exter.

Moeini, B., BiraShk, B. & Allahverdipour, A.(2008). Perceived stress, self-efficacy and its relations to Psychological well-being status in Iranian male high school students. Social Behavior and Personality, 36 (2), 257-266, © Society for Personality Research (Inc), S 191.

Moos, R.H. & Holahan, C.J. (2003). Dispositional and contextual perspectives on coping: Toward an integrative framework. Journal of Clinical Psychology, 59(12): 1387 – 1403.

Palmer, S. & Strickland, L. (1996). Stress management: A Quick Guide. Dunstable: Folens Publisher.

Ped hazur, E., & Schmelkin, L. (1991). Measurement, design and analysis: An integrated approach. Lawrence Erlbaum Assosiation.
Palmer, S. and Dryden, W. (1995). *Counseling for Stress Problem*. London: Sage.
Romano, J. (1984). Stress Management and Wellness: Reaching beyond the Counselors' office. *Personnel and Guidance Journal*, 533-537.
Sharoff, K. (2004). *Coping skills therapy for managing chronic and terminal illness*. New York: Springer Publishing.
Smith, J.C. (2001). Advances in ABC relaxation: Application and inventories. New York: Springer.
The National Alliance for Mental Health. (2005). Finding Hope and Help: college student and Depression Pilot Initiative. Retrieval from http://www.nmha.org/camh/college/index.cfm.
Veeser, P.I. & Blakemore, C. (2006). Student assistance program: A new approach for student success in addressing behavioral health and life events. *Journal of American College Health*, Vol. 54, 6: 377 – 381.
Wolpe, J. (1950). *The practice of Behavior Therapy*. 3rd ed. New York: Pergamon Press.