

The Effect of Psychological Immunization on Pessimistic Attribution of Female Students with Dyslexia

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Objective: The present study was aimed to determine the effect of psychological immunization on pessimistic attribution in Female students with dyslexia.

Methods: The study was an experimental one, in which 60 Female students with dyslexia were selected randomly from Learning Disabilities Centers in Isfahan. Subjects were assigned to experimental and control groups (15 individuals in each group). All students completed the Children Attributional Style Questionnaire before and after training sessions. The experimental group participated in 10 intervention sessions (twice a week; 60 minutes per session) and were trained by psychological immunization program. Six weeks later, the experimental group answered the questionnaire again. Data were analyzed by analysis of covariance.

Results: The results of the analysis of covariance showed that the intervention program significantly decreased the pessimistic attribution style of the experimental group in comparison to the control group ($p < 0.001$).

Conclusion: It seems that the application of a psychological immunization program has influenced pessimistic beliefs of Female students with dyslexia and is probably useful as a rehabilitation program for modifying the style of attribution ($P < 0.001$).

Keywords: Students with Dyslexia, Pessimistic attribution style, Psychological immunization

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Introduction

Dyslexia is a disorder in which reading achievement is much lower than what is expected from a child, related to one's age, education and intelligence. It hinders academic achievement or daily activities that are required for reading (1). Almost 80% of children with learning disabilities suffer from dyslexia (2), and it is 3 to 4 times more common in boys than girls (3). Students with dyslexia attribute their success and failure to luck or external, uncontrollable and unstable factors. They have a more cynical and negative attribution style than their normal peers (4). This gradually leads to form low academic self-concept (5) and learned helplessness (2,6,7) in them. About twenty years ago, Seligman stated that an organism that is exposed to uncontrollable events will generalize that uncontrollability to other situations in life. Therefore, it behaves inactively and incompetently in controllable situations and does not know how its

response might be fruitful. He expanded his experiments about animals into the realm of human studies. Similar conditions in humans can predispose patients to learned helplessness. In this situation, one learns that responses and outcomes are independent of each other, and this will lead to a deficit in learning subsequently. Learned helplessness in learners refers to a condition that they do not know the efforts associated with the achievement and believe that events are out of their control. Helplessness in learning basic skills like reading will cause the student to feel incompetency in spite of having normal intellectuality. Students with dyslexia are considerably differed in achievement motivation (8), depression (9), self-esteem (10), loneliness, helplessness (11) and self-regulation (12) compared to normal peers. These individuals also encounter negative social attitudes that involve disrespect, humiliation and labeling (13). Abramson and

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Seligman stated that the way individuals interpret the events in different positions (their attribution style) has an important role on feeling of learned helplessness. So, the explanations and causal attributions will manifest one's reactions and emotions to a given event. Generally, attribution style classifies the cause of failure and lack of control into three dimensions: external/internal, global/specific, stable/unstable and on two levels: optimistic (attributing failure to unstable, specific and external factors) and pessimistic (attributing failure to stable, global and internal factors) (14). Evidence-based researches have shown that the use of positive and optimistic attribution style reduces physical symptoms (15), depression, anxiety (4,16) and social dysfunction (17). In recent decades, positive psychologists have emphasized skills such as coping strategies, social problem solving, and motivational and cognitive resource reinforcement (14,18,19). One of the applications of positive psychology is an attribution and psychological immunization program based on Pennsylvania Prevention Model. This model consists of both cognitive and social aspects. Seligman (1970) linked the psycho-educational components, cognitive-behavioral therapy, rational-emotive therapy, problem solving training, and social skills training in order to present the Pennsylvania Prevention Model (20,21). Pessimistic attribution style is a predictive index for academic and physical health problems, professional advancement and depression. Various studies have shown high levels of general anxiety (22), aggression (13), interrelational difficulties, social problems (23) and lower self-esteem in people with pessimistic attribution style (24,25). Helplessness, inadequacy and isolation which result from the pessimistic attribution style lead to loss of opportunities for students to solve the problems correctly. These situations can be changed by stable and multidimensional interventions based on promoting school health. Since social problems lead to isolation and depression in students with dyslexia, training the predictability and controllability of events is insufficient for them. In such cases, issues including problem solving training, assertiveness, and coping and negotiation skills should be taught to them in order to deal with social problems (26). A number of researchers have confirmed the effect of a psychological immunization program with the purpose of reducing stressful experiences and anxiety (27), depression (28) and psychological distress (29).

