

Original Article

Effect of educating problem solving and decision making skills on mental health and resiliency of students

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Abstract

Introduction: This study aimed to determine the of educating problem solving skills and decision-making on mental health and resilience of female university students.

Methods: It was completed through a quasi-experimental design with pretest-posttest and control group. The sample consisted of 30 university students who were selected by convenience sampling and randomly assigned into experimental and control groups. The experimental group was trained in problem solving and decision-making for seven sessions of 2 hours. The assessment tool consisted of Ryff scales of psychological well-being (RSPWB), Symptom Checklist (SCL-25), and Connor-Davidson Resilience scale (CD-RISC). Data were analyzed by analysis of covariance.

Results: The results showed that the experimental group in comparison to control group had higher scores in posttest. In other words, educating problem-solving and decision-making skills increased all mental health subscales (Somatization, OCD, INT, Depression, Anxiety, Phobia, Paranoia, Psychosis, ADI) and resiliency of female university students .

Conclusion: It can be concluded that educating problem-solving and decision-making skills can promote mental health and resiliency and can be effective in preventing the incidence and severity of mental health problems.

Declaration of Interest: None.

Key words: Resiliency, Mental health, Problem solving, Decision making skills .

Introduction

All human beings deal with stress and traumatic situations throughout their lives. These tensions or stress threaten our health from a variety of sources. However, these hard situations can be endured and continue life as it is (1). Problem solving and decision-making skills are the basic skills of human life and moreover one of the fundamental requirements of a healthy lifestyle and a healthy community. Obviously there is no human with no problems in the world, what is important is to take problems as a natural part of life and find ways to prevent and solve these problems (2). The term resiliency includes the concept of flexibility, recovery and returning to the original state after dealing with unpleasant situations.

Adverse conditions are not just limited to human-made disasters (such as war and poverty), or natural disasters such as drought and flood, but unfortunate circumstances in everyday life such as divorce, illness, death, substance abuse, or changes in job and education (3). According to Walsh (4), perseverance and the ability to fight and resist the hardships is the key element of resilience. In fact, some of the skills that help people to increase their resilience can be learned (5). Keyes (6) by dividing the health aspects to physical, mental, social, intelligence and environmental elements, believes that mental health, as physical health is something more than just the absence of disease or other problems. Mental health refers to our feelings and emotions and consists of states of

awareness and acceptance of a broad category of feelings in themselves and others, the ability to show these feelings, being independent and ability to cope with the difficulties and stressful obstacles in daily life (7). People are constantly making simple and complex decisions throughout their lives. Each decision, depending on its simplicity or complexity, follows an amount of tension and mental pressure. Therefore, it is crucial to have skills to decrease this stress and gain satisfaction from this decision-making and problem solving skill (8).

The results of Bahrami et al. (9), confirms that teaching problem solving and decision making skills has a positive impact on reducing addicts' attitude towards the effects and dangers and tendency to use drugs. Professionals (10) consider teaching decision-making and problem-solving skills as components and minor elements of self-treatment behavior and it is very important (11, 12, 13). Inzlicht, Aronson, Good and McKay (14), showed that there is a significant negative correlation between "resiliency and tenacity" and "anxiety and depression" and the resilient ones can endure and overcome a variety of adverse effects. McCroskey (15) did a research on the impact of life skills training on resiliency of students. The results showed that teaching life skills to students could increase resiliency and reduce stress and increase tolerance to their problems. Teaching problem solving and decision-making skills causes people to deal with problems on their own and try to control them, and try not to have emotional reactions, try not to decide immediately and with no thought, and to find suitable solutions. Having the ability to solve problems can lead to more self-confidence, self-esteem, and self-worthiness. These factors can increase mental health and resiliency.

So, the research aimed to investigate the effect of educating problem solving and decision-making skills on students' mental health and resiliency.

Methods

A quasi-experimental design was done with a pre- and post-test and control group. The study's population consisted of all

undergraduate (B.S.) female students from different disciplines including physical education, computer sciences, accounting and electric engineering, under the auspices of the Imam Khomeini Relief Committee (RA) in Rasht; a total of 78 people. The sample consisted of 30 subjects who were selected by convenience sampling and randomly assigned into experimental and control groups by a chance procedure. Three scales were used for collecting the data. Inclusion criteria were as follows: to be a university student, to be an undergraduate student, desire to participate in study. Exclusion criteria were as follows: not having any mental disorder, absence in more than two sessions.

