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Effectiveness of Barkley's Parenting Skills Training Program on Social Adjustment and Academic Performance in Children with Learning Disabilities

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ABSTRACT

Objective: The objective of this research was to examine the impact of Barkley's parenting training on the social adjustment and academic achievement of children diagnosed with specific learning disabilities.

Methods: The employed research methodology was semi-experimental, encompassing a pre-test, post-test, and follow-up design that included both an experimental group and a control group. The statistical population consisted of all mothers of students exhibiting specific learning disabilities in the city of Abadeh. A sample of 30 mothers of students with special learning disorders was selected, with 15 mothers being randomly allocated to the experimental group (receiving Barkley's Parenting Skills Training Program) and 15 to the control group. The implementation of Barkley's Parenting Skills Training Program (PSTP) occurred over the course of 8 sessions, each lasting 90 minutes. The instruments for measurement comprised Bell's Adjustment Inventory and Pham and Taylor (1999) Academic Performance Scale. For data analysis, the statistical techniques employed included multivariate analysis of variance and repeated measures analysis of variance.

Results: In terms of social adjustment, the effect size was calculated at 0.12, while for academic performance, it was 0.41, reflecting the differences in scores between the experimental and control groups attributable to PSTP, with these changes in the experimental group being both stable and statistically significant.

Conclusions: The findings indicated that PSTP exerts a significant influence on the enhancement of social adjustment and academic performance in children with specific learning disorders.

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Introduction

Specific learning disabilities represent a prevalent category of learning challenges encountered by elementary school pupils, which adversely affect the psychological well-being of these children (Jaya et al., 2022). Specific learning disabilities constitute a persistent neurological and developmental disorder that typically manifests early in the developmental trajectory, prior to school attendance, and may persist into adulthood if not adequately addressed (Grigorenko et al., 2020). Children diagnosed with specific learning disabilities, including but not limited to reading, mathematical, and spelling disorders, exhibit deficiencies in fundamental reading, writing, and mathematical competencies from the initial stages of their educational journey. Reading disorders are delineated by particular impairments in the acquisition of reading skills, while mathematical disorders are characterized by distinct deficits in the development of mathematical abilities (Bulthé et al., 2019).

The presence of a specific learning disorder in a child may engender familial tensions (Conversano & Di Giuseppe, 2021). Blasco-Fontecilla et al. (2012) assert that the belief systems of individuals, predominantly shaped by the educational paradigms of their families, significantly influence adaptive capacities, yielding a dual impact: one pertaining to the enhancement of the individual's future quality of life and behavioral improvements, and the other concerning the challenges and difficulties encountered by these individuals. Consequently, the extent to which an individual engages effectively with parental figures during childhood, coupled with the experience of positive parenting, correlates with greater adaptability and the development of healthier belief systems in later life, ultimately fostering a more fulfilling existence and heightened sense of happiness (Brown & Lent, 2016). Social adaptation is conceptualized as a dynamic process whereby satisfactory relationships are established among individuals, groups, and cultural elements, facilitating mutual satisfaction within these interactions. Hence, social adaptation serves as the mechanism through which an individual acquires the ability to integrate into a group, necessitating changes within the individual and the assimilation of the processes through which the group incorporates a new member (Morimoto et al., 2020).

When each member of a family fulfills their respective responsibilities to the utmost of their abilities, children are likely to exhibit enhanced academic performance. The phenomenon of academic performance has historically captivated the attention of educational stakeholders.

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Academic performance constitutes a pivotal element within the sphere of education. Educators consistently endeavor to create environments conducive to augmenting students' academic efficacy. According to Kloos et al. (2021), academic performance can be defined as the entirety of activities and efforts an individual engages in to acquire knowledge and successfully navigate various educational grades and levels within academic institutions. In more specific terms, academic performance reflects the extent and level of an individual's success in final examinations, rated on a scale ranging from zero to twenty. In instances where parent-child relationships are fractured and the familial atmosphere is chaotic, psychological parenting interventions become imperative (Rezaei Gazki et al., 2019). Among the therapeutic modalities grounded in parent-child dynamics is the Barkley Parenting Education Method (Barkley, 1997). The child behavior management program articulated by Barkley is predicated on addressing the behavioral inhibition deficits exhibited by these children.

