Introduction

The incidence of attention-deficit/hyperactivity disorder (ADHD) has been reported to be between 3% - 6% among seven to twelve-year-old children in Iran (1). Children with ADHD may have inappropriate levels of inattention, impulsivity, and hyperactivity. They tend to show higher than average rates of non-compliance and are at risk of developing comorbid disruptive behavior problems and internalizing problems (2). Minuchin’s theory (1985) suggests that ADHD in children may lead to a greater marital conflict. In addition, marital dissatisfaction may be associated with increased family conflict (3).

One factor that may contribute to the development of co-morbid problems among ADHD children is the lack of agreement among parenting values, beliefs, and practices, which could result in marital dissatisfaction. This issue is also known as parental inconsistency. However, the effects of marital satisfaction have not been completely examined among families with ADHD children especially in comparison with normal children. Marital satisfaction refers to the couples’ satisfaction on adjustment and coordination about the way of organizing their married life including the way to spend leisure time, sharing housework, relationship with others, and showing affection and feelings, respectively (4).

Milwaky and Biderman’s study of the families of children with ADHD in the USA found that families of children with ADHD had less affective attachment and more family conflicts and struggles. Moreover, less mental stability, higher rate of divorce, more house moving and job changes were reported among such families (4). Studies have shown that ADHD especially when it has co-morbidity with conduct disorders is associated with more family tension, struggle, mental pressure in the family, and lower efficacy in bearing of children. These issues could be associated with marital satisfaction. A stressful family setting could also increase ADHD among children with this problem (5).

A recent study of 200 Iranian parents of children with ADHD and 200 parents of normal children showed that the level of marital satisfaction (strongly agree level) was 2.8% lower among parents of ADHD (6).
also be surrounded by low income and low economic status, which negatively impacts ADHD in children. However, there is a paucity of study on this issue in Iran. To partly address this gap in the literature, the present report aimed to preliminarily investigate the components of marital satisfaction among mothers of children with ADHD.

3. Materials and Methods

Thirty-five mothers of children with a diagnosis of ADHD (group 1) and 35 mothers of normal children (group 2) who had been admitted an outpatient psychiatric division of a hospital for children in Tehran, Iran, during year 2013, were randomly selected by convenience sampling. Eligibility criteria included: 1) having children aged six to twelve years old, 2) diagnosis of ADHD based on the diagnostic and statistical manual of mental disorders (DSM)-IVTR criteria (7) (The diagnosis of ADHD was approved by the psychiatrist of the center), 3) Signing consent form by mothers for study participation, 4) lack of divorce history, 5) lack of separation of parents, and 6) having at least elementary education for mothers. Exclusion criteria included: 1) history of serious physical illness, mental retardation and other psychiatric disorders.

Interviews were conducted individually and participants were assured of the confidentiality of interviews and completing the questionnaires. An identification code was included on each questionnaire. Participants were ensured that discontinuing participation in the study would not affect their treatment and service utilization. A demographic checklist was used to collect baseline data on age, gender, education, socio-economic status, and family's monthly income, number of children in the family, and details of history of psychiatric and physical disorders among children and their parents.

Golombok Rust inventory of marital satisfaction (GRIMS) is a valid international scale to assess marital satisfaction and measure couples’ marital problems in the following areas: sensitivity, care, commitment, faithfulness, prosperity, cooperation, sympathy, affection, trust, security, sincerity, adjustment and empathy. The GRIMS is one of the most frequently used tools to measure marital satisfaction (8). In Besharat’s study (2003), Cronbach’s Alpha (reliability) was 92% for women and 94% for their spouses. Pretest-post test assessment within two weeks found that the reliability for the whole questionnaire was 94% (9). A two-week pre-test, post-test assessment of the questionnaire on 15 mothers showed a high reliability of 94% to meet the study aims. The validity of the questionnaire was also obtained from reviewing previous studies (9).

After signing the consent forms, and meeting all inclusion criteria to enter the study, demographic information was collected by a checklist. The GRIMS was then completed to assess marital satisfaction among mothers. Data was analyzed by performing descriptive statistics and independent t-test using the SPSS software (version. 21).

4. Results

Twenty-seven mothers had boys and eight mothers had girls in each group. The age range of the children was between six and twelve years old. The majority of mothers in the two groups were housewives and the family’s monthly income ranged between three and six million Rials. The majority of mothers in group one (34.2%) had 12 years of education while the majority of mothers in group two (45.7%) had less than 12 years of education (Table 1).

