

Counseling Needs of Students with Dyslexia and the Effect of Counseling on Psychological Well-being of the Students

Najmeh Ghiasi¹, PhD Candidate;  Najmeh Sedrpoushan^{2*}, PhD;  Ahmad Abedi³, PhD; Amanollah Soltani⁴, PhD

¹Department of Psychology, Khomeinishahr Branch, Islamic Azad University, Khomeinishahr, Iran

²Department of Consulting, Khomeinishahr Branch, Islamic Azad University, Khomeinishahr, Iran

³Department of Psychology, University of Isfahan, Isfahan, Iran

⁴Department of Educational Psychology, Kerman Branch, Islamic Azad University, Kerman, Iran

*Corresponding author: Najmeh Sedrpoushan, PhD; Department of Consulting Khomeinishahr Branch, Islamic azad University, Khomeinishahr, Iran.

Email: sedrpooshan.na@gmail.com

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Abstract

Background: Specific learning disabilities are known as the neurodevelopmental problems affecting the brain's ability to receive and process verbal and nonverbal information effectively, leading to some persistent problems in students' academic skills. The present study aimed to study the counseling needs of students with dyslexia and investigate the effect of counseling on psychological well-being of these students.

Methods: This is a mixed method study conducted quantitatively and qualitatively. The statistical population comprised all the dyslexic students aged 8 to 12 years old in Kerman, Iran who had referred to learning disorders centers in the academic year of 2019-2020. The research sample included 40 students with dyslexia selected using a purposive sampling method. We randomly assigned them to experimental and control groups. The children in the experimental group received eight 90-minute sessions of education based on consulting needs. For data collection, students' reading impairment test and students' psychological well-being test were utilized. The data were analyzed using the analysis of covariance (ANCOVA).

Results: The qualitative findings resulted in an educational package consisting of a three-stage assessment of educational needs of students with learning disabilities, namely the identification of counseling needs in the phases of identification, coordination, action and control. Additionally, ANCOVA indicated that among the components of dyslexia, word reading test (0.40 ± 0.50 vs. 0.80 ± 0.41 ; $P=0.001$), rhyme test (0.20 ± 0.41 vs. 0.75 ± 0.44 ; $P=0.001$), word comprehension test (0.10 ± 0.30 vs. 0.55 ± 0.51 ; $P=0.021$), and voice removal test (0.05 ± 0.22 vs. 0.65 ± 0.48 ; $P=0.001$) (had significant changes).

Conclusions: Based on the quantitative and qualitative results of the research, it can be inferred that identifying counseling needs, preparing counseling packages, and providing rehabilitation interventions based on those needs can be effective in reducing students' dyslexia-related problems.

Keywords: Counseling needs, Dyslexia, Psychological well-being

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1. Introduction

A specific learning disability is a disorder that interferes with a student's ability to listen, think, speak, write, spell, or do mathematical calculations. Students with a specific learning disability may struggle with reading, writing, or math (1). What used to be known as "Learning Disabilities" in the latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was replaced by the "Specific Learning Disorder" criteria. Specific learning disorder has been identified as a subset of neurodevelopmental problems, which persists for at least 6 months and causes persistent issues in learning basic academic skills, such as reading, writing, and mathematics. In addition, with this problem, student's academic performance

is significantly lower than the level expected from their ages (2). One of the most common learning difficulties is the inability to read or understand writing, which is referred to as "dyslexia", which includes about 80% of cases of specific learning disorders (3, 4). Reading is characterized by two main tasks: "decoding and comprehension" (5); thus, dyslexia appears in the form of incorrect, slow, and challenging reading of words, as well as decoding and poor spelling skills (6). dyslexia is not related to intelligence status, age, sensory, cognitive abilities, or other dimensions of development (1).

Dyslexic students face numerous problems; they are uninterested in academic issues and have a negative view of their competencies, which often lasts until adulthood (3). The dyslexia-associated

personality traits caused by trauma, such as neuroticism and psychosis, in dyslexic children remarkably affects their quality of life (7). Therefore, learning difficulties in students can be expected to provide a platform for mental pathology that has adverse effects on students' academic performance. Research has also shown that dyslexic students have a lower level of achievement motivation (8), self-esteem (9), as well as a high level of depression (10) and a sense of loneliness (9) compared to normal ones. In fact, dyslexia can directly and indirectly lead to a vicious cycle of poor academic performance, reduced mental health, and poor learning; thus, etiology and the use of effective interventions are known as the main goals of clinicians and researchers in this field.

