Original Article

The role of parent-child relationship, attachment styles, and family performance in the formation of gender dysphoria

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Abstract

Introduction: Parent-child relationship problems, attachment styles, and inefficient family performances, all items have been considered as key components of psychological disorders in several psychopathology models. The present study aimed to assess the role of parent-child relationship and attachment styles as mental and emotional factors, and the role of family performance as a family factor in the occurrence of gender dysphoria.

Materials and Methods: The statistical population of this study includes all individuals suffer from gender dysphoria, who referred to the department of forensic medicine Khorasan Razavi to proceed the legal process of gender reassignment during 2014-2016. In total, 101 individuals (51 female and 50 male), who suffered from gender dysphoria, were selected through convenience sampling. Written informed consents were obtained from the subjects, who completed the questionnaires related to parent-child relationship, attachment styles, and family performance. Data analysis was performed on SPSS version 21 using regression analysis.

Results: According to the results obtained from simultaneous regression analysis, the most important components in parent-child relationship are replication ($P<0.01$) and role confusion/ disturbance ($P<0.000$), in attachment styles, avoidant insecure attachment style ($P<0.000$) is the important factor, and in family performance, communication ($P<0.01$), emotional bonding ($P<0.01$), problem solving ($P<0.03$), and total performance of family ($P<0.03$) are the most important components, which are capable of predicting gender dysphoria.

Conclusion: Based on the findings, it seems that the concurrent role of mental, emotional, and family factors are significant in formation of gender dysphoria.

Keywords: Attachment, Family performance, Gender dysphoria, Parent-child relationship

Introduction

Gender identity defines as the feeling of femininity or masculinity of an individual. It is a mental state, which is characterized by a sense of an individual toward being a man or a woman. In other words, it is a concept that a person considers himself to be male or female. This concept involves the behavior of an individual to choose the kind of his clothes, his appearance, and his ideal life. Gender identity and sex interact with each other; according to Robert Stoller, "gender identity implied a content of psychological behavior related to femininity or masculinity, which often is in accordance with the bio gender

of an individual, that is, men present masculine behavior and women show feminine behavior" (1). Most individuals present behavioral indications, which are consistent with their bio gender and appearances. However, few people indicate behaviors, which are different from their physical appearances and gender, this is called gender dysphoria or gender identity disorder (2).

Gender dysphoria is a new diagnosis added to the diagnostic and statistical manual of mental disorders, fifth edition as a replacement of gender identity disorder in the fourth edition of this manual. In the fourth edition, the chapter on gender identity disorder consists of three distinct diagnoses including gender identity disorder, sexual dysfunction, and paraphilias.

In the fifth edition, separate criteria are considered for gender dysphoria of children, teenagers, and adults. Criteria for this disorder in teenagers and adults include more details.

Criteria A in the previous edition (cross-gender identification) and criteria B (gender hatred) integrated with each other since studies have found no evidence indicative of the separation of these two criteria (3).

In children, the statement of sever tendency to have a different gender is replaced with the repeated tendency to have opposite sex, so that it would involve conditions where children cannot express their desire to have the opposite gender in violent environments. Moreover, insisting on belonging to cross-gender as diagnostic criteria is necessary. Additionally, reports of parents are also added as an evaluation method. For teenagers and adults, obvious clinical disturbance and destruction of social and occupational relations, and other important functional aspects are also added (3). The prevalence rate for men is 0.005%-0.014% and for women is 0.002%-0.003%. According to the latest statistics, approximately one out of 30000 mature men and one out of 100000 mature women seeks to sex reassignment surgery (4). Biological and psychological factors, such as stress before birth, genetic and hormonal disorders, and neurological problems and central nervous system disorders are among the most important factors affecting the formation of this disorder (5). Studies show that the high levels of testosterone or estrogen in certain periods of growth can cause generating masculine characteristics in women or vice versa. Some physicians find out that in patients of sex reassignment, the anterior part (the bed nucleus of the stria terminalis) of hypothalamus glands of the brain, which involves sexual characteristics of a human, is similar to cross-gender. These physicians believe that this brain disorder originated from the embryonic period. The sexual characteristics of the brain of men are due to the existence of sufficient testosterone. Therefore, when there is no testosterone, the brain of men acquire the characteristics of the brain of women (6). An autopsy of six men, who suffered from gender dysphoria, revealed that the size of this part of their brain was similar to the size of the brain of women. Therefore, there is a high possibility of inheritance of gender dysphoria (4).

