EVALUATION AND COMPARISON OF FAMILY ENVIRONMENT IN PEOPLE WITH GENDER IDENTITY DISORDER AND HEALTHY CONTROLS, AND FAMILY ENVIRONMENT DIFFERENCES IN MALE AND FEMALE PATIENTS WITH THIS DISORDER

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ABSTRACT
The present study is conducted to evaluate and compare family environment in people with gender identity disorder (GID) and healthy controls and to compare family environment in male and female patients with gender identity disorder. The statistical population of the study is comprised of patients with GID admitted to the Shaheed Nawab Safavi Center for Crisis Management, Tehran, in August 2014. From among this population, 20 female and 20 male patients who were diagnosed with gender identity disorder by psychologists and psychiatrists at the Center and answered a GID diagnosis checklist were selected as participants through convenience sampling procedures. In addition, the researcher randomly selected a sample of 20 male and 20 female controls matched with the study group in terms of gender, age, and education. The study is conducted with a causal-comparative research design. For data collection, the researcher used the Family Environment Scale (FES) and a 23-item checklist in full compliance with DSM-IV diagnostic criteria for GID. Results of the multivariate analysis showed that there is a significant difference in the family environment variable. However, there was no significant difference between the two gender groups in any of the components of family environment and its three dimensions. Thus, the first hypothesis of this study is confirmed and the second hypothesis is rejected.

KEYWORDS: family environment, gender identity disorder, healthy controls

INTRODUCTION
One of the most important aspects of human personality is gender identity. Second to life and existence, the most important aspect of identification and valuation by oneself and others is whether one is called a man or a woman (Movahhed et al., 2011). An individual learns to think and behave in certain ways in the sense that he or she is born to life as a man or a woman (Yazdanpanah et al., 2011). The second and third years of life in which the individual forms a state of self-consciousness is referred to as the stage of search for identity (Mansoor, 1988). Children usually discover their gender identity in accordance with their gender education. This process is called gender determination. Mother-child relationship quality in the first years of life is of great importance to establishing gender identity (Kaplan and Sadok, 2008). Gender identity is generally formed through the learning process. This learning primarily begins in the home and develops in other institutions after the individual goes into society (Arizi et al., 2006). This natural process that in the majority of cases develops successfully sometimes goes a different path such that the child feels confused over the identification of his/her gender or even considers him/her as belonging to the opposite biological sex. In this situation, the child suffers from gender identity disorder (Movahhed et al., 2011). This disorder is likely to occur in childhood, adolescence and adulthood (Yazdanpanah et al., 2011). In DSM-IV-TR, gender identity disorder is defined as a set of disorders whose common feature is a strong and persistent preference for adopting the position and role of the opposite sex. The prevalence of this disorder in adults seems to be one in every 11,000 males and one in every 30,000 females. Psycho-social factors are the focus of the most important theories in etiology (Kaplan and Sadok, 2008).

Some psychologists believe that the best criterion by which one can accurately evaluate the moral, mental, and social condition of subjects is family network and relations besides the set of rules that govern these relations and the family environment (Gladling, 2003) The family is a network of relations in which parents and children interact with each other in a two-way process. In this network, the two sides of interaction have a huge influence on each other (Rezaei et al., 2007). In the case of patients with gender identity disorder, usually there are many variables concerning the environment of communication within the family and the initial conditions of growth that distinguishes them from others. This distinction strengthens the assumption that early child development and communication framework can prepare the ground for gender identity disorder (Raeesi, 2008). Emotional mastery of the mother on children is very important (Ebrahimii, 2011). Parents’ lack of attention to ensuring the safety of children’s mental and emotional development is a major factor in the etiology of this disorder (Sadok, 2007).
environment and lack of appropriate relations in most cases leads them to face emotional and motivational deficits and psychiatric problems such as anxiety disorders (Ganjii, 1994). On the other hand, inefficient emotional relationship between parents and children, factors that cause anxiety in children, and in a word, lack of security in the family are involved in the formation of gender identity disorder (Khajenoori, 2009).