A previous study indicated that given the pathologies presented in the field of dyslexia, several interventions have been tested based on approaches to the treatment of this disorder (11). Rhythmic reading training and non-specific stimulation (12), interventions based on cognitive abilities (13), direct training (14), and interventions based on morphological analysis in word recognition (15) are all the efforts made to remedy this problem. However, meta-analyses suggested that not all the efforts have been successful in reducing the symptoms of dyslexia, and that only interventions that benefit from the reviewed and evidence-based protocol will be efficient (16). Some argued that even effective correctional programs may result in only a slight improvement in dyslexic students (17). Consistent with the findings of Galuschka and colleagues (18), in a meta-analysis of the effect size, therapeutic approaches are normally reported for treating moderate dyslexia. Therefore, as indicated by research evidence, reaching an effective protocol for learning disabilities is still recognized as one of the challenges for researchers and clinicians in the field of education with special needs.

One of the issues that may play a pivotal role in the failure to provide an effective intervention for dyslexic children is ignoring some of the special counseling needs seen in primary and secondary schools (19). Therefore, the presentation of correctional programs should be based on the educational, career-related, and social personality needs of all students, especially those with special needs, including dyslexic ones (20). In fact, some believed that the intervention programs offered to children with special needs do not work well due

to their lack of skills in understanding the special needs of this group (21). However, the majority of studies have exhibited that the special needs of students with special learning disabilities are neglected (22, 23).

Overall, the findings of the literature revealed that dyslexia is recognized as one of the most prevalent problems of students with special learning disabilities, which has many academic and psychological consequences (24, 25). On the other hand, the review of these interventions shows that providing well-codified correctional programs continues to be one of the main challenges for counselors and clinicians in the area of special learning problems; that is because the special counseling needs of students have been ignored. As a result, it is necessary to identify the counseling needs of students with dyslexia and develop and validate protocols based on these needs. According to the aforementioned points, the present study primarily seeks to answer these questions: What are the counseling needs of dyslexic students? Does the counseling needs-based package have a significant effect on reducing the dyslexia symptoms of students with special learning disabilities?

2. Methods

This is a mixed method study conducted quantitatively and qualitatively. In the qualitative part of the research, we performed a thematic analysis with an interpretive approach. In the quantitative part, a quasi-experimental research was carried out by a pre-test and post-test design with a control group. Data collection tools for the identification of students' counseling needs were semi-structured interviews. In a semi-structured interview, there is generally a specific framework that needs to be addressed. Our statistical population included all the dyslexic students aged 8 to 12 years, who lived in Kerman, Iran in 2019 and had referred to the centers of learning disorders. The sample consisted of 40 dyslexic students purposefully selected and randomly assigned to the control and experimental groups. For their allocation to these two groups, we initially determined 40 lottery balls (with 20 balls for the experimental and 20 for the control groups). In the next steps, each student chose a ball and was randomly assigned to one of the groups. The total sample size (40) was also selected based on G*Power statistical software with an effect size of 0.7, a significance level of 0.05, a test power of 0.7

(1-B), and the number of two groups ($n=20$) (26). It should be noted that the standard dyslexia test was used for diagnosis and information collection (27). The following tools were utilized for data collection.

2.1. Students' reading impairment test (Nema):

In 2005, Karami and colleagues (27) designed this tool that has been validated for monolingual (Persian) and bilingual (Turkish and Kurdish) primary school students (Quoted from, 27). The authors listed 10 subscales for the present tool, namely word reading test, word chain test, rhyme test, picture naming test, reading comprehension test, word comprehension test, sound elimination test, non-word reading test, letter test, and signs test. The preliminary study was conducted in three cities of Tabriz, Tehran, and Sanandaj, where the Cronbach's alpha coefficient for the whole test was reported to be 0.82. The reading subtest is a 40-word test on three levels of words, including lead and fox (with an alpha of 0.98), table and bus (with a cronbach alpha of 0.99), and water and jaleh (0.91). The test of reading meaningless words (sura, dalibal, and sharkeh) was conducted with 40 words whose alpha coefficient was reported to be 0.85. The word comprehension test is a 30-item subscale with four options (For example, price means? 1- price, 2- debt, 3- loan, 4- profit) whose alpha coefficient is 0.73. The word chain test is a text of 109 words without spaces that the subject separates them; its internal consistency with alpha is 0.65. The text comprehension test also comprises two sub-tests (common text for the second and third grades, and specific text for all the grades) whose coefficients were reported to be 0.61 and 0.62. The rhyming test is also a 20-word tool. The individual finds rhyming words among them; the coefficient of this test is 0.88. The naming test has versions A and B, each of which has 20 shapes whose names must be kept in mind by the student; the alpha coefficient of this scale is 0.75. The sound removal test also consists of 30 words that the subject must read after removing the desired sound, the internal consistency of the phoneme elimination test using Cronbach's coefficient was 0.78. The letter sign test consists of three letters (M, A, N), where the person must remember the words beginning with these letters; the alpha coefficient of this test is also 0.66. In the symptom test consisting of six words (boy name, girl name, fruit name, kitchen utensils, body parts, and colors), the subject should remember