Parent-child relationship and family play important roles in social-psychological factors. Preference of parents to have a female or male child has an effect on child growth and worthiness in the family. Results show that in some cases when mothers of boys with gender dysphoria are not satisfied to give birth to a boy instead of a girl, this could negatively affect the relationship between mother and her son (7-8).

Mitchell (9) reported that compared to children of group control, mothers of sons with gender dysphoria are more likely to support their children when they demonstrate feminine behavior rather than masculine manners. Naturally, allowing children to present the behaviors of cross-gender in a long time may lead to stabilizing those behaviors and the formation of cross-gender identity.

According to clinical observations, two factors may cause mothers to react positively toward the feminine behaviors of their sons, which are: the perception and understanding of female gender as an educational factor, and the fact that some mothers feel that they have failed at raising their children. The other issue is the aggression and violent behavior of men or their fathers, which result in the severe aggression of the mothers, of course, this idea should be analyzed and tested.

Stoller (10) stated that boys with gender dysphoria are often more attractive than other children, and Green also reported in 1987 that the mothers of these children often describe their sons as a beautiful baby similar to a girl (11). On the other hand, mothers of these children spend less time with their sons, and more separations are reported between them during their childhood. Moreover, compared to normal boys, these boys are controlled more and their mothers have a high percentage of Psychopathology (12). Moreover, these boys have an insecure relationship with their mothers, and daughters also have problems in communicating with their mothers, their relationship is a weak and ineffective relation resulted from the high level of the psychopathology of the mothers, such as depression and personality problems. Through projective tests, Sherman (13) demonstrated in his

study that boys with gender dysphoria were not satisfied with the quality of relationship with their fathers, and their relation was negative and conflicting. Given the fact that emotions and emotional disorders have major roles in the development of mental diseases (14), insecure attachment styles in children can make them susceptible to demonstrating psychological disorders. Several studies have shown that insecure attachment styles are the reasons for emergence and evolution of psychological disorders. Insecure attachment in children with a biological background of gender identity disorder can facilitate and intensify the occurrence and growth of this disorder. Satisfying the emotional needs of a child, severe experiences of rejection and negligence during childhood, and not experiencing a stable and profound emotional bond cause insecure individuals to be subjected to all kinds of communicational issues and psychological disorders. Theorists of psychodynamics school believe that depersonalization and major replication with cross-gender can be a defense mechanism to reduce the negative emotions. In some cases, incompetent of a same-gender parent in providing a model of appropriate role and lots of interventions in children affairs lead the children to replicate with cross-gender (15). Given the fact that the symptoms of gender dysphoria (gender identity disorder) in the process of transformation arise very soon, it seems that contemplation in the field of initial relationships of attachment could be significant in its emergence. Therefore, in assessment and evaluation of gender dysphoria, some researchers focused on the quality of childhood attachment relationships. Brekenfeld-Adams showed in his studies that 75% of young boys with gender dysphoria indicated insecure attachment relationships with their mothers. Other studies also reported a similar percentage in relation to girls with gender dysphoria (16). On the other hand, studies have shown that the family performance in individuals with gender dysphoria has less efficiency, compared to the family performance of normal individuals (10,17-18). The chaotic and disturbing relationships in families of individuals with gender dysphoria make them more confused and increase the opportunity for the confusion of sexual roles. Yazdanpanah and Samadian in their research demonstrated that there is a significant difference between individuals with gender dysphoria and normal people in terms of various personal and family variables, such as behavior of the parents during childhood, encounter with child in learning appropriate behavioral patterns suitable for

society, emotional companionship of family members, emotional bonding, effective relation of the members inside family, the experience of sexual, abuse, using cloths, cosmetics, and behavior of cross-gender in childhood (19).

Therefore, the present study aimed to assess the contribution of the parent-child relationship, attachment styles, and family performance in predicting gender dysphoria.

