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Comparing Behavioral and Mental Problems in Children Born through Natural Birth and Cesarean Section

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A B S T R A C T

This study aimed to compare the behavioral and psychological problems in children born by natural birth and cesarean section in Iran. The sample size of this research was 1133 individuals (642 cesarean and 491 natural birth), who were selected through convenience sampling method. The data collection tool for behavioral problems was the Rutter questionnaire, collected through direct interviews with the parents. The results indicated that the type of birth (natural or cesarean) has an effect on children's behavioral and psychological problems. The p-value for each of the problems such as social maladjustment, antisocial behaviors, inattention, aggression and hyperactivity, depression, and anxiety was less than 0.05, showing a significant difference in observed behavioral and psychological problems.

Keywords: Behavioral And Mental Problems, Social Maladjustment, Antisocial Behaviors, Inattention, Aggressiveness and Hyperactivity, Depression and Anxiety, Cesarean Section, Natural Birth.

INTRODUCTION

In today's world, parents face countless challenges and difficulties in raising their children (DiMatteo et al., 1996; Francis, 2015; González-García et al., 2017). The technological advancements that have increased access to information and the power derived from it have made traditional parenting, which is based on controlling information and the power derived from it, difficult to manage (Casas et al., 2001; Harrison, Richman, & Vittimberga, 2000; Osorio-Saez, Eryilmaz, & Sandoval-Hernandez, 2021). The transition from tradition to modernity has led children and adolescents to be exposed to various psychological damages, as the latest research indicates that

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20% of Iranian children and adolescents suffer from some form of mental and behavioral disorders ([Mohammadi et al., 2016](#); [Sharifi et al., 2016](#)). The mismatch of parents with new conditions has created feelings of inadequacy in both parents and children ([Fawcett, Baggaley, Wu, Whyte, & Martinson, 2005](#); [Syrstad & Ness, 2021](#)).

Any type of disorder in emotional, educational, and social functioning pushes an individual towards mental disorders ([Keyes, 2005](#); [Rogers & Pilgrim, 2021](#)). Every society needs individuals who are psychologically healthy for progress and growth in various social, economic dimensions, etc. Since children today are the future pillars of society, their physical and mental health will significantly impact the health and diseases of future societies and generations ([Biddle & Asare, 2011](#); [Dagleish, Black, Johnston, & Bevan, 2020](#)). Therefore, it is necessary to pay more attention to the mental and physical health of this large population and take fundamental steps towards prevention and treatment of their diseases and mental and behavioral disorders. Many children and adolescents experience various behavioral problems and abnormalities during their growth, which, if addressed promptly, can improve more quickly and easily ([Huang, Calzada, Cheng, & Brotman, 2012](#); [Israel, Malatras, & Wicks-Nelson, 2020](#); [Vukojević et al., 2017](#)).

Some of these issues are transient and episodic, gradually reducing and disappearing with some follow-up. However, some others are concerning and can pave the way for more serious diseases and disorders in the future. Disorders such as obsession, autism, depression, nail biting, bedwetting, psychological stress and tension, if overlooked by the child's parents and relatives, can not only hinder the child's healthy and natural growth process but also create issues and challenges for them that may require long-term and specialized treatments ([Cornacchio, Sanchez, Chou, & Comer, 2017](#); [Kendall, 2011](#)). Considering the importance and necessity of diagnosis and early intervention in these disorders and behavioral abnormalities, it is recommended that parents and family members strive to improve and provide timely treatment for these issues by increasing their awareness and knowledge about such problems in children and adolescents ([Halder & Mahato, 2019](#)).

This research also strives to examine the most common disorders and behavioral problems in children and adolescents and provide parents and educators with the necessary diagnostic and treatment methods to facilitate essential prevention measures. It is natural that most children pass their childhood into adulthood safely without experiencing any particular disturbances or abnormalities, but the value and importance parents place on the mental health and well-being of their children lead to the creation of the necessary conditions and facilities for their growth and development.