Table 1. Demographic Information of the Participants (n = 70)

| Variable                  | Group 1 | Group 2 | P Value |
|---------------------------|---------|---------|---------|
| Gender                    |         |         | 0.121   |
| Male                      | 27 (77.14) | 27 (77.14) |
| Female                    | 8 (22.86)  | 8 (22.86)  |
| Age range, y              | 6-12 | 6-12 | 0.112   |
| Mothers’ job status       |         |         | 0.126   |
| Housewife                 | 26 (74.3)  | 26 (74.3)  |
| Employed                  | 9 (25.7)   | 9 (25.7)   |
| Monthly income            |         |         | 0.133   |
| < 3 million Rials         | 7 (20)    | 5 (14.3)   |
| 3-6 million Rials         | 17 (48.6) | 17 (48.6)  |
| > 6 million Rials         | 11 (31.4) | 13 (37.1)  |
| Education, y              |         |         | 0.127   |
| < 12                      | 11 (31.4) | 16 (45.7)  |
| 12                        | 12 (34.2) | 10       |
| 12-14                     | 1 (2.8)   | -        |
| > 14                      | 11 (31.4) | 9        |

Values are expressed as No. (%).

The mean scores of the two groups were compared for the Golombok Rust Inventory of marital satisfaction (GRIMS). The mean score of group one was 29.11 ± 1.35 while the mean score of group two was 25.02 ± 12.79, which indicates that there was no significant difference between the scores of the two groups in marital satisfaction (P = 0.162). The mean score of GRIMS among employed mothers was 22.27 ± 10.71, and 28.73 ± 12.3 among mothers who were housewives. The mean score of GRIMS was higher among
Some studies have shown that ADHD is related to marital disturbances (14). In a study on the role of marital conflict and family emotional security on children's physical and psycho-social health, researchers found that marital conflict and family emotional insecurity were related to the lack of children's physical and psychosocial health. As expected, marital conflict inversely influences child emotional security showing the role of marital dissatisfaction in child insecure attachment to parents (15).

On the other hand, this study is in agreement with a study from the USA, which showed that parents of children with ADHD did not have lower marital satisfaction compared with parents of normal children (7). Parents' marital satisfaction plays a crucial role in maintaining life balance and emotional setting. Marital satisfaction is an effective factor that helps a person deal with tensions, and allows better performance during one's lifetime (16).

Marital satisfaction among parents, especially mothers of children with ADHD, needs further research and should be compared with marital satisfaction of parents especially mothers of normal children in more representative samples and in longitudinal studies. Although no significant relationship was found between marital satisfaction and ADHD, yet the study findings showed that marital satisfaction was more common among employed mothers compared with housewives. This study is in contrast with an earlier study, which showed that housewives had more marital dissatisfaction compared with employed women (17). In contrast, in another study, researchers found that employed women had higher marital satisfaction compared with housewives (18).

This finding is likely to be the result of having a routine daily life with no special changes among housewives compared with employed women. Marital dissatisfaction among housewives may influence mothers' behaviors with their children and also accelerate the misbehaviors of children with ADHD. The findings of this study need further research and should be explored in more representative samples.

One other important finding in our study was the relationship between monthly income and marital satisfaction. The study results showed that higher income among mothers was associated with more marital satisfaction. This issue is likely to be the result of higher economic facilities and convenience for these mothers, which could be associated with more comfort and emotional wellbeing. This study is consistent with the study of Frast (2002), who showed that in Tehran financial facilities were associated with more marital satisfaction among women (19).

This subject still deserves further research and could
be emphasized as a factor, which could influence mothers’ behaviors towards children with diagnosis of ADHD. If providing some financial support could result in more marital satisfaction among mothers, therefore, the relationship between this issue and decreasing ADHD symptoms among ADHD children should be studied by further longitudinal studies. In the present report, no relationship was found between marital satisfaction, ADHD and other studied variables such as age.

Although the present study was one of the few Persian studies that emphasized the roles of employment and family income on marital satisfaction among mothers of ADHD children in comparison with mothers of normal children yet there were several limitations. Several characteristics of this study suggest that these results should be interpreted with caution and argue for replication. First, the cross-sectional design of this study limits causal conclusions. Second, the numbers of samples in each group was limited and this issue limits generalizability of the study findings. Moreover, more longitudinal studies are still required to explore marital satisfaction and its components, which influence ADHD among children with diagnosis of this psychiatric disorder in comparison with normal children.

