Behavioral disorders in children born with infertility treatments compared with children born with natural methods

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Abstract

Introduction: The aim of this study was to investigate behavioral disorders in children born with infertility treatments and children born with normal fertility. Childhood is the most important stage of life in which a person's personality is founded and formed and any neglect of that can lead to problems and conflicts after the childhood.

Methods: The present study was a causative and comparative survey. The target statistical population of this study included children born with assisted reproductive techniques and the ones born with natural methods of fertility. The samples of this study were gathered randomly from 30 children born with assisted reproductive techniques in cases in IVF ward in Kerman Afzalipour hospital. After homogenizing the children born with natural methods of fertility with the first group based on gender, age, education level, father's occupation, and family members, 30 subjects were selected. For data collection, Quay and Peterson revised checklist was used which is a standard instrument. To describe the data, descriptive statistics such as mean, standard deviation and frequency were used and inferential statistics were applied to compare the means and independent *t* test was used to investigate the data.

Results: The obtained results showed a significant difference between the behavioral disorders and its components including attention-immaturity and anxiety-reticence, but there was no significant relationship between elements of aggression and conduct disorder.

Conclusion: This study showed that the kind of fertilization effective on behavioral disorders in children.

Keywords: Behavioral disorders, Fertility, Infertility, Assisted reproductive techniques

Introduction

Today children are the future builders of society and they play a pivotal role in human societies. Thus, in developing countries, children make almost 50% of total population (1). Thus, the health and sickness of this large group play an important role in the health and sickness of future society and generations. Therefore, it is important to pay more attention to mental and physical health of this group and take step toward prevention and treatment of diseases and mental and behavioral disorders. Children's behavioral problems are common and debilitating disorders can cause problems for families and children (2). Children with behavioral disorders have their own problems and they suffer from lack of attention, low self-esteem, poor social relationships, and high failure. If such behavioral patterns continue, they may lead to major compatibility problems and the reduction in quality of life during the child future (3). Childhood is the most important stage of life in which an individual's personality is founded and shaped. Most behavioral disorders and conflicts after childhood are due to the lack of attention to the critical period of childhood and lack of proper guidance in the process of growth and evolution that leads to the lack of compromise and compatibility with the environment and outbreak of different disorders in various aspects of childhood (4). All children sometimes show a maladaptive behavior, while this is considered as an abnormal behavior which happens repeatedly and it interferes with their functions or other's. Desire to have children is a general demand and the sadness of infertility is regarded as a major crisis in life. The prevalence of infertility in different countries varies between 30%-50%, and on this basis it

can be said that there are more than 80 million infertile persons in the world. In Iran it is estimated that out of 72 million persons (18 million couples), more than two million couples are infertile (5). It is estimated that each year 219 to 246 million children are born through infertility therapies in the world (6). Although 5 million children are born with rehabilitation methods (infertility treatment), there are still some concerns about the potential side effects of these methods, especially on the born children. In a number of studies, some variations have been seen in the emotional (affective), social or behavioral development, as well as cognitive, motor and mental development, or the risk of psychiatric disorders such as hyperactivity in children born with infertility treatment methods and natural methods (7). In order to grow and progress toward a better society, all individuals, as well as mental health institutions are obliged to pay attention to children's issues and to prepare a basis for the diagnosis and treatment problems. Physical and mental health of future youths depends on mental health of childhood. Knowledge about the prevalence of behavioral disorders in children born with infertility can be the next field of research that can timely treat and correct non-adaptive behaviors. Due to the paucity of studies in this field, the present study aimed to evaluate the behavioral disorders in children born with natural methods and those born with infertility treatment.

Methods
Data analysis
In this causal-comparative study we examined the behavioral disorders in children born with infertility treatment and children born with natural methods of fertility for 5 to 10 years. Thirty children born with infertility treatments and 30 children born with natural methods of fertility (16 girls and 14 boys) were selected. The first group was selected randomly by referring to families in Afzalipour IVF Center of Kerman. We included those who had medical cases since 2003, the people which their treatment led to fertility and their consent of having a child. In addition, among children who were born with natural method, based on the age of the target group (5 to 10 years), gender, level of education, father's occupation and the number of children, a control group was selected. To measure the dependent variable, the revised checklist of behavioral problems by Quay-Peterson was used. This standard instrument was designed by Quay-Peterson in 1987 for grading behavioral problems of children ages 5 to 18 years. Shahim et al (8) revised it and made some adaptation and standardized it. It encompasses 4 subtests of conduct disorder (38 items), socialized aggression (9 items), attention-immaturity problems (33 items), and anxiety-reticence (8 items). To evaluate the reliability of the checklist, a test-retest and Cronbach alpha coefficient were used. The reliability coefficient of test-rest for total scores of the checklist was measured 88%. It was 90% for conduct disorder, 85% for attention-immaturity problems, 79% for socialized aggression, and 78% for anxiety-reticence. By the same token, Cronbach alpha coefficient for total scores of the checklist was measured 98%. In this regard, it was 97% for conduct disorder, 97% for attention-immaturity problems, 82% for socialized aggression, and 85% for anxiety-reticence (8). For validity purposes, the correlation of items with the total score of the checklist, factor analysis and correlation of checklist scores of behavioral problems and Rutter questionnaire were used. In this study, factor analysis with principal components and varimax rotation were used. Kaiser-Mayer-Olkin (KMO) coefficient was measured 97% and Bartlett was significant at 0.0001. Factor analysis was done with principal components and then the Scree plot was drawn and four factors with eigenvalues greater than 1 were selected. The collected data were analyzed by using descriptive statistics, mean, standard deviation, frequency and percentage. Independent t test was used to compare the means of two samples. SPSS version16 was used for data analysis.