Some studies have indicated the opposite results. One research showed that a psychological immunization program had not reduced the anxiety of people with physical disorders. They explained that psychological immunization is a beneficial and practical strategy for various physical disorders, but has limitation for reducing anxiety and worries (30). Other research was concentrated on determining the effectiveness of an immunization program on the stress, anxiety and depression of students in the university. The results showed that there was significant difference between experimental and control groups according to stress and anxiety but they were not differed according to depression (31). The psychological immunization program which is used in present study includes psycho-educational components besides cognitive-behavioral therapy, rational-emotive therapy, problem-solving training, and social skill training. Its objective was to introduce adaptive attribution styles, positive and optimistic emotional experiences, and inhibit from stressful experiences and their negative emotional correlates in order to educate the most important aspects of thinking (i.e. positive and optimistic attribution style). The psychological immunization program in the present study is distinguished from the other cognitive-behavioral programs according to its emphasis on certain factors instead of assaulting oneself, so an individual will provoke an attempt for behavior modification, preventing a problem or overcoming it. In the present program, the students will be confronted with social skills training, problem solving skills, assertiveness training, and coping and negotiation techniques for social difficulties along with psychological immunization. In fact, it can be said that a psychological immunization program which is focused on cognitive skills training and adaptive explanations causes people to report fewer negative emotional reactions when confronting unpleasant events. With regard to the fact that the emotions are acquisitive in academic situations, the need for interventions for the purpose of emotional management, such as a psychological immunization program, is inevitable (6,18). It is important to provide for the physical, psychological and educational health of students with dyslexia and to prevent their problems. It seems that the use of psychological immunization as a cognitive-social approach can be effective in promoting health, improving attitudes and changing a negative and pessimistic attribution style of students. This study

seeks to answer the question of whether a psychological immunization program can be effective in changing and improving the attribution style of students with dyslexia or not.

Methods

The present study was an experimental one, in which a pre-test and post-test design with a control group was used. In this study, the psychological immunization program was considered as the independent variable and pessimistic attribution style as the dependent variable. The statistical population of the study fully consisted of Female students with dyslexic (aged 7-9 years old) who were studying in 2nd and 3rd grade in the 2013-14 academic year. In this study, 30 girls were selected randomly, and then written informed consent was completed by their parents. Their pessimistic attribution style was measured by Children’s Attribution Style Questionnaire (CASQ).

Raven Intelligence Progressive Matrices: in order to measure the intelligence quotient of students, Raven Intelligence Progressive Matrices was used. It is composed 36 colored pictures which were made by Raven in 1974. The test was normalized on 725 children (aged 5 to 11 years old) in Tehran and its correlations with Bender Gestalt Test varied from 0.52 to 0.75. Its reliability was reported from 0.69 to 0.91 and 0.80 to 0.93 by test-retest and half-split respectively. The test is suitable for 5 to 9 year-olds and intellectually disabled children. Children can chose one picture from 6 to 8 separate pictures which will complete the whole picture on the top of the page. The test has high validity for recognizing the general factor of intelligence (32).