5.1. Conclusions

Research on families with ADHD children has primarily focused on ADHD rather than relational variables; these results point to the need to study the family systems of ADHD children in order to create a more sophisticated understanding of factors that contribute to or prevent the development of co-morbid difficulties such as income and employment.

Acknowledgments

The authors appreciate the cooperation of all mothers that participated in this study.

Footnotes

Authors’ Contribution: Hamid Kachooei conceived and designed the evaluation and drafted the manuscript. Mercedes Samiei participated in designing the evaluation, collected the clinical data and interpreted them, performed the statistical analysis, helped draft the manuscript and revised it. Behrooz Dolatshahi participated in the clinical data collection, helped to draft the manuscript and its revision. Reza Daneshmand participated in designing the evaluation, interpretation of clinical data, and statistical analysis. All authors read and approved the final manuscript.

Declaration of Interests: None.

References

1. Hooshvar P, Behnia F, Khushabi K, Mirzaie H, Rahgozar M. The effect of group training of parents with ADHD children at 4-10 ages on their children’s behavioral disorders. J Rehab. 2009;10:24–30.
2. Barkley RA. Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment. Guilford Publications; 2014.
3. Block JH, Block J, Morrison A. Parental agreement-disagreement on child-rearing orientations and gender-related personality correlates in children. Child Dev. 1981;52:657-74.

4. Yogman MW. Nutrients and newborn behavior: neurotransmitters as mediators?. Nutr Rev. 1986;44 Suppl 7:74-7. [PubMed: 2980860].

5. Johnston C, Mash EJ. Families of children with attention-deficit/hyperactivity disorder: review and recommendations for future research. Clin Child Fam Psychol Rev. 2001;4(3):183-207. [PubMed: 11783718].

6. Mohammadi MR, Farokhzadi F, Alipour A, Rostami R, Dehestani M, Salmanian M. Marital Satisfaction amongst Parents of Children with Attention Deficit Hyperactivity Disorder and Normal Children. Iran J Psychiatry. 2012;7(3):120-5. [PubMed: 23139693].

7. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (4th ed.); 2000.

8. Wilkinson I. Child and Family Assessment: Clinical Guidelines for Practitioners. Psychology Press; 1998.

9. Besharat MA. Relation of attachment style with marital conflict. Psychol Rep. 2003;92(3 Pt 2):1135-40. doi: 10.2466/pr0.2003.92.3.c.1135. [PubMed: 12939312].

10. Anastopoulos AD, Guerement DC, Shelton TL, DuPaul GJ. Parenting stress among families of children with attention deficit hyperactivity disorder. J Abnorm Child Psychol. 1992;20(5):503-20. [PubMed: 1487593].

11. Cilli AS, Kaya N, Bodur S, Ozkan I, Kueur R. A comparative analysis of the psychological symptoms observed in the working women and housewives. Public Health Branch. 2006.

12. Anastopoulos AD, Shelton TL, DuPaul GJ, Guerement DC. Parent training for attention-deficit hyperactivity disorder: its impact on parent functioning. J Abnorm Child Psychol. 1993;21(5):581-96. [PubMed: 8294653].

13. Gmesh E. The families of children with attention deficit and hyperactivity disorder. J Educ Retard Child. 2006;35(1):3-16.

14. Fischer M, Barkley RA, Edelbrock CS, Smallish L. The adolescent outcome of hyperactive children diagnosed by research criteria: II. Academic, attentional, and neuropsychological status. J Consult Clin Psychol. 1990;58(5):580-8. [PubMed: 2254504].

15. Ghareshbaghy F, Aguilar-Vafaie M. The Role of Marital Conflict and Family Emotional Security in Children’s Physical and Psychosocial Health. Iran J Psychiatr Clin Psychol. 2010;15(4):359-67.

16. Floyd FJ, Zmich DE. Marriage and the parenting partnership: perceptions and interactions of parents with mentally retarded and typically developing children. Child Dev. 1991;62(4):1434-48. [PubMed: 1786726].

17. Cilli AS, Kaya N, Bodur S, Ozkaf I, Kueur R. A comparative analysis of the psychological symptoms observed in the working women and housewives. Public Health Branch. 2006.

18. Hall DR. Marriage as a pure relationship: Exploring the link between premarital cohabitation and divorce in Canada. J Comparat Fam Stud. 1996;12(4):34-48. [PubMed: 1786726].

19. Frast Z. A study and comparison on control source and marital satisfaction among employed and unemployed women in Tehran. Tehran: Tarbiat-Moalem University; 2002.