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A Comparative Study of Lifestyle and Cognitive-Emotional Regulation in Mothers of Children with Learning Disabilities and Mothers of Typically Developing Children

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ABSTRACT

This study sought to conduct a comparative analysis of lifestyle patterns and cognitive-emotional regulation strategies among mothers of children with learning disabilities and mothers of typically developing children. Employing a comparative research design, the statistical population comprised all mothers of school-aged students in Rasht, as well as mothers whose children were referred to four specialized learning disability centers in the same city during the 2017–2018 academic year. A total of 166 participants were selected through convenience sampling, including 83 mothers of children with learning disabilities and 83 mothers of typically developing children. Data collection instruments included Lalley's Lifestyle Questionnaire and Garnefski's Cognitive-Emotional Regulation Questionnaire, both of which assess key dimensions of psychosocial functioning. The collected data were analyzed using multivariate analysis of variance (MANOVA) to determine group differences. The results revealed statistically significant differences between the two groups in both lifestyle ($p = 0.001$) and cognitive-emotional regulation ($p = 0.05$). These findings suggest that the presence of a child with learning disabilities substantially influences maternal lifestyle choices and emotional regulation strategies, highlighting the need for targeted support programs and interventions for this population.

1. INTRODUCTION

Learning can be boldly considered the fundamental process through which an individual, despite innate abilities, transforms into a capable and competent being over time, impacting cognitive abilities and thought processes without recognizing limits [1]. Despite possessing natural intelligence, a group of students struggle with reading, writing, and age-appropriate calculations. This group is referred to as individuals with learning disabilities, defined by the Learning Disabilities Association as impairment in one or more psychological processes necessary for understanding, using, or producing language in spoken or written form, indicating difficulties in listening, thinking,

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reading, spelling, writing, or mathematical calculations [2]. Specific learning disability is a neurodevelopmental disorder with a biological origin, primarily affecting cognitive levels and accompanied by behavioral symptoms. Learning problems manifest through reading difficulties, comprehension issues, spelling challenges, writing difficulties, difficulty in performing mathematical calculations, and problems with mathematical comprehension. These challenges typically begin during the school years and must not be attributed to intellectual disability, visual or hearing impairments, or other mental or neurological disorders [2]. The prevalence of specific learning disabilities among school-age children ranges from 5 to 15%, with an uncertain prevalence in adults, estimated to be around 4% [3]. In Iran, the prevalence of learning disabilities is reported to be 83.3%, with respective rates of 42.3%, 73.3%, 67.3%, and 53.4% for students in the second, third, fourth, and fifth grades [4].

One of the variables crucial in understanding the challenges faced by mothers of these children is their lifestyle. Lifestyle can be considered as a specific way of life defined by meaningful behaviors and patterns that individuals exhibit, influenced by culture, race, religion, economic and social status, and beliefs [6]. In families with children with special needs, mothers often bear greater responsibility for the physical care, treatment, and education of their children. Consequently, due to closer involvement with their children's issues and problems, they experience increased psychological pressure, potentially affecting their mental health in various dimensions, including sleep, psychological issues, and anxiety [8].

Among the factors affecting the lives of mothers of exceptional children is emotional management and regulation [11]. Emotional regulation encompasses a broad range of internal and external processes used to review, assess, and modify emotional reactions. It plays a fundamental role in initiating, evaluating, and organizing adaptive behaviors, as well as preventing negative emotions and maladaptive behaviors [12]. Emotional dysregulation can lead to maladaptive behavior, aggression, anger, hatred, and anxiety, posing a serious threat to individuals when left unchecked [12]. Studies indicate higher levels of stress and feelings of loneliness in parents of children with learning disabilities compared to parents of typically developing children [9]. Additionally, parents of children with learning difficulties often experience constraints, such as health issues, feelings of deprivation, and higher levels of anxiety, stress, and depression, compared to parents of typically developing children [10].

This research, building on previous studies and recognizing the need to address the mental health of mothers of children with learning disabilities, aims to answer the question of whether there is a difference in lifestyle and cognitive-emotional regulation between mothers of these children and mothers of typically developing children.

2. METHODOLOGY

2.1. Research Design

The present study is designed as a cross-sectional and comprehensive survey, encompassing all mothers of students with learning disabilities in the city of Rasht during the years 2017-2018. Participants were selected from those registered in the learning disabilities centers of the education department. From this population, 83 individuals were selected using the accessible sampling method. After identifying the cognitive characteristics of the population, another 83 mothers of typically developing students from Rasht city were selected through accessible sampling. The two groups were then matched based on age, education, and occupation and subjected to the examination.

2.2. Lifestyle Questionnaire (LSQ)

The Lifestyle Questionnaire (LSQ), developed by Lali, Abedi, and Kajbaf (1391), consists of 70 Likert-scale questions, scored as always (3), usually (2), sometimes (1), and never (0). The questionnaire comprises 10 components, including physical health, exercise and fitness, weight control and nutrition, disease prevention, mental health, spiritual health, social health, avoidance of drugs and alcohol, prevention of accidents, and environmental health. Higher scores in each component and the overall questionnaire indicate a more suitable lifestyle. The LSQ has been validated for assessing and measuring lifestyle using factor analysis, and its reliability, assessed through Cronbach's alpha, was reported as 0.87[15].