Reading Disorder Test: the test was used to diagnose and measure the ability level of reading and was developed by Nasefat. The test has one specific text for each academic grade and measures three clinical characteristics: false reading, reading speed, and

comprehension. According to the test, 1 point is considered for each false, with the falses being summed up as a whole false. 1 point is given for each true answer for comprehension. Finally, the time which is spent for reading the text will be calculated based on the seconds and considered as a reading speed index. The reliability quotients for 3rd, 4th, and 5th grades are reported 0.56, 0.61, and 0.68 respectively (33).

CASQ: this questionnaire was developed by Nadine Kazlo and Richard Tannin Baum in 1996. It contains 48 questions with two options, scored as 0 and 1. It assesses attribution style dimensions (stable-unstable, global-specific, internal-external). Pessimistic attribution style is rating by attributing the cause of failure to stable, global, and internal factors. This questionnaire was developed for 6 to 13 year-old children. Its internal consistency was 0.75 through Cronbach’s alpha (14). The test is performed in 20 minutes, and the child should select whichever option from the actual conditions he was more likely to perform. First, children completed CASQ and then were divided into two experimental and two control groups according to their gender (each group contained 15 individuals). Two experimental groups participated in 10 training sessions and received a psychological immunization program (twice a week; each session lasted for 60 minutes) in addition to a daily program (phonological awareness training), but the control group only received the daily program. The Pennsylvania psychological immunization program has been designed to facilitate adaptive attribution styles, positive emotional experiences, and to inhibit stressful experiences and their correlates (14). The program was developed by Seligman in 1970 for the first time. It was administered to experimental groups for 10 sessions and the content of each session was as table (1).

Table 1. The content of psychological immunization program sessions

Sessions	Content of each session
1 and 2	Training about skills required for recognizing negative automatic thoughts in mind.
3 and 4	Consider one’s beliefs about self and the world; form the hypothesis about them.
5 and 6	Try to exchange the explanations when confronting with unpleasant event.
7 and 8	Avoid thinking about the worst possible consequences of events when confronting with unpleasant events.
9 and 10	Training problem-solving skills such as: thinking, consider other’s views, determine the goals and present alternative solutions, select the way to apply the solutions, test the effectiveness of selective solutions, assertiveness and negotiation.

All students completed CASQ at the end of tenth session and 6 weeks later. Data were analyzed by analysis of covariance and repeated measures using

18 versions of SPSS (special program for social sciences).

Results

As shown in table (2), the mean of pessimistic attribution style of experimental group has

obviously reduced from the pre-test to post-test situation.

Table 2. Descriptive indices of pessimistic attribution style of girls in experimental and control group

Group	Pre-test		Post-test	
	Mean	Standard deviation	Mean	Standard deviation
Experimental	19.67	2.66	7.13	3.66
Control	18.27	3.35	18.33	2.06

As indicated in table (3), there is a significant difference ($P < 0.001$) between the experimental and control groups according to pessimistic attribution style. Also, according to η^2 , 79% of the variation of

pessimistic attribution style can be explained by participating in the psychological immunization program.

Table 3. Analysis of covariance of psychological immunization program on pessimistic attribution style of experimental and control groups

Source of change	SS	df	MS	F	Sig	η^2
Pre-test	4864.13	1	4864.13	551.25	<0.001	0.95
Group	940.80	1	940.80	106.62	<0.001	0.79
Error	247.07	28	8.82			
total	6052.00	30				

The Bonferroni test was used to determine whether there is a significant difference between the mean of pessimistic attribution style in three situations (pre-

test, post-test, and follow up) experimental and control (Table 4).

Table 4. Results of Bonferroni test for repeated measures of pessimistic attribution style in experimental group in three situations

J	R	Mean difference	Standard deviation	Significance level
Pre-test	Post-test	10.533*	1.35	<0.001
	Follow up	13.800*	1.006	<0.001
Post-test	Pre-test	-10.533*	1.35	<0.001
	Follow up	3.267*	1.193	0.05

The results of the Bonferroni test (Table 4) indicated that there is a significant difference ($P < 0.05$) between the pessimistic attribution style in experimental groups in pre-test, post-test and follow-up situations. We can conclude that the psychological immunization program has positively influenced the reduction of pessimistic attribution style of the experimental group even 6 weeks after intervention.