Mehrabi studied 57 patients with gender identity disorder from 1989 to 1995. He observed in the patients unfavorable family conditions, lack of mutual understanding between parents and absence of a same-sex parent (Mehravar et al., 2011). In another study, Fazelinia (2001) found that divorce and family disintegration, multiplicity of children, poor economic status, excessive control or absolute freedom of children, lack of religious beliefs, remarried parents, and extreme kindness to children are the most damaging social factors in the family (Fazelinia, 2001). Studying different views of human communication networks, Bakhshipour Roodsari (2001) states that the first and most immediate communication network that engulfs every human being is the network of Family Relationships. In general, mental health problems or illnesses are in one way or another forms of pathological Family Relationships (Bakhshipour Roodsari, 2001). In a case study conducted on a patient with gender identity disorder, Khodayarifard and Abedini (2003) concluded that the emotional environment of the family was very cold and devoid of any emotional charge due to the mother’s depression, coldness and nervousness such that the daughter of the family had no desire to talk to her parents. The father too did not have a warm emotional relationship with the mother and the children (Khodayarifard and Abedini, 2003). The results of another study conducted by Razmi (2004) showed that family cohesion and flexibility have a significant impact on identity formation in adolescent girls and boys. (Razmi, 2004)

Ahmadi (2004) showed that there is a relationship between the emotional environment of the family and identity crisis (Ahmadi, 2004). In a study entitled “family functioning in patients with gender identity disorder”, Rezaee et al. (2007) concluded that family functioning has a 34% effect on the occurrence of GID (Rezaee et al., 2007). In a study to identify effective risk factors in the development of gender identity disorder in patients with this disorder, Asgari et al. (2007) concluded that the two variables of family power structure and the presence of children in environments that are incompatible with their gender are significantly correlated with gender identity disorder (Asgari et al., 2007). In another research, Najjar Pourostadi (2008) concluded that adverse emotional environment in the family, low self-concept, low self-esteem, and belonging to lower socio-economic strata can be serious obstacles in the way of identity formation (Najjar Pourostadi, 2008). Biller (1974) conducted a research on the effects of parental deprivation on learning gender roles. The results showed that the physical or psychological absence of the father at home affects the process of learning gender roles. (Biller, 1974).

Mead & Rekers (1979) observed a significant absence of the father in the families of all of the boys with deep gender identity disorder. (Mead & Rekers, 1979). In another study, Rekers, Mead, Rosen and Bringham (1983) showed that the absence of a masculine model in the families of people with GID compared with normal families has a significant impact on the occurrence of GID (Bingham, 1983). Sherman (1985) considers the child-parent emotional connection as an effective factor in the development of identity disorder (Sherman, 1985). Zucker (1985) in another study showed that people with gender identity disorder followed inflexible, compulsive, persistent and tenacious patterns in the family (Zucker, 1985). Coates (1992) stated that insecurity in the family is linked with the incidence of GID in children (Coates, 1992). Rozhberg and Kidder (1992) showed that female identity formation is associated with the emotional environment of the family, that is, with a shame-based family system (Rozhberg and Kidder, 1992).

Rekers and Kilgus (1995) and Rekers (1995) found in their studies that the relationship between father and daughter and the mother’s disability in and avoidance of building a relationship with the daughter are an important aspect of the development of this disorder in girls Rekers and Kilgus; 1995; Rekers 1995). Zucker and Bradley (1995) argued that child-parent emotional connection is effective in the formation of gender identity disorder and concluded in their study that giving freedom to children in manifesting behaviors for a long time will stabilize those behaviors and their gender identity formation. They also found that factors that cause anxiety in children can lead to the development of GID (Zucker and Bradley, 1995). Bratel and Haring (1997) in their study showed that family interaction patterns influence individual development in terms of identity formation (Bratel and Haring, 1997). The results of a study in which 124 patients admitted to the Portman clinic were studied by Cohen-Kettenis et al. (1999) showed that 57 percent of the patients had communication problems with parents and caregivers and 52 percent with peers. 38 percent of the patients had mental family health problems and 38 percent had physical family health problems. The results indicate that the
role of the family is all determining in the formation of GID (Cohen-Kettenis et al., 1999). In a case study by Diceglie (2000), a 16-year-old boy dissatisfied, lonely and desperate with his physical gender commits suicide. He was sexually abused by his father when he was 7 years old and accepted that he was a girl. The other case was a girl who had brought depression to her mother when she was born, a girl who had witnessed her father’s physical violence against her mother. Considering her extreme love for the mother and her desire to make her happy, she constantly tried to strengthen her body and thought about becoming a boy to protect her mother (Diceglie, 2000).

Alanko et al. (2003) tried to answer this question: Does parenting style affect abnormal sexual behaviors in children? According to the results, it was concluded that the dominance of one of the parents in the family is an effective social variable in the development of gender identity disorder (Alanko et al., 2003). In another case study conducted by Jeffreys (2005), a girl who introduces herself as a boy everywhere and suffers from GID says that as a child she witnessed violent behavior by her parents and relatives. She adds that even his uncle was going to make advances to her. Her father dies and she loses her father’s emotional support. And her mother defines masculine roles for her. (Jeffreys, 2005).