2.3. Cognitive-Emotional Regulation Questionnaire (CERQ-P)

The Cognitive-Emotional Regulation Questionnaire (CERQ-P) consists of 36 questions and was developed by Garnefski, Kraaij, and Spinhoven (2001) to evaluate cognitive strategies individuals employ after experiencing

threatening or stressful life events. The questionnaire includes nine subscales, each assessing a specific cognitive strategy. The responses are scored on a Likert scale from 1 to 5 (1 = never, 2 = sometimes, 3 = regularly, 4 = often, 5 = always). The nine subscales are self-blame, blaming others, acceptance, refocusing on planning, positive refocusing on pleasant issues, catastrophizing, positive reappraisal, putting into perspective, and catastrophizing. In a study conducted by Garnefski et al. (2001), the reliability of the CERQ was reported with Cronbach's alpha coefficients of 0.91, 0.87, and 0.93 for the three subscales, respectively [16]. In the Iranian context, the reliability of the questionnaire was assessed by Hasani (1390), and the Cronbach's alpha coefficient for the overall cognitive scale was reported as 0.82[17].

2.4. Data Collection

Data were collected by obtaining permission from the education department

3. RESULTS

The mean (standard deviation) age of mothers of children with learning disabilities was 36.09 (4.47) years, with a minimum and maximum age of 26 and 48 years, respectively. The mean (standard deviation) age of mothers of typically developing children was 36.16 (6.07) years, with a minimum and maximum age of 24 and 49 years, respectively. In terms of education, among the mothers of typically developing children, 14 had education below diploma, 37 had a diploma, 31 had a higher diploma or bachelor's degree, and 1 had a master's degree or higher. Similarly, among the mothers of children with learning disabilities, 17 had education below diploma, 34 had a diploma, 31 had a higher diploma or bachelor's degree, and 1 had a master's degree or higher. The frequency of participants based on occupation was as follows: among the mothers of typically developing children, 26 were employed, and 57 were housewives; among the mothers of children with learning disabilities, 24 were employed, and 59 were housewives.

Table 1. Mean and Standard Deviation of Lifestyle and Cognitive-Emotional Regulation Components in the Two Groups

Variable	Mothers of Children with Learning Disabilities		Mothers of Typically Developing Children	
	Mean	SD	Mean	SD
Physical Health	12.83	3.40	15.20	3.38
Exercise and Fitness	8.15	4.76	9.96	4.05
Weight Control and Nutrition	11.53	3.99	14.56	3.61
Disease Prevention	16.12	2.92	17.53	2.67
Psychological Health	13.85	4.15	15.89	3.57
Spiritual Health	13.27	3.62	14.61	2.81
Social Health	15.92	3.84	12.56	5.38
Avoidance of Drugs and Substances	12.56	5.38	15.50	2.17
Accident Prevention	20.03	3.10	19.72	3.59
Environmental Health	15.75	3.05	16.25	3.21
Self-Blame	10.56	3.30	9.85	2.56
Acceptance	13.09	2.97	11.85	2.75
Rumination	14.67	3.53	13.06	3.35
Positive Refocusing	14.74	3.74	14.54	3.76
Refocus on Planning	15.38	3.69	15.37	3.31
Positive Reappraisal	14.67	3.71	14.63	3.42

Perspective-Taking	13.83	3.17	13.06	2.94
Catastrophizing	11.56	3.91	9.79	3.91
Blaming Others	10.00	3.44	8.43	3.17
Total Lifestyle Score	140.18	25.96	155.26	22.84
Total Cognitive-Emotional Regulation Score	118.71	19.77	109.81	15.28

To examine the equality of covariance matrices for dependent variables between groups, the Box's M test was utilized. Additionally, to assess the assumption of homogeneity of variances across groups, Levene's test was employed. The results of the Box's M test for the research variables were $\chi^2 = 477.69$, with an F value of 1.79, degrees of freedom for group 1 (df1) equal to 231, and degrees of freedom for group 2 (df2) equal to 0.89, at a significance level of 0.001. These results confirmed the lack of significance, indicating that the covariance matrices across groups were not significantly different. Moreover, Levene's assumption for the components of physical health (p = 0.05), exercise and fitness (p = 1.01), weight control and nutrition (p = 0.62), disease prevention (p = 0.02), psychological well-being (p = 0.37), social health (p = 0.08), accident prevention (p = 1.11), environmental health (p = 0.27), self-blame (p = 2.54), acceptance (p = 0.02), rumination (p = 0.99), positive refocusing (p = 0.11), planning (p = 1.42), positive reappraisal (p = 0.02), perspective-taking (p = 0.2), catastrophizing (p = 0.001), and blaming others (p = 0.59) were obtained, supporting the reliability of the research findings. However, this was not the case for the two components of spiritual health and avoidance of drugs and alcohol.