Materials and Methods

This was a descriptive correlational research, which was conducted with the approval of Isfahan University. The statistical population of this study included all individuals suffered from gender dysphoria, who referred to the department of forensic medicine Khorasan Razavi to proceed the legal process of gender reassignment during 2014-2016. In total, 101 individuals (51 female and 50 male) were selected through convenience sampling. Written informed consents were obtained from the subjects, who completed all three questionnaires of this study (inconsistent schema, difficulty sequencing the order of excitement, and confronting style).The entry criteria of participating in this study were the diagnosis of gender dysphoria in Transsexual Studies Center of Mashhad, final confirmation had to perform by the psychological commission of the department of forensic medicine Khorasan Razavi, and the age of the participants was at least 18 years. The exit criteria include psychosis, bipolar disorder or mental retardation, and dissatisfaction to participate in the study.

Data analysis was performed in a statistical package for social science (SPSS) version 21 using simultaneous regression analysis.

Research instrument

A) Parent-Child Relationship Survey (PCRSM): This inventory was presented by Mark A. Fine, J. R. Moreland, and Andrew I. Schwebel in 1983, it consists of 24 items to measure the quality of the parent-child relationship. This inventory has two forms that one is used to measure child-mother relationship and the other is used to measure the father-child relationship. Two forms are the same for mother and father, with the exception of the words "father" and "mother", which are replaceable. There are various factors in both forms. The form, which assesses the relationship with father includes positive feelings, father Involvement, communications and anger, and the form assessed the relationship with mother consists of positive emotions, confusion in the role, identification, and communication. This scale was

performed on 241 students, 100 of which were male and 141 were women. The parent-child relationship scale with coefficient alpha ranging from 0.89 to 0.94 for subscales related to father and overall coefficient alpha of 0.96 and coefficient alpha ranging from 0.61 to 0.94 for subscales of mother and overall alpha of 0.96 have proper internal consistency (21).

Studies conducted in Iran have confirmed the validity and reliability of this test. In a research conducted by Khosravi, this questionnaire was performed by 240 female high school students in the city of Tehran. The overall coefficient alpha was obtained 0.85 and 0.90 for subscales related to mother and father, respectively (20).

B) Revised Adult Attachment Scale (RAAS): This scale involves self-assessment of skills of building relationship and self-perception of the formation of attachment relationships toward close attachment dimensions. This 18-item scale, which was provided by Collins and Read in 1990, was scored on a five-point scale (strongly disagree: score zero to strongly agree: score 4), assessing three secure, anxious-avoidant insecure, and anxious-resistant insecure (ambivalent) attachment styles.Retest reliability coefficient of this test was reported by Collins and Read, which were 0.68, 0.71, 0.52, and 0.80 for three subscales of secure, anxious-avoidant insecure, and anxious-resistant insecure attachment styles, respectively (22).

On the other hand, in research conducted by Pakdaman, the validity of the test was determined using a re-test as a correlation between the two implementations. Results obtained from double execution of this questionnaire with a one-month interval confirmed the validity of the test at the level of 0.95 (23).

C) Family Assessment Device: Family assessment device is a 53-item tool designed by Epstein, Baldwin and Bishop in 1983, aiming to describe organizational and structural properties of families. This tool determines the ability of a family to compromise with the scope of family duties, and is scored on a four-point Likert scale (strongly agree: four, agree: three, disagree: two, strongly disagree: one). According to this scale, the minimum and maximum scores are 45 and 180, respectively, where a high score is indicative of health performance of the family and a low score shows poor performance of the family. Epstein, Baldwin and Bishop reported the Cronbach's alpha of 0.72 and 0.92 for dimensions of family functional measurement scale between roles and total performance, respectively (24). In 1995, Najarian reported the internal consistency of the whole scale to be 0.93 (26). In addition, Rajabi, Chahardouli and Atari reported the reliability coefficient of family performance, problem solving, roles and expressing emotions at Cronbach's alpha of 0.88, 0.84, 0.83 and 0.77, respectively (25).

Results

In total, 101 subjects had gender dysphoria, which included 51 females and 50 males, from whom written informed consents were obtained prior to the research.

Mean age of the participants was 18 years with maximum age of 44 years. In terms of level of education, the lowest and highest degrees were primary education and PhD candidacy, respectively. Demographic characteristics related to the relationship among child-parent relationship, attachment styles, and family performance.