Accordingly, Barkley posited a therapeutic intervention that specifically targets the primary challenges faced by children diagnosed with specific learning disorders. The Barkley Parenting Program represents an innovative and universally applicable initiative designed to foster a constructive relationship between parents and their offspring. Barkley (1997) contends that parental education will enhance caregivers' comprehension of the disorder's nature, bolster their self-efficacy in their parenting roles, and assist them in managing and mitigating inappropriate behaviors, thereby facilitating a more successful child-rearing experience. This program functions as a comprehensive framework that promotes positive interactions between parents and children while equipping parents with effective management techniques to address a spectrum of developmental and behavioral concerns associated with their child's condition. In essence, this program encompasses the establishment of a secure environment, the reinforcement of positive behaviors, the cultivation of a conducive learning atmosphere, the maintenance of realistic expectations, and the importance of self-care (Kadkhodaie et al., 2017).

Through an examination of both domestic and international databases, research pertaining to the efficacy of parenting training was identified, notably the study conducted by Mohaghegh (2023), which indicated that participation in Barkley's parenting group training significantly enhanced the psychosocial well-being and academic performance of second-grade elementary students with specific learning disabilities. Maleki (2023) demonstrated in their study that positive parenting

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group training exerted a notable influence on procrastination tendencies, motivational levels, and academic self-efficacy among male first-grade high school students. Helander et al. (2024) presented findings in their study that, from a review of 145 investigations assessing the effectiveness of parent management training on variables related to children's positive mood, academic motivation, psychological well-being, resilience, and the reduction of maladaptive behaviors, significant confirmations were obtained. Leijten et al. (2019) conducted a meta-analytic study that revealed a consistent significant effect of parenting training programs on the reduction of children's maladaptive behaviors, enhancement of individual-social adjustment, and the promotion of increased resilience, psychological well-being, and responsible behaviors. Judd et al. (2013) indicated in their study a positive and significant relationship between the democratic parenting style of parents and a secure attachment style, which correlated with emotional regulation and adjustment, whereas a negative correlation was observed between the authoritarian parenting style of parents and an insecure attachment style, leading to difficulties in emotional control and adjustment among single men and women.

Altering the patterns of interaction between parents and children is paramount in mitigating potential issues, enhancing parental methodologies, and improving the academic outcomes of children diagnosed with specific learning disabilities. Furthermore, by modifying the maternal disposition towards parenting, as she represents the pivotal figure in the child's developmental journey, the detrimental cycle associated with parenting practices can be ameliorated. Broadly speaking, an alteration in parental attitudes towards the act of parenting can address the challenges faced by children. Moreover, exploring the lived experiences of parents whose children have specific learning disabilities, particularly concerning their attributes, behaviors, interactions, and responses within familial and educational contexts, facilitates the identification of risk factors as well as potential protective influences. Consequently, through the implementation of these findings, certain adverse effects associated with this condition can be averted, thereby allowing both parents and students to concentrate their efforts on addressing challenges and fostering personal growth. In light of the aforementioned considerations and a comprehensive review of the existing literature, the current investigation aims to evaluate the following two hypotheses:

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1 -Barkley parenting training exerts a significant influence on the social adjustment of children who have specific learning disabilities.

2- Berkeley parenting training affects the academic performance of children diagnosed with specific learning disabilities.

Material and Methods

The methodology employed in the current investigation was characterized as semi-experimental, incorporating a pre-test, post-test, and follow-up design, which entailed the inclusion of both an experimental group and a control group. The statistical population encompassed all maternal figures of students diagnosed with specific learning disabilities who sought assistance at the Abadeh City Center for Learning Disorders Education and Training regarding their child's challenges. Amongst the mothers of students with specific learning disabilities who satisfied the inclusion criteria (complete consent to engage in therapeutic sessions, possession of at least a high school diploma, absence of any psychological treatment interventions in the preceding six months, having a child with a specific learning disability, and commitment to completing assigned homework), a sample size of 30 participants was extracted and randomly allocated, with 15 individuals assigned to the experimental group (receiving Barclay parenting training) and 15 to the control group. The exclusion criteria delineated for the study encompassed absenteeism from two therapeutic sessions, withdrawal from ongoing sessions due to exceptional circumstances such as illness or bereavement, and non-compliance with homework assignments. Data analysis was executed utilizing the SPSS-26 statistical software package. For the acquisition of requisite data, Bell Adjustment Inventory (1961) and Pham and Taylor's Academic Performance Questionnaire (1999) were employed.