Many first-time pregnant mothers opt for a cesarean section due to fear of childbirth pain without realizing that they must endure significant pain after the operation ([Gholami & Salarilak, 2013](#); [Puia, 2018](#)). Additionally, each cesarean surgery leads to internal adhesions that ultimately result in chronic and prolonged pain in the following years, for which there is no definitive treatment ([Sahlin, Carlander-Klint, Hildingsson, & Wiklund, 2013](#)).

Over time and with the advancement of medical science, different ways have been developed to help with issues that used to cost mothers' lives in the past. In fact, today, a mother's cesarean section can result in the least damage and, if necessary, the possibility of subsequent childbirth exists. However, contrary to popular belief, this method is not the best way to give birth to children, and natural childbirth with fewer complications is the superior method ([Nagy & Papp, 2021](#); [Sys et al., 2021](#)). According to studies, in cesarean deliveries, the likelihood of complications is twice as high as in natural childbirth, and the most important complications that occur include uterine and surgical site infections, reopening of the surgical site, bleeding ([Gee, Dempsey, & Myers, 2020](#); [Grabarz et al., 2021](#)), blood clots in the veins ([Larsson et al., 2022](#)), and ultimately death. On the other hand, after natural childbirth, there is less pain and infection,

leading to the mother returning to normal faster; therefore, the mother can start moving and exercising sooner and regain her pre-pregnancy weight more quickly. Some individuals, considering the increased risk of uterine and bladder prolapse after natural childbirth, opt for cesarean sections; however, for prolapse to occur, the method of childbirth is not the sole determining factor, as the number of pregnancies and the weight of the fetus at birth are more important. Furthermore, those who undergo cesarean sections may also experience prolapse and weakening of vaginal tissues. In some cases, even individuals who have never been pregnant can develop this condition because genetics play a significant role in this matter ([Chen & Tan, 2019](#); [Sharifzad, Khodakaram, Jannesari, & Akbarzadeh, 2012](#)).

Behavioral and psychological problems have a wide spectrum and encompass mild conditions such as anxiety, hyperactivity, depression, and decreased concentration. For this reason, a program entitled "Child and Adolescent Mental Health Plan," in collaboration with the Ministry of Education, the Department of Mental Health of the Ministry of Health, is being developed ([Asanjarani & Arslan, 2021](#); [Mohammadi et al., 2014](#)). Many parents believe that some behavioral issues such as hyperactivity and lack of focus are natural and age-appropriate for their child, while these issues are among the most common behavioral problems in school-age children. It should be noted that if these problems are not controlled and treated, the individual may face issues such as academic decline and, in adolescence, may encounter problems like delinquency, aggression, and behaviors contradicting societal norms ([Cornacchio et al., 2017](#); [Francis, 2015](#); [Halder & Mahato, 2019](#); [Israel et al., 2020](#)). Nevertheless, some families are not considering treating their child and may mistakenly assume that the individual has become morally corrupt, while they are actually suffering from a treatable psychological or behavioral problem ([Kendall, 2011](#); [Rogers & Pilgrim, 2021](#)).

Considering the importance of this issue and the numerous challenges we face, the present research delves into examining this topic in order to address these problems and raise awareness among parents, teachers, and school mentors regarding the recognition and treatment of these disorders.

METHODOLOGY

This research was conducted using a descriptive method and was of a comparative type. The research population consisted of children aged 7 to 10 years old, with a sample size of 1133 determined using the Morgan table. Participants included children born in Iran. The sampling method used was convenience sampling. In this study, data were collected by directly contacting the target population. Data collection was carried out using the following questionnaire.

Rutter Behavioral Problems Questionnaire: This test, developed by Michael Rutter (1967), is designed to differentiate between normative children and children with behavioral problems. The Rutter Parent Form questionnaire consists of 18 questions scored in a Likert format (from 0 to 2). The cutoff point on the scale is 7, and children scoring 7 or higher are considered to have behavioral disorders. This test measures behavioral problems such as aggression and hyperactivity (questions 8-4-3-2-1), depression and anxiety (questions 9-7-6), social maladjustment (questions 15-14-13-5), antisocial behaviors (questions 16-15-12), and attention deficit disorder (questions 14-2-1).