Table 1. Descriptive statistics of scores of child-parent relationship, attachment styles and family performance

Variable	Subscales	Mean	Standard deviation	Variance	Minimum	Maximum	N
Child-parent relationship	Positive feelings	36	13	192.02	9	63	101
	Father involvement	19	6	42	6	37	101
	Communications	14.04	6	48	5	33	101
	Anger	3	1	2	1	7	101
Child-parent relationship	Positive feelings	64	18	33	30	94	101
	Role confusion/ disturbance	10.02	3	13	2	14	101
	replication	11	4	24	3	21	101
	Communications	31	10	116	7	49	101
Attachment styles	Secure attachment style	11	3	9	7	23	101
	Avoidance attachment style	13	3	15	5	23	101
	Anxious-resistant insecure (ambivalent) attachment	12	5	32	0	24	101
Family performance	Problem solving	13	4	16	5	20	101
	Relationship	14	3	14	6	25	101
	Roles	20	3	13	12	30	101
	Emotional companionship	13	4	20	6	22	101
	Emotional interaction	16	4	23	6	25	101
	Behavior control	24.05	3	11	16	35	101
	Total family performance	28	8	66	12	44	101

Table 2. Correlation coefficients of relationship between father and child and gender dysphoria

Correlation coefficient	Positive feelings	Father involvement	Communication	Anger
Gender dysphoria	0.188	0.181	0.046	-0.056
	0.030	0.036	0.325	0.291

Table 3. Regression test on the effect of relationship between father and child on gender dysphoria

Level of significance	F coefficient	Sum of squares	Degree of freedom	Standard coefficient of determination	Coefficient of determination	R coefficient	Model
0.054	2.411	244.119	4	0.054	0.092	0.304	Simultaneous

Level of significance	T coefficient	Standard coefficients	Non-standard coefficients		Model
		Beta	Estimation of error	B coefficient	
0.000	16.802		3.354	56.351	Width from the source
0.252	1.152	0.153	0.099	0.114	Positive feelings
0.054	1.953	0.323	0.264	0.516	Father involvement
0.361	-0.918	-0.151	0.244	-0.224	Communications
0.111	-1.611	-0.213	0.794	-1.279	Anger

As shown by correlation coefficients, a significant relationship was observed between gender dysphoria and components of positive feelings and father involvement. In Table 3, the simultaneous regression model is presented, and model determination coefficient of 0.092 (standard coefficient of: 0.054) was reported. In other words, regression model demonstrated that the regression model was able to predict 0.054% of variance of gender dysphoria. Significant level of F statistic was above 0.05, which is interpreted as non-significant change shown by the model. Results of correlation from the effect of the relationship between mother and child on gender dysphoria are shown in Table 4.

Table 4. Correlation coefficients of the relationship between mother and child and gender dysphoria

Communications	Replication	Role confusion/disturbance	Positive feelings	Correlation coefficient
0.334	0.427	0.510	0.324	Gender dysphoria
0.000	0.000	0.000	0.001	

Table 5. Regression test on the effect of relationship between mother and child on gender dysphoria

Level of significance	F coefficient	Sum of squares	Degree of freedom	Standard determination coefficient	Determination coefficient	R coefficient	Model
0.000	13.121	942.699	4	0.329	0.356	0.597	Simultaneous

Level of significance	T coefficient	Standard coefficients	Non-standard coefficients		Model
		Beta	Estimation of error	B coefficient	
0.000	10.635		3.714	39.494	Width from the source
0.091	1.709	0.165	0.055	0.094	Positive feelings
0.000	3.929	0.362	0.256	1.004	Role confusion/disturbance
0.017	2.421	0.225	0.193	0.466	replication
0.518	0.650	0.066	0.097	0.063	Communications

As shown by correlation coefficients in Table 4, a significant relationship was observed between gender dysphoria and components of positive feelings, disturbance, replication and communication. In addition, according to the simultaneous regression model in Table 5, determination coefficient of the model was reported to be 0.356 (standard coefficient: 0.329). In other words, the regression test indicated that the regression model was able to predict 33% of the variance of gender dysphoria. Level of significance of F statistic was below 0.05, which

means that the change demonstrated by the model was not a coincidence. Furthermore, the reported beta coefficients demonstrated that the best predictor of gender dysphoria were disturbance

(beta: 0.362) and replication (beta: 0.225), respectively. Results of correlation due to the effect of attachment styles on gender dysphoria are shown in Table 6.