Bell Adjustment Inventory: The instrument in question was devised by Bell (1961). This questionnaire comprises 32 items, with each item being rated according to a dichotomous scale (where 'yes' is assigned a score of 0 and 'no' a score of 1). The questionnaire is structured as a self-report measure, wherein a higher score signifies diminished social adaptability of the individual. The scoring range extends from a minimum of 0 to a maximum of 32. Bell (1961) established concurrent validity in relation to the Zuruk (1995) questionnaire, with the reported reliability coefficients of the instrument being 0.50 and 0.89, respectively. In the current investigation, the

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reliability of the questionnaire was assessed using Cronbach's alpha coefficient, yielding a value of 0.88.

Academic Performance Questionnaire: This particular questionnaire was developed by Pham and Taylor (1999) and is comprised of 48 items, which assess five components: self-efficacy, emotional effects, planning, outcome control, and motivation. Responses to the questionnaire are rated on a five-point Likert scale, with reverse scoring applied to items 23, 8, 26, and 33. A higher score on this instrument indicates superior academic performance. The questionnaire has been developed and validated within the context of Iranian society, building upon the foundational research conducted by Pham and Taylor (1999), further refined by Dortaj (2004). Pham and Taylor (1999) affirmed the validity of the questionnaire and reported a reliability coefficient of 0.84. In the present study, the reliability of the questionnaire was determined to be 0.86, as measured by Cronbach's alpha coefficient.

The Barkley Parenting Skills Training Program was administered to the experimental cohort, whereas the control cohort did not undergo any form of training. The execution of Barkley's Parenting Skills Training Program (PSTP) transpired over a series of 8 sessions, each with a duration of 90 minutes (table 1).

Table 1. Description of Barkley's Parenting Skills Training Program (PSTP) Sessions

Session	Aim	Content
1	Introducing parents to the Barkley Education Model - Introducing parenting programs	Introduction to the group members, brief description of parenting programs and the purpose of its use, explanation of the basic rules, brief description of the power struggle between parents and children, the destructive effects of the power struggle on the entire family, general goals of the parent education program including the child's responsiveness to parental authority, correct and firm behavior, and positive educational and social interaction
2	Introducing parents to factors affecting child behavior and parenting programs	Review of the previous session, explanation of the three stages of the child and the specific characteristics of each period, maturation and developmental changes in the child, and the effects of dopamine on the brain
3	Strengthening positive interactions between parents and children and providing necessary communication strategies	Review of the previous session, providing feedback, familiarization with the four types of human temperament, various parenting styles and their characteristics, examination of the main factors of the child's parental power struggle including reactivity, personalization, and negative emotional tone
4	Teaching parents' skills to control undesirable behaviors	Strengthening positive interactions between parents and children and providing the necessary solutions to strengthen positive relationships with the child, how to create the right attitude towards the child, creating a positive and correct attitude about oneself and understanding the child's original temperament and supporting him in both failures and successes, having the right perspective about oneself
5	What needs to change during the intervention	The power of earned points and defining the word "points" as meaning anything beyond love and biological foundations, explanation of the distinction Between the unpleasant consequences of behavior and the deprivation of a privilege, so that the consequence of a behavior is a punishment for the child's misdeed and children consider themselves victims, while the word privilege evokes the child's

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		responsibility for earning it. Parents' problems in carrying out instructions and how to communicate with the child are examined. To this end, it is necessary to: 1- Arrange a session to talk with the child in which there are no distractions, 2- Review the problem and communication issues, 3- Recognize your contribution as a parent to this problem and avoid blaming others, 4- Prepare a list of the adolescent's strengths, 5- Prepare a list of privileges that the child enjoys, 6- Determine that the child has previously earned privileges for being responsible and having satisfactory behavior and now does not enjoy them due to lack of responsibility, 7- Apologize for not setting high standards for the child, 8- List the behaviors that need to change, 9- Inform the child of the privileges that may be lost
6	Reviewing parent-adolescent interactions	Planning for the implementation of unfinished training and assignments, explaining the acquisition of happiness skills as a tool for controlling power struggles, developing happiness skills through self-awareness and self-acceptance, enthusiasm and goals, emotion regulation skills, responsibility management, communication skills, optimistic attitude
7	Overviewing issues and topics raised in previous sessions	A definition of a child with a learning disability, obstacles and consequences of inaction were explained. Review of past sessions, review of obstacles to maintaining changes, strategies for maintaining changes and final summarization of training, review of assignments completed by parents and providing feedback
8	Factors that prevent changes from being maintained and reforms from being made.	Introduction to the group members, brief description of parenting programs and the purpose of its use, explanation of the basic rules, brief description of the power struggle between parents and children, the destructive effects of the power struggle on the entire family, general goals of the parent education program including the child's responsiveness to parental authority, correct and firm behavior, and positive educational and social interaction

In adherence to ethical protocols during the current investigation, participants were informed that they were engaged in a psychological study. They were reassured regarding the confidentiality of their personal information and that the results would be analyzed collectively, with the provision that they could withdraw from participation at any given time.