the number of words related to each group, whose alpha coefficient was reported to be 0.75. It should be noted that the cut-off point of this test is 157 by the manufacturers, so getting a score of 157 and below, which indicates 114 errors or more, is known as a dyslexia diagnosis. Furthermore, reviewing the validity and reliability of this tool over the recent years has implied the psychometric adequacy of the tool for future research. Karami and colleagues (27) reported the following Cronbach's alpha coefficients: 0.97 for high-frequency vocabulary tests, 0.98 for medium-frequency, and 0.98 for low-frequency ones, as well as 0.95 for word chain, 0.89 for rhyme, 0.67 for naming pictures a, 0.68 for naming pictures b, 0.48 for understanding the text, 0.71 for understanding the words, 0.95 for deleting sounds, 0.95 for reading non-words, and 0.97 for pseudo-words. Their report confirms the psychometric indices of this tool for research in the field of dyslexia (27). Examination of psychometric properties showed that face validity was confirmed using the opinion of psychology professors (27). Additionally, the content validity ratio (CVR=0.75) and content validity index (CVI=0.78) indicated the confirmation of content validity based on the Lawshe table. There was also a low divergent correlation between the total scores of the dyslexia test and the psychological well-being ($r=0.17$) questionnaires, confirming the construct validity in the present study.

2.2. Students' psychological well-being test:

In order to measure the psychological well-being variable, a standard questionnaire was used as a measurement tool. This questionnaire consists of 18 questions and aims to evaluate psychological well-being from different dimensions. It comprises three dimensions, each of which has its own questions. The scoring range of this questionnaire is based on the Likert scale of six options, from strongly agree=6 to strongly disagree=1. Questions 1, 3, 4, 5, 9, 10, 13, 17 are scored in reverse. A score of 63 is also used as the cut-off point in the present tool, which is the result of the average minimum (18) and maximum (108) points in this questionnaire. Jokar and co-workers confirmed the reliability of the questionnaire using Cronbach's alpha method. In their research, they reported Cronbach's alpha coefficient as 0.87 for the whole scale, 0.76 for the subscales of self-satisfaction, 0.85 for satisfaction with others, and 0.73 for life satisfaction in the acceptable range (28). In addition, CVR (0.75)

and CVI (0.81) indicators confirmed the content validity of the tool.

2.3. Research method: The research process in the present study can be divided into qualitative and quantitative parts. In the qualitative section, with the aim of identifying the counseling needs of dyslexic students from the perspective of educators (15 women), parents (15 mothers), and students (5 boys and 10 girls), we conducted semi-structured interviews with each of them. In the next step, based on the interviews and codifications, the main dimensions of the needs were identified and oriented based on each person, which were finally analyzed with atlas.ti 7 software. After identifying the main needs of dyslexic students, the content validity of the educational-therapeutic package was confirmed based on opinions of 10 psychologists and counselors in the field of learning disorders. The content reliability of the counseling package was evaluated using opinions of 10 psychologists and with the Guilford coefficient, which confirmed the reliability and the possibility to implement the intervention package in the present study. Meanwhile, in the quantitative part of the research, 40 dyslexic students, who were randomly placed in the experimental and control groups, entered the research process, in which pre-tests were taken from both groups. The experimental group then received eight half-hour sessions based on the prepared counseling package while the control group did not receive any intervention. At the end of the sessions, post-test was taken from both groups. Initially, Shapiro-Wilk Test was utilized for evaluating the normality of data distribution. According to this test, a significant level of over 5% for all the components indicated that the Univariate distribution was normal. Subsequently, the significance level of Levin test showed that the variances between the two groups had homogeneous conditions ($P < 0.05$). In addition, with the aim of variance-covariance matrix homogeneity, the box test was used, in which a significant level for the research variables was over 0.05 and the assumption of equality of variance in the samples was confirmed. Finally, the data obtained from the quantitative section were analyzed through ANCOVA via SPSS version 26.