Table 6. Correlation coefficients of attachment styles and gender dysphoria

Ambivalent attachment style	Avoidance attachment style	Safe attachment style	Correlation coefficient
0.270	0.369	-0.199	Gender dysphoria
0.003	0.000	0.024	

Table 7. Regression test of effect of attachment styles on gender dysphoria

Level of significance	F coefficient	Sum of squares	Degree of freedom	Standard determination coefficient	Determination coefficient	R coefficient	Model
0.000	7.012	1904.46	4	0.154	0.180	0.424	Simultaneous

	Level of significance		T coefficient	Standard coefficients	Non-standard coefficients	Model
			Beta	Estimation of error	B coefficient	
0.000	9.577		5.645	54.062		Width from the source
0.188	-1.326	-0.127	0.314	-0.416		Safe attachment style
0.002	3.233	0.313	0.253	0.817		Avoidance attachment style
0.148	1.460	0.145	0.180	0.262		Ambivalent attachment style

As shown by correlation coefficients in Table 6, a significant relationship was observed between gender dysphoria and components of safe, avoidant and ambivalent attachment styles. In Table 7, determination coefficient of the model was reported to be 0.180 (standard coefficient: 0.154) by the regression model. In other words, regression test demonstrated that the regression model was able to predict 15% of the variance of

gender dysphoria. Level of significance of F statistic was below 0.05, which could be interpreted as non-coincidental change by the model. Furthermore, the reported beta coefficients indicated that the best predictor of gender dysphoria was avoidant attachment style (beta: 0.313).Correlation results of the effect of family performance of gender dysphoria are shown in Table 8.

Table 8. Correlation coefficients of family performance and gender dysphoria

General family performance	Behavior control	Emotional interaction	Emotional companionship	Roles	Communication	Problem solving	Correlation coefficients
-0.379	-0.228	-0.445	-0.462	-0.132	-0.381	-0.427	Gender dysphoria
0.000	0.011	0.000	0.000	0.096	0.000	0.000	

Table 9. Regression test of effect of family performance of gender dysphoria

Level of significance	F coefficient	Sum of squares	Degree of freedom	Standard determination coefficient	Determination coefficient	R coefficient	Model
0.000	9.86	648.89	4	0.385	0.429	0.655	Simultaneous

Level of significance	T coefficient	Standard coefficients		Non-standard coefficients		Model
		Beta		Estimation of error	B coefficient	
0.000	13.927			7.078	98.575	Width from the source
0.036	-2.130	-0.192		0.233	-0.497	Problem solving
0.013	-2.540	-0.223		0.242	-0.615	Communication
0.851	0.188	0.016		0.241	0.045	Roles
0.043	-2.047	-0.202		0.226	-0.463	Emotional companionship
0.014	-2.508	-0.221		0.188	-0.472	Emotional interaction
0.950	0.063	0.006		0.273	0.017	Behavior control
0.039	-2.091	-0.193		0.118	-0.246	General family performance

As shown by correlation coefficients in Table 8, a significant relationship was observed between gender dysphoria and components of problem solving, communication, emotional companionship, emotional interaction, behavior control and general family performance. In addition, determination coefficient of the model was reported to be 0.429 (standard coefficient: 0.385) by the simultaneous regression model in Table 9. In other words, the regression test indicated that the regression model was able to predict 38% of variance of gender dysphoria. Level of significance of F statistic was below 0.05, which means that the change demonstrated by the model was not a coincidence. Furthermore, the reported beta coefficients showed that the best predictor of gender dysphoria are communication (beta: 0.223), emotional interaction (beta: 0.221), general performance (beta: 0.193) and problem solving (beta: 0.192).