Results

The findings in the descriptive section showed that the highest frequency of mothers in the experimental group (Barkley’s Parenting Skills Training Program) (65 percent), and the control group (65 percent) were mothers aged 35 to 40 years. Also, the highest frequency of mothers in the experimental group (60 percent), and the control group (65 percent) were mothers with a diploma level of education. Table 2 presents the descriptive findings of the research variables.

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Table 2. Mean and standard deviation of total scores of pre-test, post-test and follow-up of the total score of social adjustment and academic performance by experimental group and control group

Variable	Group	Pretest		Posttest		Follow up	
		Mean	SD	Mean	SD	Mean	SD
Social adjustment	Experimental	18.06	4.78	15	5.30	14.40	6.62
	Control	18.53	4.95	18.33	5.74	18.13	6.37
Academic performance	Experimental	123.80	18.46	145.13	14.43	147.66	17.43
	Control	125.13	19.02	126.80	21.70	126.33	24.35

The assumption of normality of the data was examined by the Shapiro-Wilk test (for the assumption of normal distribution of the statistical sample). Given that the Shapiro-Wilk test statistic was not significant in the scores of academic performance and social adjustment, the assumption of normal distribution of the statistical sample can be accepted.

The research hypothesis: Barkley's Parenting Skills Training Program has an effect on the social adjustment and academic performance of children with specific learning disabilities.

The results of the M-box test and Levine test to examine the assumptions of covariance matrix homogeneity and variance homogeneity showed that these assumptions were confirmed and parametric statistical tests can be used. Also, in order to examine the sphericity assumption, the Mauchly's sphericity test was used, and the Mauchly statistic was significant and these results indicated that this assumption was not met. As a result, the Greenhouse-Geisser test was used to correct the degrees of freedom in the analysis of variance with repeated measures.

Table 3. Results of multivariate analysis of variance for the effects of within group interaction (Wilks' lambda)

Variable	Factor	Value	F	DF error	P	Effect size
Social adjustment	Time	0.73	4.81	27	0.01	0.26
	Group * Time	0.80	3.27	27	0.05	0.19
Academic performance	Time	0.40	19.53	27	0.001	0.56
	Group * Time	0.48	14.16	27	0.001	0.51

The results of Table 3, F observed a linear combination between the dependent variables (social adjustment and academic performance) and the independent variable in the main effect of time and the interaction of group and time were significant, indicating a significant effect of the Barkley parenting training method on the dependent variables and also a significant difference between the pre-test and post-test and follow-up between the experimental and control groups.

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Table 4. Results of repeated measures analysis of variance, the effectiveness of Barkley parenting training on the social adjustment and academic performance of children with specific learning disabilities

Variable	Source	SS	DF	MS	MS	P	Effect size
Social adjustment	Time	69.62	1.95	35.68	5.75	0.006	0.17
	Group * Time	47.62	1.95	24.40	3.93	0.02	0.12
Academic performance	Time	288.02	1.32	217.22	24.62	0.001	0.46
	Group * Time	272.10	1.32	172.51	19.51	0.001	0.41

The results of Table 4, in the social adjustment and academic performance variables, the main effect of time and the interaction effect of time and group are statistically significant. The significance of the time effect means that there is a significant difference in the social adjustment and academic performance in the three stages of pre-test, post-test and follow-up. Also, the significance of the group and time effect means a significant effect of the Berkeley parenting training method on the aforementioned variables and a significant difference between the two experimental and control groups. The main effect size of the interaction between group and time means that in the social adjustment variable, 0.12 of the difference in scores between the experimental and control groups and in the academic performance, 0.41 of the difference in scores between the experimental and control groups were due to Berkeley parenting training, and these changes in the experimental group were stable and significant. Therefore, it can be said that Berkeley parenting training had a significant and stable effect on increasing social adjustment and academic performance. The results of Table 5 show the difference between the three stages of the test implementation regarding the effectiveness of Berkeley parenting training on the dependent variables.