As is shown, the family has a fundamental role in the development of gender identity disorder. Despite the low ratio of people with GID to patients with other disorders, since this condition can strongly affect the personality and behavioral systems of individuals and their social integration and can become a source of identity crisis, it is necessary for researchers to consider it. The importance of this issue is doubled when we realize the fact that gender dissatisfaction and the tendency to change one’s gender are relatively unknown in Iran not only to ordinary people but also to students, university lecturers and even public authorities. In the meanwhile, it must not be forgotten that the family is the main basis for individual identity formation and, subsequently, each person’s gender identity. None of the studies mentioned above systematically assesses the relationship between family environment and gender identity disorder. On the other hand, such evaluations have not been performed in Iran to provide decision making guidelines for mental health practitioners according to our own culture. In order to achieve these goals, the present study assesses the relationship between family environment and gender identity disorder to determine the extent to which the family can lead to the development of GID. Having said that, this study is conducted with the aim of assessing the following basic relationships:

1. The relationship between family environment and gender identity disorders in children
2. The relationship between family environment and gender identity disorder in girls
3. The relationship between family environment and gender identity disorder in boys

To achieve the study objectives, the researchers propose the following hypotheses:

1. There is a significant difference in family environment between people with gender identity disorder and healthy controls
2. There is a significant difference in family environment between girls and boys with GID

MATERIALS AND METHODS
The present study is conducted with a causal-comparative design. The statistical population of the study is comprised of patients with GID admitted to the Shaheed Nawab Safavi Center for Crisis Management, Tehran, in August 2014. From among this population, 20 female and 20 male patients who were diagnosed with GID by psychologists and psychiatrists at the Center responded to a GID diagnosis checklist derived from DSM-IV and were confirmed to suffer from this disorder. As a result, these people were selected through convenience sampling procedures. In addition, the researcher randomly selected a sample of 20 male and 20 female controls matched with the study group in terms of gender, age and education.

Data Collection Instruments:
1. The Family Environment Scale (FES): This scale was designed in 1976 by Bernice and Rudolf Moos and was expanded by Rudolf Moos later in 1986. This scale measures the three underlying dimensions of the family environment: Family Relationship, Personal Growth, System Maintenance and Change. The FES consists of 90 items and 10 subscales and evaluates the social environment of the family, interpersonal relationships, growth
issues of family members, and family struggle for maintenance in critical conditions. (35) The reliability of this scale has been evaluated in Iran. The scale yielded a Cronbach’s alpha coefficient of between 0.56 and 0.79 and a Pearson’s r of between 0.63 and 0.83. The validity of the scale was examined both in terms of content validity and discriminant validity. (36) In their study on an American sample, Moos and Moos (1998) reported a test-retest reliability of between 0.52 and 0.91 with intervals of 2, 4 and 12 months. One of the unique characteristics of the Family Environment Scale is its ability to measure several parameters related to the family environment. (37)

2. A 23-item checklist in full compliance with DSM-IV diagnostic criteria for GID: the checklist yielded a Cronbach’s alpha coefficient of 0.82 (Mehravar et al., 2011). The participants responded to each checklist item with a yes or a no. People with gender identity disorder respond to most of the items with a yes whereas normal people rarely answer affirmatively or do not do so at all. The checklist used in this study is a localized Persian version of DSM-IV diagnostic criteria for GID.

RESULTS
The results are presented below at both descriptive and inferential levels. The mean age of healthy female controls, female patients with GID, healthy male controls and male patients with GID is 24.6, 24.2, 24.5 and 25.15, respectively. 90 percent of the subjects in the first two groups and 85 percent of the subjects in the second two groups are single. The greater portion of healthy female controls (40%) and female patients with GID (45%) have a BA degree whereas 45 percent of healthy male controls and male patients with GID failed to obtain a high school diploma. The greater portion of healthy female controls (65%) and female patients with GID (45%) are unemployed or students whereas 45 percent of healthy male controls are unemployed or students and 45 percent of male patients with GID are self-employed. Table 1 presents the descriptive results of the study variables in four groups.