Discussion

The findings showed that the psychological immunization program positively influenced the reduction of pessimistic attribution style of the experimental group ($P < 0.001$). This was consistent with previous studies (6,13,18,34-37). The studies have demonstrated that negative affection and emotion resulting from attribution style has an important effect on learning and academic achievement, because it determines the effort of a person to learn special skills (38). Dyslexic students, in comparison to normal peers, attribute their

success and failure to external factors more than their ability, internal, controllable, and stable factors. When dyslexic students attribute their academic failures to external factors, it will form a low self-concept in them which can remain until high school (22,36). This situation gradually leads to helplessness and feeling a lack of competence and makes the students less likely to start new duties, so they feel a lack of control over their environment (39). Students with dyslexia have less motivation and self-esteem (11), self-regulation (21), more depression (23) and loneliness (11,13) compared to normal students. Their attitude toward themselves, the world and their future is negative and their personal experiences are sadder than others. Repeated failures in different tasks cause dyslexic children to believe they are not able to cope with environmental requirements. As a sequence, their interpretation about self and environment becomes more negative and cynical than others, and they respect themselves less than others. The negative

and pessimistic attribution style of students will persist for a long time and affect many aspects of their life, probably causing academic, social, and behavioral problems. Studies have indicated that we can modify students' attribution style in positive ways (14). Also, Sideridis (13) pointed out that a psychological immunization intervention is the cause of enhancing the ability to think about hypothesis-making and to understand humor in social relations in students.

It can be explained that the strategies of a social-cognitive approach emphasize inner speech as a device for guiding overt behavior. Some studies (6,34) examined the effectiveness of a psychological immunization program on flexibility, adaptive coping strategies, some protective resources (like optimism, positive effect, and self-esteem) and reducing psychological symptoms (such as depression, negative effect, and perceived stress) while experiencing stressful academic situations in students. Steinhardt showed that psychological immunization can manage stressful experiences and modify pessimistic attribution style in students (18). Nikneshan indicated that positive and optimistic attribution style training by using a psychological immunization program promotes general health and psychological safety in students. Also, it has reduced depression, social dysfunction, anxiety, insomnia, and physical symptoms in students (40).

The components of the psychological immunization program were presented step by step in sequential sessions and this might influence the pessimistic attribution style of students. Since the psychological immunization program was designed based on the learned helplessness model and children's pessimistic thinking, the students make acquaintance with pessimistic attribution features, its continuity and personalization, they can consider academic affairs and life events more flexibly than before. In this program, dyslexic students learn to seek the causes of unpleasant events either in themselves or outside.

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They also learn to take responsibility for their mistakes and try to modify their behavior, and continue to respect themselves even if they are not the cause of problems. This way of dealing with problems which is emphasized in psychological immunization programs helps students to consider their behaviors as unsuitable instead of accusing themselves. Since blaming one's behavior refers to unstable and modifiable causes, it stimulates the student to try and change the behavior, hinder the problem or overcome the failure. When experiencing negative emotions that dyslexic students are faced with due to their pessimistic attribution style, the techniques used in the program helped the students change their thoughts in order to change their feelings, and this itself is the starting point for positive changes.

The results were limited to 2nd and 3rd grade students with dyslexia in elementary school. Because of reading problems in dyslexic students and the use of a paper-pen test (CASQ), the researcher must read the questions for the students, so the completion of CASQ took a long time. It is recommended that a psychological immunization program be used as a complementary method alongside other rehabilitation techniques to help children who are prone to reading disabilities.

Conclusion

With this study, we can conclude that a psychological immunization program is a multidimensional intervention, and must be taught to teachers, experts, and parents who work with dyslexic students in order to provide students' academic health and avoid problems resulting from pessimistic thinking.

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