3. Results

We investigated 40 dyslexic children aged 8 to 12 years in Kerman, Iran with a mean age of

10.66 ± 4.09 for all the participants. The mean age of the experiment group was 10.13 ± 3.89 while being 10.66 ± 4.09 in the control group. Moreover, according to the reports of the students' parents, over 32.5% ($n=13$) of them were in a poor social-economic condition, 45% ($n=18$) were in an average condition, and ($n=9$) 22.5% were in an above-average condition. The inclusion criteria were being diagnosed with dyslexia based on standard tools and DSM-5 criteria, being in the age range of 8 to 12 and the consent of parents; the exclusion criteria were the existence of other acute mental disorders and use of psychiatric drugs, along with being absent for more than two sessions.

The first section of this paper reports the quantitative findings. Since the qualitative results make up a significant part of the research findings, only the most essential findings were reported herein. Primarily, the results of the semi-structured interviews are summarized based on the educators' views on the counseling needs of dyslexic students.

Based on the analysis of the sub-categories obtained from the interview with the educators, nine main of children needs were determined, including 1) class-emotional communication (proper communication, the importance of family, normal attitude, parental perseverance, encouragement, acceptance of problems, the need for a sense of empathy, the need for a sense of calmness, classroom management), 2) improvement in social skills (more aggression among boys, more aggression among girls, the need to respect the student, the role of parents in promoting social skills, type of parental occupation), 3) giving reward or punishment (avoidance of punishment, importance of reward, non-physical punishment, distraction, decentralization, lack of attention to subject matter, lack of class comprehension, underemployment), 4) family (negative view of family, non-acceptance of issues by family, lack of recognition of families, lack of cooperation of families, projection of families, Neglect of the family), 5) psychological issues (frustration, the need for counseling for low self-esteem), 6) active participation of the coach (awareness of growth background, informing parents, gaining parents' trust, informing parents, requesting cooperation from parents, active participation of the coach), 7) psychosomatic problems (the effect of dyslexia on behavioral dimensions, being made fun of by others, low self-esteem, crying, hand tremors,

anxiety), 8) defects in motor cognitive skills (poor short-term memory, inability to communicate, inability to interact, lack of anger control, lack of vocabulary, impaired motor skills, impaired comprehension and expression skills, more dependence of dyslexic students on others), 9) need to control (need for more justification, need for more support, avoiding being made fun of by others, fewer abilities, fighting with other students, inability to interact, or lack of behavioral control, poor practical skills, violent reactions).

At this stage, a connection was made between the related concepts and categories. Then, students' counseling needs were examined from the perspective of parents. In order to answer this question, the researcher made an effort to discover the components of counseling needs of students with learning disabilities from the parents' point of view. At this stage, theoretical saturation (theoretical adequacy) was achieved. In other words, the key informants said what they should have said, no new items were added to the items they mentioned, and the coding was performed again after the theoretical saturation. A total of 177 codes were obtained from the interview texts.

3.1. Axial Coding

After examining the counseling needs of students with dyslexia in the previous stages, at

this section, a connection was made between the related concepts and categories. As shown, Table 1 includes eight major concepts for the concept of counseling needs of dyslexic students.

As seen in Figure 1, the counseling needs of students with dyslexia have been reported. The general categories obtained by using the interview texts and the questions include: familiarity with counseling, number of friends, ability to communicate and interact, fear and shyness, self-confidence, experience of dealing with parents and others, dependence and ultimately distraction. Table 2 shows the result of counting the mentioned categories in the interview of dyslexic students.