<table>
<thead>
<tr>
<th>Healthy male controls</th>
<th>Male patients with GID</th>
<th>Female patients with GID</th>
<th>Healthy female controls</th>
<th>Group Index</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>41.35</td>
<td>30.8</td>
<td>29.45</td>
<td>42.6</td>
<td>Mean</td>
<td>Family Environment</td>
</tr>
<tr>
<td>8.8</td>
<td>3.8</td>
<td>5.5</td>
<td>4.11</td>
<td>SD</td>
<td>Family Relationship</td>
</tr>
<tr>
<td>13.05</td>
<td>11.3</td>
<td>9.55</td>
<td>12.65</td>
<td>Mean</td>
<td>Personal Growth</td>
</tr>
<tr>
<td>3.11</td>
<td>2.3</td>
<td>2.04</td>
<td>2.8</td>
<td>SD</td>
<td>System Maintenance</td>
</tr>
<tr>
<td>21</td>
<td>15.5</td>
<td>15.4</td>
<td>22.2</td>
<td>Mean</td>
<td></td>
</tr>
<tr>
<td>3.4</td>
<td>2.7</td>
<td>3.5</td>
<td>6.07</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>4</td>
<td>4.5</td>
<td>7.75</td>
<td>Mean</td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>1.5</td>
<td>81.8</td>
<td>4.3</td>
<td>SD</td>
<td></td>
</tr>
</tbody>
</table>

The researcher used the multivariate analysis of variance to test the study hypotheses. Data normality and equality of variances are the preconditions for this test. An assessment of these precognitions showed that data distribution is normal in all the four groups and the variances are equal in all the variables in the four categories. Table 2 presents the results of the multivariate analysis of variance on family environment and its subscales in four groups.

<table>
<thead>
<tr>
<th>Statistical power</th>
<th>Significance level</th>
<th>p</th>
<th>F</th>
<th>Mean square</th>
<th>Degree of freedom</th>
<th>Sum of squares</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td>0.339</td>
<td>0.001</td>
<td>13.017</td>
<td>947.433</td>
<td>3</td>
<td>2842.3</td>
<td>Family Environment</td>
</tr>
<tr>
<td>0.982</td>
<td>0.228</td>
<td>0.001</td>
<td>7.492</td>
<td>49.946</td>
<td>3</td>
<td>149.838</td>
<td>Family Relationship</td>
</tr>
<tr>
<td>0.996</td>
<td>0.269</td>
<td>0.001</td>
<td>9.314</td>
<td>256.983</td>
<td>3</td>
<td>770.95</td>
<td>Personal Growth</td>
</tr>
<tr>
<td>0.989</td>
<td>0.243</td>
<td>0.001</td>
<td>8.125</td>
<td>73.013</td>
<td>3</td>
<td>219.038</td>
<td>System Maintenance and Change</td>
</tr>
</tbody>
</table>
The results presented in Table 2 show that the difference between the four groups in family environment and its three dimensions is significant (p=0.001). The effects of grouping on family environment and the dimensions of family relationship, personal growth and system maintenance are equal to 33.9, 22.8, 26.9, and 24.3 percent, respectively. In other words, 33.9 percent of the scores of Family Environment, 22.8 percent of family relationship, 26.9 percent of personal growth, and 24.3 percent of system maintenance are related to group membership. Statistical capacity in all the variables is greater than 0.9 which is indicative of the excellent precision of the test and the sufficiency of the sample size to evaluate the research hypotheses. In conclusion, we can say that the first research hypothesis is confirmed.

With differences confirmed between the four groups, the researcher conducted paired comparisons. The results showed significant differences in the variable of family environment between healthy female controls and female patients (p=0.001), healthy female controls and male patients (p=0.001), female patients and healthy male controls (p=0.001). However, there were no significant differences between healthy female controls and healthy male controls and between female and male patients. There were also significant differences in the variable of family relationship between healthy female controls and female patients (p=0.001), female patients and healthy male controls (p=0.001), female and male patients (p=0.035), and healthy male controls and male patients (p=0.035). There were also significant differences in the mean scores of personal growth and system maintenance between healthy female controls and female patients (p=0.001), healthy female controls and male patients (p=0.001), female patients and healthy male controls (p=0.001), and male patients and healthy male controls (p=0.001). Table 3 presents the results of the multivariate analysis of variance on family environment and its subscales in male and female groups.

**Table 3 - Results of the multivariate analysis of variance on family environment and its subscales in male and female groups**

<table>
<thead>
<tr>
<th>Statistical power</th>
<th>Significance level</th>
<th>p</th>
<th>F</th>
<th>Mean square</th>
<th>Degree of freedom</th>
<th>Sum of squares</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.05</td>
<td>0.001</td>
<td>0.983</td>
<td>0.001</td>
<td>0.05</td>
<td>1</td>
<td>0.05</td>
<td>Family Environment</td>
</tr>
<tr>
<td>0.385</td>
<td>0.035</td>
<td>0.096</td>
<td>2.846</td>
<td>23.113</td>
<td>1</td>
<td>23.113</td>
<td>Family Relationship</td>
</tr>
<tr>
<td>0.069</td>
<td>0.002</td>
<td>0.686</td>
<td>0.165</td>
<td>6.05</td>
<td>1</td>
<td>6.05</td>
<td>Personal Growth</td>
</tr>
<tr>
<td>0.095</td>
<td>0.005</td>
<td>0.533</td>
<td>0.392</td>
<td>4.513</td>
<td>1</td>
<td>4.513</td>
<td>System Maintenance</td>
</tr>
</tbody>
</table>