Connor-Davidson Resilience scale (CD-RISC). This questionnaire is designed by Connor and Davidson in 2003 to assess the resilience and strength against pressures and threats. The questionnaire consisted of 25 questions, and there considered a 5-option grading scale for each question (quite right to always right). Although this questionnaire measures various aspects of resilience but it has a total score. This questionnaire normalized this measure to be used in Iran and by administering this questionnaire on 248 individual, internal consistencies with Cronbach's alpha reliability of 89% was achieved. Also, Samani, Sahragard and Jokar reported that the Cronbach alpha for the scale is 0.93 (16). In another research showed that the scale has good psychometrics properties (17).

2- Symptom Checklist (SCL-25). This questionnaire developed by najarian and davoodi as a short form of SCL-90-R and has 25 questions that evaluate symptoms of mental disorders. There are 9 subscales to get the point for each spectrum and the total scores are added. Higher scores in each spectrum represent more signs of being impaired and vice versa (18). Najarian's research showed that it is a valid tool for assessing the symptoms of mental disorders(Cronbach's alpha was 0.97).

3-Ryff Scales of Psychological well-being questionnaire (18-RSPWB)

The scale (18 items) is designed by Ryff (1989) to measure 6 dimensions of

psychological well-being under these titles: self-admission, self-following, dominance over the environment, personal growth, positive relations with others, and having a purpose in life (16). Khanjani et al., reported that the Cronbach alpha for the scale is 0.73. In another study, Cronbach alpha was 0.76 (19).

After approval of the proposal with the permission of the Imam Khomeini Relief Committee (RA) of Gilan province to educate the students, 30 students were randomly assigned to experimental and control groups, and all subjects completed Ryff scales of psychological well-being, Symptom Checklist and Connor-Davidson Resilience scale as (pre-test). The experimental group consists of 15 people; problem solving and decision-making skills were taught in 7 sessions of 2 hours. The life skills intervention program designed by

WHO and included 10 subscales: Problem solving and decision-making skills, Development of critical and creative thinking skills, Communication and interpersonal skills, Self-awareness and empathy, Coping with stress and emotions. To compare the mental health and resilience of the experimental and control groups, a post-test was taken from both groups.

Results

Results

To evaluate the significance and difference between the two groups, the assumptions of MANCOVA were tested using the Leven's Test, and then a MANCOVA used to test the research hypotheses. The results are given in following tables.

Table 1. ANCOVA for comparing groups in psychological well-being

Sources of changes	SS	df	Ms	F	P	Eta2
Environmental dominance	0.74	1	0.74	0.68	0.42	0.03
Self-acceptance	0.66	1	0.66	1.00	0.33	0.04
Positive relationships with others	2.76	1	2.76	3.82	0.06	0.15
Having a purpose in life	13.66	1	13.66	18.71**	0.00	0.46
Personal growth	25.65	1	25.65	38.07**	0.00	0.63
Independence	5.69	1	5.69	5.75*	0.025	0.21

The difference between control and experimental groups was assessed in the field of psychological well-being components (Table 1). The results showed that the components of having a purpose in life and personal growth have a significant difference between the control and experimental groups at the level of 0.01. There is also a significant difference between the two groups regarding the independence component at the level of

0.05. We can say that the differences between the two groups' scores show that problem solving and decision-making skills has an effect on having a purpose in life, personal growth and the students' independence. Chi Eta (Eta2) shows that 46% of changes in having a purpose in life, 63% of changes in personal growth and 21% of changes in independence can be seen in problem solving and decision-making skills.

Table 2. ANCOVA for comparing two groups in mental disorders

Sources of changes	SS	df	Ms	F	P	Eta2
Somatization	12.47	1	12.47	62.57**	0.00	0.77
Obsessive-compulsive	13.72	1	13.72	35.54**	0.00	0.65
INT	12.56	1	12.56	32.06**	0.00	0.63
Depression	7.17	1	7.17	20.89**	0.00	0.52
Anxiety	14.43	1	14.43	21.71**	0.00	0.53
Phobia	13.38	1	13.38	33.19**	0.00	0.64
Paranoia	6.98	1	6.98	8.27**	0.00	0.30
Psychosis	11.33	1	11.33	29.17**	0.00	0.61
ADI	14.24	1	14.24	12.96**	0.02	0.41

Multivariate analysis of covariance showed that all components of mental disorder symptoms have a significant difference at the

level of 1% between the control and experimental groups. The difference between the scores of both control and experimental

groups shows that training problem solving and decision making skills is effective (table2). The difference between control and experimental groups in the field of resiliency exists at the level of 1%. We can say that the differences between the scores of the two

groups showed that teaching problem solving and decision making skills has an effect on mental health and resiliency of female students (table 3).