According to the results of counting the categories in the interview texts, the highest number of repetitions among dyslexic students belonged to fear and shyness with 15 digits, followed by the number of repetitions of the category of parent-relative encounters being counted 14 times in the interview texts. Dependency was ranked third in the table, which was counted in software 8. The lowest number of repetitions was zero distractions, followed by no contact with parents and others with zero repetitions. Subsequently, the number of friends was high, mentioned by only one student whereas the rest had a small number of friends. In this stage, the theoretical integration and refinement of the semi-structured interviews with teachers,

Table 1: Axial coding of counseling needs of dyslexic students

Lack of familiarity of parents with educational techniques	Subcategories
Highly dependent children of dyslexic parents	Provide new texts to students, use different forms, practice and constant practice, constantly learn information about educational methods
High consulting costs	Constant support of the mother, fear of loneliness and the need for the presence of the mother, inability of the child to organize his work, parental work of the children
Existence of parents' differences in recognizing child learning disorders	Inability to pay for counseling, long counseling sessions, high costs of programs and requirements for dyslexic children, high costs of schools and centers for learning disabilities, long time to improve and upgrade students' skills
Students' low self-esteem	Rejection of the existence of learning disabilities in the child by the father, increased tension between parents due to the presence of a dyslexic child, wrong justification of parents about the child's disorders, lack of knowledge and awareness of parents about the child's problems
Hatred of school and teacher	Inability to adapt to the environment, fear and anxiety about homework, poor student management in personal affairs, fear of being assigned tasks, tension with siblings at home, mistreatment of teacher and principal at school, poor reading, especially in class Persian, being ridiculed by peers, fear of responding to the teacher, isolation, contact with few friends
Existence of stereotypes	Misconceptions about learning disabilities by parents, misconceptions about counseling centers, lack of full knowledge of counseling center activities, populism
Counseling-oriented training	Continuous cooperation with counseling centers, obtaining educational information from counseling centers, reducing the number of problems of dyslexic children due to referring to counseling centers, education while dealing with children in a principled manner
Lack of familiarity of parents with educational techniques	Provide new texts to students, use different forms, practice and constant practice, constantly learn information about educational methods