Table 2. Results of the Significance Test for Lifestyle and Cognitive-Emotional Regulation Components in Two Groups

Test Name	Value	F	Hypothesis df	Error df	Significance Level (p)	Effect Size
Pillai's Trace	0.339	3.521	21	144	0.001	0.339
Wilks' Lambda	0.661	3.521	21	144	0.001	0.339
Hotelling's Trace	0.513	3.521	21	144	0.001	0.339
Roy's Largest Root	0.513	3.521	21	144	0.001	0.339

Considering the outcomes in Table 2, the multivariate analysis of variance revealed a significant difference between the two groups of mothers with children having learning disorders and mothers with typically developing children in the components of lifestyle and cognitive-emotional regulation ($F = 521.3$, $p < 0.001$). Consequently, it can be inferred that a meaningful difference exists between the two groups concerning lifestyle and cognitive-emotional regulation components.

Table 3. Results of Multivariate Analysis of Variance (ANOVA) for the Mean Scores of Lifestyles and Cognitive-Emotional Regulation Components in the Two Groups

Component	SS	df	MS	F	p	Effect Size	Statistical Power
Physical Health	233.78	1	233.78	20.25	0.001	0.11	0.99
Exercise & Fitness	135.54	1	135.54	6.93	0.009	0.04	0.74
Weight Control & Nutrition	382.55	1	382.55	26.37	0.001	0.14	0.99

Disease Prevention	82.46	1	82.46	10.50	0.001	0.06	0.89
Psychological Health	172.05	1	172.05	11.48	0.001	0.07	0.92
Spiritual Health	74.22	1	74.22	7.04	0.009	0.04	0.75
Social Health	4.72	1	4.72	0.35	0.55	0.002	0.09
Avoidance of Drugs & Substances	358.65	1	358.65	21.24	0.001	0.11	0.99
Accident Prevention	4.07	1	4.07	0.36	0.54	0.002	0.09
Environmental Health	10.12	1	10.12	1.03	0.31	0.006	0.17
Self-Blame	20.97	1	20.97	2.40	0.12	0.01	0.34
Acceptance	63.91	1	63.91	7.78	0.01	0.04	0.79
Rumination	108.17	1	108.17	9.10	0.01	0.05	0.85
Positive Refocusing	1.74	1	1.74	0.12	0.72	0.001	0.06
Refocus on Planning	0.006	1	0.006	0.001	0.98	0.001	0.05
Positive Reappraisal	0.054	1	0.054	0.004	0.95	0.001	0.05
Perspective Taking	24.67	1	24.67	2.63	0.11	0.01	0.36
Catastrophizing	130.17	1	130.17	8.49	0.01	0.049	0.82
Blaming Others	101.81	1	101.81	9.29	0.01	0.054	0.86
Total Lifestyle Score	9442.79	1	9442.79	15.79	0.001	0.088	0.90
Total Cognitive Regulation Score	3280.98	1	3280.98	10.50	0.001	0.060	0.89

Table 3 displays the outcomes of the multivariate analysis of variance regarding the mean scores of lifestyles and cognitive-emotional regulation components in mothers of children with learning disorders and mothers of typically developing children. According to the results presented in the table, mothers of typically developing children achieved higher scores in the total lifestyle score, cognitive-emotional regulation, and the components of physical health, exercise and fitness, weight control and nutrition, disease prevention, mental health, spiritual health, avoidance of drugs and substances, acceptance, rumination, self-blame, positive refocusing, planning, positive reappraisal, and other-blame, compared to mothers of children with learning disorders. However, no significant differences were observed between the two groups in the remaining components.

4. DISCUSSION AND CONCLUSION

The present study aimed to investigate the comparative lifestyle and cognitive-emotional regulation of emotions in mothers of children with learning disorders and mothers of typically developing children. The results of the current research demonstrated significant differences between mothers of children with disorders and mothers of typical children. Mothers of children with learning disorders obtained lower scores in the components of physical health, exercise and fitness, weight control and nutrition, disease prevention, mental health, spiritual health, and avoidance of drugs and substances compared to mothers of typically developing children. These findings align with previous studies indicating negative attitudes towards self, the world, and the future in mothers of children with learning disorders, leading to decreased mental health.

Furthermore, the study showed that mothers of children with learning disorders scored higher in the components of acceptance, rumination, self-blame, positive refocusing, planning, positive reappraisal, and other-blame. These results are consistent with research suggesting reduced emotional regulation in mothers of children with learning disorders, as well as higher levels of unrealistic expectations, anxiety, and depression. This emotional burden may contribute to psychological distress and decreased self-esteem in these mothers.

The limitations of the current study include the sample selection solely from government centers, potentially limiting the generalizability of the findings to the broader community. Future research is recommended to include all child care centers for children with learning disorders and to conduct workshops for mothers of children with disorders to increase their awareness of the signs and symptoms of these disorders, providing them with suitable conditions for their own and their children's well-being.

Transparency Statement

The data supporting this study are available upon reasonable request to the corresponding author, subject to ethical and confidentiality considerations.

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Declaration of Interest

The authors declare that they have no competing interests.

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