Results
Of 60 children participated in this study, 30 children were categorized in the group of children born with natural fertility method and 30 children were categorized in the group of children born with assisted reproductive techniques. There were 16 (54%) girls and 14 (46%) boys in both groups. The age of children in both groups was the same. 6.6% of children were 5 years old, 10% were 6 years old, 30% were 7 years old, 10% were 8 years old, 20% were 9 years old, and 23.4% were 10 years old. Regarding children's educational level, 6.6% of the children were at kindergarten age, 10% were at pre-school age, 30% were in the first grade, 10% were in the second grade, 20% were in the third grade, and 23.4% were in the fourth grade elementary school. Concerning fathers' occupations; 46.7% of fathers in both groups were self-employed, and 53.3%

Table 1. Independent t test results of behavioral disorders in children born with infertility treatment methods and the ones born with natural methods of fertility

Variable	Group	N	X	S	Levene test for equivalence of variances		Independent t test for equivalence of means		
					F	P	t	df	P
Behavioral disorders	Infertility treatment method	30	37.66	12.18	4.036	0.059	3.16	58	0.002
	Natural fertility method	30	24.33	20.05					

Table 2. Independent t test results of conduct disorders in children born with infertility treatment methods and the ones born with natural methods of fertility

Variable	Group	N	X	S	Levene test for equivalence of variances		Independent t test for equivalence of means		
					F	P	t	df	P
Conduct disorders	Infertility treatment method	30	15.1	5.18	6.28	0.15	1.87	58	0.066
	Natural fertility method	30	11.56	10.05					

Table 3. Independent t test results of attention-immaturity disorder in children born with infertility treatment methods and the ones born with natural methods of fertility

Variable	Group	N	X	S	Levene test for equivalence of variances		Independent t test for equivalence of means		
					F	P	t	df	P
Attention-immaturity disorder	Infertility treatment method	30	15.56	8.89	0.033	0.856	2.74	58	0.008
	Natural fertility method	30	9.26	8.91					

Table 4. Independent t test results of aggression in children born with infertility treatment methods and the ones born with natural methods of fertility

Variable	Group	N	X	S	Levene test for equivalence of variances		Independent t test for equivalence of means		
					F	P	t	df	P
Aggression	Infertility treatment method	30	0.83	0.94	1.11	0.296	0.11	58	0.911
	Natural fertility method	30	0.73	1.14					

had governmental jobs. In terms of birth order; 80% of children in both groups were the first child and 20% of them were the second child.

We could observe a significant difference between behavioral disorders in children born with natural methods of fertility and the ones born with infertility treatment methods.

According to the information in Table 1, findings show that there was a difference between the means of behavioral disorders ($P<0.01$). Since the mean scores of behavioral disorders in children born with infertility treatment compared with children born with natural method was high, so the extent of disorders was higher in the former. There was a significant difference between conduct disorder in children born with natural methods of fertility and infertility treatment methods.

According to the information in Table 2, we could not find a significant difference between conduct disorders in children born with natural methods of fertility and the ones born with infertility treatment methods ($P<0.01$).

Moreover, there was a significant difference between attention-immaturity disorder of children born with natu-

ral methods of fertility and the ones born with infertility treatment methods.

Based on the information provided in Table 3, there was a significant difference between attention-immaturity disorder in children born with natural methods of fertility and the ones born with infertility treatment methods ($P<0.01$). Due to the high score of means of attention-immaturity disorder in children born with infertility treatments compared with children born with natural method, the lack of attention-immaturity disorder of this group of children compared to children born with natural methods was higher.

There was a significant difference between aggression in children born with natural methods of fertility and those born with infertility treatment methods.

Based on the information provided in Table 4, concerning the aggression variable, there was not a significant difference between two groups of children born with infertility treatment methods and natural methods of fertility ($P>0.01$).

Thus, there was a significant difference between anxiety-reticence in children born with natural methods of fertil-

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