Table 5. Results of the LSD post hoc test comparing the average effectiveness of the three stages of the test implementation regarding the effect of Berkeley parenting training on social adjustment and academic performance

Variable	Comparison	Mean differences	P
Social adjustment	Pretest-posttest	1.63	0.01
	Posttest-follow up	2.03	0.005
Academic performance	Pretest-posttest	-11.46	0.001
	Posttest-follow up	-12.50	0.001

According to the results, the LSD post hoc test revealed that the pre-test scores of social adjustment and academic performance were significantly different than the average post-test and follow-up scores.

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Discussion

The results of the investigation regarding the efficacy of Berkeley Parenting Training on both social adjustment and academic performance in children with specific learning disabilities indicated that the primary effect of time and the interaction effect between time and group are statistically significant within the social adjustment parameters. The statistical significance of the time effect suggests the existence of a notable variance in the social adjustment parameters across the three phases of pre-test, post-test, and follow-up. Furthermore, the statistical significance of the group and time effects denotes the substantial impact of the Berkeley Parenting Training methodology on the aforementioned parameters, as well as a significant distinction between the experimental and control groups. In addition, the findings pertaining to the academic performance revealed that both the primary effect of time and the interaction effect between time and group are statistically significant. The prominence of the time effect implies a considerable difference across the three phases of pre-test, post-test, and follow-up with respect to the academic performance. Moreover, the significance of the group and time effects indicates a noteworthy influence of the Berkeley Parenting Education Package on the aforementioned variable and a significant difference between the two experimental and control groups.

The outcomes of the current study are congruent with the findings presented in the research conducted by Maleki (2023), Kadkhodaie et al. (2017), Helander et al. (2024), Leijten et al. (2019) and Judd et al. (2013).

In elucidating the results of the study, one can assert that parental education based on the Berkeley Parenting Education Model has effectively mitigated anxious cognitions, biases, and erroneous judgments, along with negative thoughts and feelings parents harbor towards their children, while concurrently enhancing their awareness of emotional and cognitive occurrences that adversely affect their relationships with their children. This educational progression concerning the nature of the child's issues and strategies for effectively addressing children's negative emotions has prompted parents to exert greater effort in embracing and feeling accountable for their children; moreover, by bolstering the child's positive behaviors within the home environment, it has facilitated the development of avenues for self-expression and accountability among parents. Consequently, parental education is capable of fostering early identification of problem indicators among parents, and the application of these competencies is highly likely to exert a direct influence

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on the prevention of children's issues, while a rational and appropriate approach to child behavior will establish foundations for psychological well-being, psychological resilience, social adaptation, and enhanced academic performance in children with specific learning disabilities.

In another elucidation, it is posited that parenting training predicated on the Berkeley model engenders a transformation in parental cognition regarding adverse events, thereby facilitating an acceptance of life's realities, which in turn stabilizes emotional responses and engenders resilience and adaptability among parents. Indeed, Berkeley parenting training moderates emotional responses without recourse to judgment and enhances parental awareness concerning their own and their children's mental and physical states, enabling a clear perception and acceptance of emotions and other internal experiences as they transpire, while concurrently fostering a non-judgmental acceptance in children of themselves and their behaviors; this heightened awareness of their actions and emotions cultivates greater flexibility towards their parents, augments joy derived from positive familial relationships, and, bolstered by the self-awareness imparted by their parents, correlates with improved academic performance.

In this context, Lengua et al. (2021) assert that parenting training grounded in the Berkeley model fosters advantageous verbal and non-verbal communication dynamics between parents and children, resulting in an enhanced sense of familial satisfaction, which directly contributes to the emotional milieu of the family, thereby promoting mental health and psychological well-being for all family members, particularly the children. Furthermore, Berkeley parenting training has demonstrably elevated self-efficacy levels in parents and optimized the conditions conducive to positive and adaptive behaviors in children, thereby engendering heightened adaptability and resilience among family constituents.

Based on the findings, it is advocated that workshops focusing on parenting training be organized for mothers to enhance their competencies in identifying and diagnosing cognitive distortions in parenting practices. Additionally, it is recommended that counselors employ the methodologies of "cognitive and metacognitive skills" to bolster students' academic performance, alongside the application of "listening skills" to enrich the relational dynamics between parents and their referred children.

In the execution of the research, the absence of paternal cooperation in participating in educational sessions necessitated the limitation of the educational interventions solely to mothers. Moreover,

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this investigation encountered confounding variables such as socioeconomic and cultural factors that the researcher was unable to regulate.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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