Statistical descriptive indices such as mean, standard deviation, median, and mode were used for data analysis in this research. The Kolmogorov-Smirnov test and Levine's test were used to check the normality of the collected data. Independent t-test and Mann-Whitney test were used to examine each of the research hypotheses.

RESULTS

Table 1. The mean and std. deviation of the dimensions of behavioral problems by natural birth and cesarean section

Variable	Type of birth	N	Mean	Std. Deviation
Aggressiveness and Hyperactivity	Natural Birth	491	1.591	1.413
	Cesarean Section	642	1.64	1.349
Depression and Anxiety	Natural Birth	491	1.244	0.99
	Cesarean Section	642	1.156	1.115
Social Maladjustment	Natural Birth	491	1.059	1.383
	Cesarean Section	642	1.468	1.368
Antisocial Behaviors	Natural Birth	491	0.124	0.421
	Cesarean Section	642	1.675	0.917
Inattention	Natural Birth	491	1.022	1.111
	Cesarean Section	642	1.487	1.109

According to Table 1, the mean of aggression and hyperactivity in children born birth natural delivery was 1.591 and in children born through cesarean section was 1.64; the mean of depression and anxiety in children born through natural birth was 1.244 and in children born through cesarean section was 1.156; the mean of social maladjustment in children born through natural birth was 1.059 and in children born through cesarean section was 1.468; the mean of antisocial behaviors in children born through natural birth was 0.124 and in children born through cesarean section was 1.675; and the mean of attention deficit disorder in children born through natural birth was 1.022 and in children born through cesarean section was 1.487.

Table 2. MANCOVA results on the mean of the natural birth and cesarean section

Test	Value	F	Hypothesis DF	Error DF	Sig.	Effect size
Pillai's trace	0.045	10.581	5	1127	0.001	0.741
Wilks' lambda	0.955	10.581	5	1127	0.001	0.741
Hotelling trace	0.047	10.581	5	1127	0.001	0.741
Roy's largest root	0.047	10.581	5	1127	0.001	0.741

The results according to the table above show that there is a significant difference between the behavioral and mental problems of children with natural birth and cesarean section; So that the effect of this difference is significant at the level of 0.741.

Table 3. The results of the analysis of covariance in MANCOVA on the mean of behavioral problems by natural birth and cesarean section

Dependent variable	Sum squares	Df	Mean square	F	Sig.
Aggressiveness and Hyperactivity	0.057	1	0.057	0.004	0.9
Depression and Anxiety	6.538	1	6.538	0.657	0.4
Social Maladjustment	39.864	1	39.864	3.174	0.04
Antisocial Behaviors	271.695	1	271.695	25.172	0.001
Inattention	599.557	1	599.557	21.43	0.001

The results showed that there was no significant difference between children born by natural birth and children born by cesarean section. There is no significant difference between children in depression and anxiety; However, there is a significant difference between natural birth and cesarean section children in social incompatibility according to $p=0.04$, in antisocial behaviors according to $p=0.001$, and in attention disorder according to $p=0.001$.

CONCLUSION

Given that the type of childbirth affects the behavioral and psychological conditions of children, it can be said that in addition to environment and genetics, the type of childbirth also

has a significant impact on the emergence of behavioral and psychological problems in children. In confirming these results, we refer to Verdult (2009), which examined the psychological aspects of cesarean birth in adults. He believes that non-medical reasons are the main cause of the recent increase in cesarean deliveries worldwide, and he focuses on the long-term effects of cesarean birth on individuals' personalities. In his article, he discusses various theories governing cesarean birth and different models presented by various researchers in this field. He discusses McCarty (2002) theory, according to which cesarean birth can influence infants' emotions and perceptions in adulthood. Additionally, Emerson's theory regarding cesarean birth is mentioned in this research, which suggests that this type of birth could lead to individuals repeating mistaken experiences in adulthood. According to Emerson's theory, individuals born through cesarean delivery face many difficulties in social interactions, and even sexual relationships in adulthood.

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