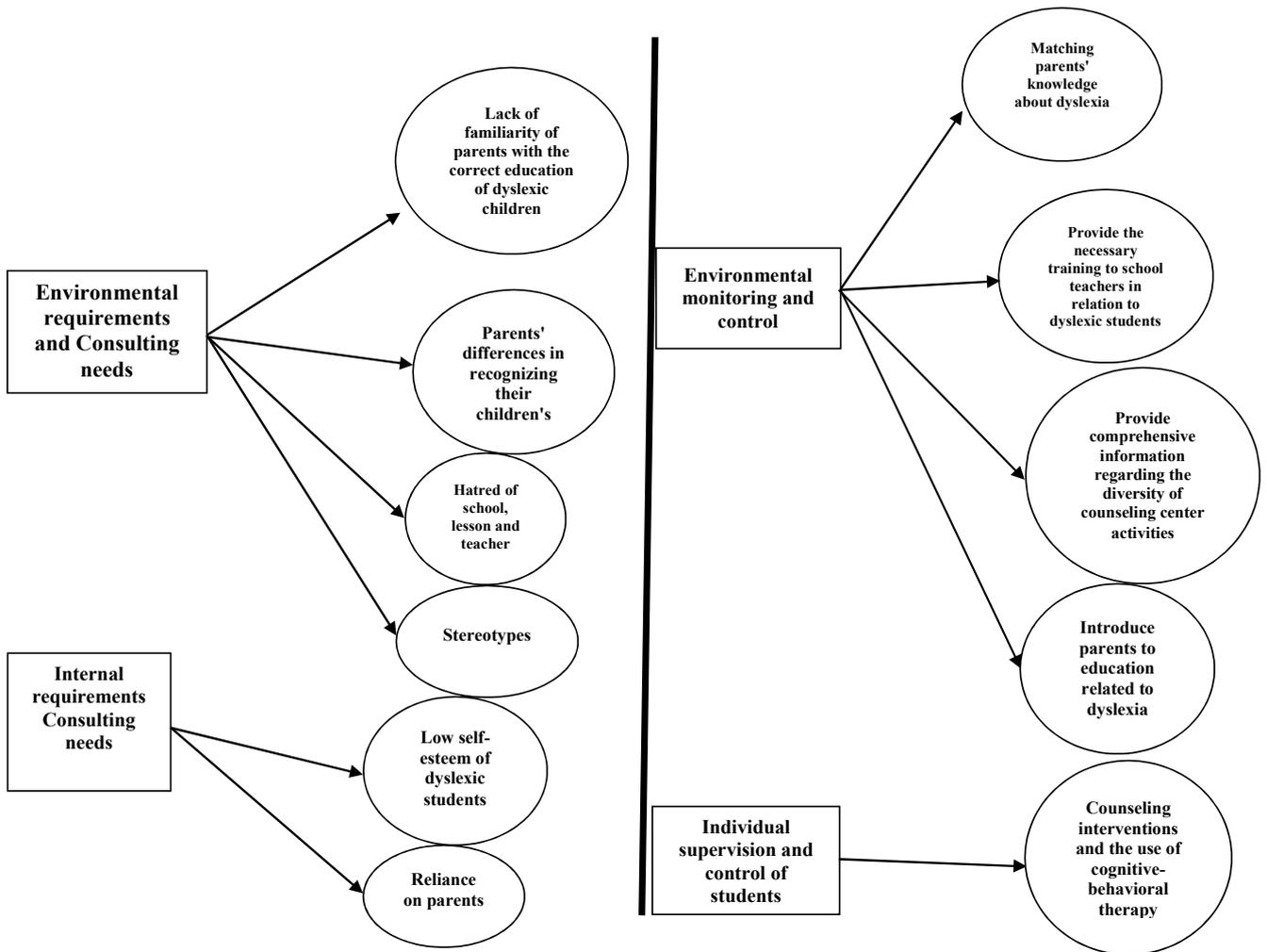


Figure 1: The figure shows the multilevel counseling needs of students with dyslexia

Table 2: Analysis of semi-structured interviews of dyslexic students

Categories	Repeat amount
Self Confidence	3
Familiarity with counseling	4
Lack of familiarity with counseling	2
Encounter between parents and others	14
Fear and shyness	15
Many friends	1
Low number of friends	6
Ability to communicate and interact	4
Distraction	3
lack of confidence	8
Do not clash with parents and others	0
Inability to communicate and interact	5
Lack of distraction	0
Independence	6
There was no fear or shyness	4
Dependence	10

parents and children were done. Ultimately, the central categories that were identified could be divided into three general categories.

Table 3 shows a summary of counseling sessions for students and parents. After reporting the qualitative findings and presenting a counseling

Table 3: Summary of student and parent counseling sessions

Meeting	Minutes and goals of the student counseling package	Minutes and goals of the parent counseling package
First	Provide consent forms and complete the demographic information form to the recipients of this counseling-treatment package to reduce students' dyslexia symptoms. Introducing and presenting basic information about other sessions and the purpose of presenting this treatment counseling package, describing the duties and responsibilities of individuals and creating peace and reducing student stress through the introduction and applications and usefulness of the course, how the instructor interacts with the student.	Submitting consent forms and completing the demographic information form to the recipients of this educational-therapeutic package to reduce students' dyslexia symptoms. Introducing and presenting basic information about other sessions and the purpose of presenting this educational-therapeutic package, describing the duties and responsibilities of individuals and creating comfort and reducing student stress through the introduction and applications and usefulness of the course, how the instructor interacts with knowledge. Learn. Parents introduce themselves and say why they decided to attend group sessions of educational-therapeutic reading. - Providing basic information about the symptoms of dyslexia of students - Explaining the reason for holding these sessions and the purpose of participating in group sessions of educational - treatment of dyslexia - Explaining the principles of confidentiality and reassuring clients whose information is completely confidential Task: Introduce yourself, Express your feelings about children's dyslexia
Second and third	Assignment: Introducing yourself, expressing your feelings about poor reading, answering questionnaires or pre-test questionnaires.	Summarize the training method and its purpose, teaching the steps of the first stage - cohesion or cohesion: the amount of commitment, help and support that family members give to other members. Expression: The extent to which family members are able to act honestly and express their feelings
Fourth	Overall goal: to reduce students' stress, get acquainted with the environment and counseling program.	Are directly encouraged. Conflict: The degree to which there is an expression of anger, aggression, and conflict between family members. The dimension of individual growth is the subset of independence, orientation of progress, intellectual and cultural orientation, orientation of recreational activities and moral-religious emphases. Independence: The extent to which family members have the courage, self-sufficiency, and decision-making power.
Fifth and sixth	Reviewing homework, summarizing and discussing the previous session, students' awareness of the main dimensions of education, promoting and improving the student's class-emotional communication through, proper communication, family importance, normal treatment with peers, trust in parents Encouragement, acceptance of problems, the need for a sense of empathy, the need for a sense of calm, classroom management. Assignment: Practice skills related to starting to interact with peers and people around you, practice normalizing relationships with friends and classmates, practice helping peers. Overall Objective: To improve the class-emotional communication skills of dyslexic students. Theoretical framework: Improving the social behaviors of children and adolescents.	Summary of the educational topics of the previous sessions, teaching the steps of the second stage of the organization: the importance of transparent and structured organization in planning activities and family responsibilities. Control: The extent to which the rules and procedures relating to each activity are used to sustain family life. Independence: The extent to which family members have the courage, self-sufficiency, and decision-making power. General purpose: teaching punishment avoidance, importance of reward, non-physical punishment to parents with dyslexia. Responsibilities of individuals and creating peace and reducing student stress through introduction and applications and usefulness of the course, how the instructor interacts with the student. Parents introduce themselves and say why they decided to attend group sessions of educational-therapeutic reading. - Providing basic information about the symptoms of dyslexia of students - Explaining the reason for holding these sessions and the purpose of participating in group sessions of educational - treatment of dyslexia - Explaining the principles of confidentiality and reassuring clients whose information is completely confidential Task: Introduce yourself, Express your feelings about children's dyslexia
Seventh and eighth	Improving social skills with emphasis on improving anger and aggression along with reviewing homework and educational topics from the previous session. Task: Practicing behavior chaining method in order to control anger and aggression is the ability to manage emotions and not to suffer quickly. Overall Objective: To improve the social skills of dyslexic students	Summarize the training method and its purpose, teaching the steps of the first stage - cohesion or cohesion: the amount of commitment, help and support that family members give to other members. Expression: The extent to which family members are able to act honestly and express their feelings