Table 3. MANCOVA for comparing control and experimental groups in resiliency

Sources of changes	SS	df	Ms	F	P	Eta2
Resilience	2775.63	1	2775.63	83.69**	0.000	0.77

Table 4. MANCOVA for comparing control and experimental groups in three variables

Sources of changes	SS	df	Ms	F	P	Eta2
Resiliency	2775.63	1	2775.63	83.69**	0.000	0.77
Psychological well-being differences	12.03	1	12.03	109.12**	0.000	0.81
Mental disorders' symptoms	17.28	1	17.28	216.40**	0.000	0.89

There is a difference between control and experimental groups in terms of resiliency, psychological well-being and mental disorder symptoms at the level of 1%. We can say that the differences between the scores of the two groups showed that teaching problem solving and decision making skills has an effect on mental health and resiliency of female students. Chi Eta shows that 77 percent of the resiliency changes, 81 percent of psychological well-being changes, and mental disorders symptoms changes are caused by problem solving and decision-making skills (table 4).

Conclusion

The results showed that teaching problem solving and decision-making skills is effective in students' mental health. This result is consistent with the results of the other studies based on the effectiveness of teaching problem solving in increasing self-control, self-efficacy, and reducing impulsivity of students (10, 20-24). In another study it was concluded that teaching problem solving skills is effective in reducing anxiety (25). Successful resolution of life issues leads to more confidence and being calm. While solving partially or incomplete, will seriously threaten the individual's mental health. If the person is not qualified for making decisions, he/she will not be able to decide, as a result, this will end up either bearing the conflicts and tensions arising from different situations or by making unreasonable and wrong decisions, will suffer from depression, anxiety and other disorders.

The most important decision-making process in the community is limited to choosing a career, a field of study, choosing the spouse and some other public choices. While the scope of these skills are very wide and they include from the most minor to the most general and most important behaviors. For this reason, decision-making skills are essential in providing mental health. Regarding the fact that problem-solving and decision-making skills can perform along with improving social and mental skills, and therefore, providing the physical, mental and social health, teaching these skills can help the person to convert his knowledge, values and attitudes to actual abilities. All things considered, it can be said that teaching problem-solving and decision-making skills can lead to the improvement of the person's mental health and can be helpful in preventing mental and behavioral problems. The results showed teaching problem-solving and decision-making skills can increase resiliency of female students. This result is consistent with the previous researches (26-35). A lack of appropriate problem solving skills is correlated with a number of emotional and behavioral problems such as depression and anxiety in adulthood (36). Problem solving and decision-making skills can expand the students' inventiveness, reasoning, thinking and the abilities and therefore they can use what they learnt to solve problems on their advantage and gain experience in many everyday problems. Students, who believe in their competence, can achieve their goals with more confidence and greater efforts and they don't get disappointed soon. In other words,

dealing with different problems and issues in life, if it is a successful dealing and solution, can increase the self-esteem, self-confidence, the endurance of the person and giving a sense of efficacy. Teaching life skills as generic skills in relation to everyday life could form the foundation of life skills education for the promotion of mental well-being, and healthy interaction and behavior. Life skills enable individuals to translate knowledge, attitudes and values into actual abilities - ie. "what to do and how to do it". Life skills are abilities that enable individuals to behave in healthy ways, given the desire to do so and given the scope and opportunity to do so. Effective acquisition and application of life skills can influence the way we feel about ourselves and others, and equally will influence the way we are perceived by others. Life skills contribute to our perceptions of self-efficacy, self-confidence and self-esteem. Life skills therefore play an important role in the promotion of mental well-being. Generally, it can be concluded that higher education in problem-solving and decision-making skills can promote mental health and increase their resilience. This study has some limitations, which have to be pointed out. We used self-reported data in pretest and posttest stages and our data is limited by the fact that it rarely can be independently verified. Also, because of time limit, we administered the intervention in 7 sessions. It is suggested that counselors and teachers with teaching problem-solving and decision-making skills to the students, and provide an underlying mental preparation to enter the adulthood's world.

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