The results presented in Table 3 show that there are no significant differences between the sexes in the variables of family environment and its three dimensions. The significance level for all the relationships is greater than 0.05. The impact of gender on family environment, and the dimensions of family relationship, personal growth, and system maintenance is equal to 0.1, 3.5, 0.2, and 0.5 percent, respectively, which is very low and insignificant. In conclusion, we can say that the second hypothesis is rejected.

**DISCUSSION AND CONCLUSIONS**

The results of the statistical analyses on the first research hypothesis indicate that there are significant differences between healthy controls and patients with gender identity disorder in the variable of family environment. Such that there were significant differences between the mean scores of the four groups in the variable of family environment and its three dimensions (p=0.001). The first research hypothesis is thus confirmed. The findings of the present study are consistent with the findings of studies by Khodayarifard and Abedini (2003), Ahmadi (2004), Najjar Pourostadi (2008), and Rozhberg and Kidder (1992) who examined the relationship between family environment and gender identity disorder. Also, the results of this study corroborate the results of studies by Mehrabu (1979-95), Razmi (2004), Rezaee et al. (2007), Asgari et al. (2007), Biller (1974), Mead & Rekers (1979), Rekers, Mead, Rosen and Bringham (1983), Sherman (1985), Zucker (1985), Coates (1992) Rekers and Kilgus (1995), Rekers (1995), Zucker and Bradley (1995), Bratel and Haring (1997), Cohen-Kettenis et al. (1999), Dicicglie (2000), Alanko et al. (2003), and Jeffreys (2005) who studied the role of the family in connection with GID in terms of unfavorable family conditions, cohesion and flexibility, functioning, power structure, violence and insecurity, growth interaction pattern, child-parent emotional connection, absence of one of the parents, dominance of one of the parents, inflexible and tenacious patterns in the family. Therefore, considering consistency in the results of this study and those of the above-mentioned studies, it can be concluded that there are significant differences between patients with gender identity disorder and healthy controls.
in terms of family environment. The results of statistical analyses on the second hypothesis indicate that there is no significant difference between male and female patients with gender identity disorder in the variable of family environment. In other words, the difference between the two gender groups was not significance in the variable of family environment and any of its three dimensions. The significance level for all the relationships is greater than 0.05. The impact of gender on family environment, family relationship, personal growth, and system maintenance and change is equal to 0.1, 3.5, 0.2, and 0.5 percent, respectively. This impact is very low and insignificant. The second hypothesis is thus rejected. Considering the fact that no study in the literature review directly compared male and female patients with gender identity disorder in the variable of family environment, we need to consider and explain this finding with greater caution.

As the results of studies by Fazelinia (2001) and Bakhshipour Roodsari (2001) indicate, the family can be a starting point for pathological social issues and psychological problems and disorders. Healthy forms of relationship in the family and child-parent communication patterns are the source of stability and health for family members. Therefore, the family environment is the first and most enduring factor in the identity formation of children and adolescents and provides the psychological and social contexts for their growth. One of the most important problems of the modern society today is gender-related behavioral abnormalities in children for various reasons such as changing cultural patterns and communication technology developments. Studies have shown that children of families who perform well in the sexual education of their children and in the development of their sexual identity face fewer physical, psychological and social problems compared with children of indifferent families.

Gender role definition for children and conditioning them with good habits are mainly the responsibility of the parents. In general, parents act as important models for sexual identity formation. (38) The psychological effects of tense family environments during childhood and adolescence appear in the form of various mental disorders. Children who are brought up in families with suspicious, blameful and tense environments face problems in finding their identity and developing relationships with peers. Large numbers of children in the family cause harmful conditions. Large families have fewer opportunities to engage in healthy recreation. As a result of this deprivation, teenagers seek adventure, identity and self-expression. (39) In the event of a disorder, we need to consider the family as an integrated whole or system of mutually interconnected components which above all affects individual behavior – a system which forms not only adaptive and normal behaviors but also can lead to abnormal behaviors.

SUGGESTIONS
It is recommended that future researchers conduct a comprehensive study with a larger sample to examine the effects of family on the occurrence of GID in male and female patients with GID so that we can generalize the results to a broader target population with more confidence.

REFERENCES