Table 4: Descriptive indicators for dyslexia components and total score

Variable dimensions	Phase	Experimental group		Control group		P value (within groups)	P value (between groups)
		Mean	Standard deviation	Mean	Standard deviation		
Word reading test	Pre-test P	0.55	0.51	0.60	0.50	0.034	0.004
	Post-test	0.40	0.50	0.80	0.41	0.213	
Word chain test	Pre-test P	0.75	0.75	0.44	0.60	0.50	0.65
	Post-test	0.35	0.48	0.45	0.51	0.114	
Rhyme test	Pre-test P	0.70	0.47	0.60	0.50	0.001	0.005
	Post-test	0.20	0.41	0.75	0.44	0.091	
Test naming images	Pre-test P	0.55	0.51	0.45	0.51	0.070	0.264
	Post-test	0.30	0.47	0.50	0.51	0.095	
Text comprehension test	Pre-test P	0.60	0.50	0.70	0.74	0.062	0.332
	Post-test	0.45	0.51	0.55	0.51	0.134	
Word comprehension test	Pre-test P	0.75	0.75	0.44	0.75	0.44	0.008
	Post-test	0.10	0.30	0.55	0.51	0.401	
Voice removal test	Pre-test P	0.80	0.41	0.50	0.51	0.001	0.001
	Post-test	0.05	0.22	0.65	0.48	0.572	
Non-word reading test	Pre-test P	0.65	0.48	0.70	0.47	0.079	0.224
	Post-test	0.30	0.47	0.65	0.48	0.140	
Test letter signs	Pre-test P	0.30	0.47	0.65	0.50	0.315	0.268
	Post-test	0.35	0.48	0.50	0.51	0.081	
Test category signs	Pre-test P	0.45	0.51	0.60	0.50	0.088	0.153
	Post-test	0.45	0.51	0.60	0.50	0.315	
Total dyslexia test	Pre-test P	0.63	0.18	0.61	0.12	0.005	0.001
	Post-test	0.29	0.08	0.60	0.13	0.081	

package based on the needs identified in this section, the effectiveness of the intervention based on counseling needs in reducing dyslexia of students with special learning disabilities will be tested. Before that, descriptive findings will be reported. It is paid in the form of mean and standard deviation.

Table 4 provides the descriptive indicators related to the research components that allow superficial inference from the findings. However, in order to test the main hypothesis of the research, analysis of covariance was used, and the relevant issues are addressed.