Discussion

The present research was performed to evaluate the role of child-parent relationship, attachment styles, and family performance on prediction of gender dysphoria. According to the results, a correlation was found between the components of positive feelings and father involvement. However, the relationship between father and child was not able to predict gender dysphoria. On the other hand, a significant relationship was observed in the variable of the relationship between mother and child between gender dysphoria and components of positive feelings, role confusion/disturbance, replication and communication. In this regard, the most important factors from the total relationship between mother and child were role confusion/disturbance and replication with the ability of predicting 0.33 of variance of gender dysphoria.

This finding can be confirmed by saying that the quality of the relationship between mother and child during the first years of life is significantly important in establishing gender identity. During this period, mothers naturally inform children of their gender identity, making them proud of their own gender. In addition, a child is valued as a female or male. However, a cruel and degrading mother can disturb the growth of gender identity of the child. Moreover, self-orientation is also happening in the process of separation from the previous gender identity. Association of gender problems with separation and self-orientation problems might lead to use of gender tendencies to remain in a relationship, which fluctuates between child intimacy out of desperation and hostile and degrading distancing. Some children

receive the message that their value would be higher if that had the identity of the opposite gender. Abandoned and abused children might act based on such beliefs (27).

On the other hand, Cohen Katniss and Gooren (6) regarded the effect of behavior of parents, such as close intimacy with mother, absence of father, or the desire of mother to have a daughter, to be the cause of formation and growth of gender identity disorder. This might be due to lack of allowing children to recognize the same-sex parent by parents and encouraging the performance of behavior between genders. Staller (10) determined effective familial factors for gender identity disorder in females and males. In males, overly close relationship with the mother and distance from the father were pointed out. On the other hand, presence of a depressed mother during the first months of life and absence of the father and lack of support of the mother were mentioned for females. According to Marantez, identity disorder was due to negative effect of maternal penetration on growth of children (19,28).

Another important factor for prediction of gender dysphoria is avoidant insecure attachment style, which predicted 15% of variance of gender dysphoria in total. Chodovorov marked that learning the feeling of being a male or female is one of the first experiences caused by the attachment of the child to his/her parents. He also emphasized the importance of role of mothers. Children tend to be emotionally involved with their mothers since mothers have the most important effects during the first stages of life. This type of attachment must be broken at a stage to achieve a separate sense of self. It is necessary for children to be less attached to their mothers, which occurs differently for males and females. According to Chodovorov, men's identity is shaped by the loss of close continuous attachment to the mother. On the other hand, females experience the opposite; to elaborate, lack of emotional relationships threats the self-esteem of females (19). This process occurs reversely in individuals with gender dysphoria, leading to the formation of insecure attachment. According to previous studies, the majority of these individuals have insecure attachment style, which affects their emotional regulation and value (12,29).

Results of analysis of prediction of gender dysphoria in evaluation of family performance indicated that the most important factors of the total family performance were communication, emotional interaction, problem solving and general family performance, which predicted 38% of the variance of gender dysphoria in total. To

elaborate, it could be deducted that disrupted relationship in the family of these people leads to more confusion and increases the basis of confusion of gender roles. In this regard, our findings are in congruence with the results of previous studies (12,19,29,30). According to the results of the current research, communication, emotional interaction, problem solving and general family performance in the variable of family performance, replication and role confusion/disturbance in the variable of the relationship between mother and child and avoidant insecure attachment in types of attachment style were the most important factors for prediction of gender dysphoria. In addition, the role of mental-emotional factors are equally important as familial factors.

It should be noted that the results of the current study are important from both theory and practical aspects. From the theory aspect, simultaneous attention to the role of mental, emotional and familial factors can be considered in line with treatment theories. This note can be a guide for future studies to recognize gender dysphoria from all aspects. Regarding the practical aspect, necessary measures, such as educational interventions and family treatment, could be regarded by promoting the ability of individuals with gender dysphoria in creating healthy relationship with their families to solve psychological problems.

One of the major drawbacks of this research was lack of access to a greater number of clinical samples. Therefore, it is suggested that a larger sample size be evaluated in future studies, so that proper treatments could be designed and the results could be generalized.

Conclusion

According to the results of the present research, communication, emotional interactions, problem solving and general family performance in the variable of family performance, replication and role confusion/disturbance in the variable of the relationship between mother and child and avoidant insecure attachment in types of attachment style were introduced as the most important factors for prediction of gender dysphoria, and the role of mental-emotional factors must be taken into account along with familial factors.

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