The results of analysis of covariance (ANCOVA) on dyslexia components showed that among the components of dyslexia, word reading test ($P=0.004$), rhyme test ($P=0.005$), word comprehension test ($P=0.008$), and voice removal test ($P=0.001$) significantly changed in the intervention group based on counseling needs. Nevertheless, it was not significant in other components. Overall, the examination of the total dyslexia test score shows that there is a significant difference between the two groups with high statistical power ($P=0.001$). Comparison of the means in the descriptive table

also shows that the mean of the experimental group, from the pre-test to ($M=0.63$) post-test ($M=0.29$), had a significant decrease while such a decrease is not observed in the control group.

4. Discussion

The qualitative findings resulted in an educational package consisting of a three-stage assessment of educational needs of students with learning disabilities, namely the identification of counseling needs in the phases of identification, coordination, action and control. The findings showed that the intervention was significantly effective in reducing the overall score of dyslexia and some of its components. This finding is implicitly consistent with previous research (29, 30).

The number of children identified with learning disabilities is increasing every day. This number equalled 2.8 million in 2001. 80% of children with learning disabilities have dyslexia. The prevalence of this disorder varies between 5 and 17.5% of the student population and it seems to affect girls and boys equally (31). Another study showed that about 12% of students aged 6 to 10 years, especially boys; have reading disorders (32). Students with learning

disabilities who study in combination with a regular class are more likely to be rejected and isolated than their healthy peers (32). Some believed that students with learning disabilities display more aggression and report further abuse in the classroom, which leads to their rejection (23). These problems are such that they make students look less talented than they really are; they do not feel comfortable in the school environment. These children become frustrated encountering things like homework due to failure in their lessons. The child's attitude towards the issue is a factor of particular importance, and when this problem is well separated from other issues, it is necessary to provide the child with training and activities in which he is likely to succeed. Otherwise, one cannot expect much success from the child. Low self-esteem and poor self-concept can also have a negative impact on development. Among children with learning disabilities, those with lower self-esteem perform worse academically compared to those with good self-esteem (32). Morgan and colleagues reported that the rate of behavioral problems in students with reading and writing disorders is higher than that in normal students and that these students with reading and writing disorders have lower social development and self-esteem (33). Therefore, given the prevalence of students with dyslexia and the problems that naturally occur for this group of children in this study, we tried to examine the counseling needs of students and its impact on their well-being to some extent and its effect on reducing the problems of this group of children, which could be an important step.

The investigation of the research background shows that the identification of needs based on "inappropriate treatment by parents, fear and low behavior, low self-esteem" and intervention based on them shows that students with learning disabilities experience a high level of failure and depression, and also report poor self-concept, low self-efficacy (34) and low self-confidence (35). In line with the present study, interventions in this field have also demonstrated that education based on the (needs) of the individual and family has had a significant effectiveness in reducing dyslexia from various dimensions (35, 36).

Based on the findings, it can be said that education based on the counseling needs of dyslexic students makes parents more familiar with the etiology of dyslexia, as a result of which they will have appropriate behaviors towards their

children's dyslexia. Emphasis on self-efficacy and positive emotions also makes dyslexic students less likely to experience fear and negative emotions; accordingly, they are less likely to experience helplessness concerning learning. Research also showed that an increase in positive emotions is more effective in reducing the problems of dyslexic students compared to other therapies (37). This can be attributed to one of the theories of positive psychology, namely "the theory of construction and expansion of positive emotions. According to this theory, in the intervention based on counseling needs, the increase of positive emotions causes negation of negative emotions such as learned helplessness. They expand learning, as a result, the result of these processes seems to be the reduction of reading problems of students with dyslexia (38).

4.1. Limitations

The present study, like most studies, was accompanied by a number of limitations, paying attention to which in future studies would result in more generalizable results. To begin with, the present study was conducted only on the students referring to learning disability centers in Kerman city and those with dyslexia. Therefore, it is suggested that researchers study other learning disorders as well. It could be also recommended that the intervention package prepared based on the counseling needs of the students in the present study be used for the rehabilitation of dyslexia and the academic progress of learning disability centers.

5. Conclusions

Based on the quantitative and qualitative results of the research, it can be inferred that identifying counseling needs, preparing counseling packages, and providing rehabilitation interventions based on those needs can be effective in reducing students' dyslexia-related problems.

Ethical Approval

The Ethics Review Board of the university approved the present study with the code of IR.IAU.KHSH.REC.1400.003. Also, written informed consent was obtained from the participants.

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