

Determination of the anxiety, depression and psychological resilience levels of mothers with children diagnosed with attention deficit hyperactivity disorder

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Abstract

Objective: This descriptive study was carried out for determining the anxiety, depression and psychological resilience levels of mothers with children diagnosed with Attention Deficit Hyperactivity Disorder.

Material and Method: Study population was comprised of mothers with children diagnosed with ADHD who applied to a state hospital in central Gaziantep province for outpatient treatment during April – August 2017, whereas the number of samples was determined as 54 according to power analysis. The study was carried out with 163 mothers. “Sociodemographic Questionnaire”, “Zung Self-Rating Depression Scale”, “Beck Anxiety Scale” and “Psychological Resilience Scale for Adults” were used for obtaining the required data. The data were analyzed using SPSS Windows version 24.0 software.

Results: It was determined that the depression and anxiety levels of mothers with children diagnosed with ADHD are at a low level, while their psychological resilience levels are good. A statistically significant relationship was determined between the mental health state of mothers and the adaptation of the child to the environment and Zung Self-Rating Depression Scale, Beck Anxiety Scale and Psychological Resilience Scale ($p < 0.05$).

Conclusion: It should be kept in mind that having a child diagnosed with ADHD may cause mothers to experience mental issues such as anxiety and depression while also decreasing their psychological resilience. Thus, the importance of carrying out psychological assessments not only for the child but also on the parents with emphasis on mothers should not be ignored during the treatment process.

Keywords: Attention Deficit Hyperactivity Disorder, Mother, Depression, Anxiety, Psychological Resilience, Psychiatric Nursing

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is an important public health issue since it is the most frequent psychiatric disorder during childhood. Its prevalence in the world varies between 8 % to 12 % (1,2). It is indicated that children with ADHD have a more negative relationship with their parents because they are stressful, demanding and insistent resulting in adverse impacts on familial relations as well as the mental states of parents (3). Studies carried out indicate that mothers of children with ADHD experience greater parenthood stress, have less self-confidence with more anxiety and Depression in comparison with mothers of normal children and that their problem solving skills are lower (4,5).

Whereas anxiety and depressive disorders are important psychological disorders that are frequently observed in society with severe impacts on the social and professional functions of individuals resulting in decreased quality of life (6). Studies put forth that lifetime prevalence of depression is 10-25% for females, 5-12 % for males and that females are affected twice more than males (6,7). It is also accepted when anxiety disorders are examined with regard to gender that they are twice more frequent among females than among males (7). Majority of the mothers experiencing psychological disorders in our society are diagnosed but cannot be treated. Untreated mothers may experience many different issues such as lack of the



self-confidence, negative parenthood attitudes, problematic marital relationships, loss of labor, child abuse and child neglect (8). Whereas Psychological Resilience considered as the ability of an individual to adapt to and cope with important stressors such as a personal trauma, threat, familial-relational problems, health issues and economic issues is reduced in psychological disorders such as anxiety and depression (9,10).

Treatable issues of depression and anxiety lead to loss of ability and impairments in health perception thereby reducing the quality of life (11). Early diagnosis and treatment prevents adverse impacts on child development in addition to preventing the mothers from harming themselves and others around them due to increasing depression and anxiety intensities while also strengthening their psychological resilience (8).

It is important that these mothers in the society are diagnosed early on and directed to treatment. Nurses who spend the highest amount of time with the patient, patient relatives and families, who take care of them and with whom the patient and his/her relatives can share their needs and problems as well as psychiatric nurses who have the opportunity to closely monitor and assess the families and the patients play vital roles in this process.

In this study we aimed to determine the anxiety, depression and psychological resilience levels of mothers with children diagnosed with Attention Deficit Hyperactivity Disorder.

Material and Methods

Population and Sample Group

The study population was comprised of mothers of children diagnosed with ADHD who applied to the state hospital in central Gaziantep during April – August 2017 for outpatient treatment. The number of samples was determined as 54 as a result of the power analysis carried out. A total of 163 mothers who meet the study criteria at the time of the study comprised the sample group.

Data Acquisition Tools

Sociodemographic Questionnaire; The sociodemographic questionnaire prepared by the researcher in accordance with literature was comprised of 28 questions. The questions included those on the age, marriage age, marital status, number of children, education level, occupation, income level and mental illness status for mothers of children diagnosed with Attention Deficit Hyperactivity Disorder; the age, profession, education level, economic status of the spouse as well as those on the place of residence of the family, family structure and the age, diagnosed age, school success and environmental adaptation for the diagnosed child.

Beck Anxiety Scale (BAS); It is a self-assessment scale used for measuring the symptoms of anxiety experienced by the individual. The Likert type scale is comprised of 21 items and scored between 0-3. The Turkish reliability and validity study for the scale developed by Beck et al. in 1988 was completed in 1998 by Ulusoy et al. Questions are directed at the individual to determine the level of distress caused by the sense of anxiety in the past

week. Classification is made based on the test scores as light, moderate and severe anxiety. The highest score that can be obtained from the scale is 63. High total scores indicate high anxiety levels or intensity. Anxiety levels have been classified according to scores obtained from BAS as; scores of 0-17 low, scores of 18-24 moderate, scores of 25 and + high anxiety (12). The Cronbach alpha for the scale has been calculated as 0,909 in the present study.

Zung Self-Rating Depression Scale (ZDS); The original Zung Self-Rating Depression Scale has been developed by Zung in 1965 for evaluating depression symptoms. The reliability and validity study for the scale was carried out by Ceyhan et al. The items in the scale include the affective, cognitive, behavioral and physiological dimensions of depression. Comprised of 20 items, the scale includes 10 non-reverse and reverse (scored reversely) questions. It is a Likert type scale for which each item is evaluated in four levels as; never or very rarely, sometimes, frequently and most of the time. Scale items numbered 1., 3., 4., 7., 8., 9., 10., 13., 15. and 19 are non-reverse, whereas items 2., 5., 6., 11., 12., 14., 16., 17., 18., and 20 are reverse. Non-reverse items in the scale are scored from 1 to 4, whereas reverse items are scored from 4 to 1. The item scores are then summed up and the raw score acquired from the scale is transformed into a value out of 100. The lowest raw score that can be obtained from the scale is 20 which corresponds to an SDS (Depression score) of 25 out of 100 whereas the highest raw score is 80 corresponding to an SDS score of 100. The following formula is used for transforming the raw scores into a value out of 100:

Index = (Raw Score Total / Maximum Score of 80) x 100

Scores of 50 % or above indicate depression. When the cutoff scores are examined, scale scores of less than 50 % is considered as normal; between 50-59 % as light depression; 60-69 % indicates moderate depression; whereas scores that are above 70 % are defined as severe depression (13,14). The Cronbach alpha of the scale was determined as 0,778 in this study.

Resilience Scale for Adults (RSARSA); The scale originally entitled as 'Resilience Scale for Adults' has been developed in 2005 by Friborg et al. and the Turkish validity and reliability for the scale has been carried out in 2011 by Nejat Basım and Fatih Çetin. The scale comprised of 33 questions has been prepared to eliminate acquaintance bias and enables any desired assessment by way of its 5-point Likert structure with 5 boxes across the responses. If psychological resilience is expected to increase with decreasing scale scores, the answer boxes should be evaluated from left to right as 54321. If it is desired that psychological resilience increases with increasing scores, answer boxes should be evaluated from left to right as 12345 (10). The answer boxes were evaluated from left to right as 12345 with the expectation that psychological resilience will increase with increasing scores. The Cronbach alpha coefficient for the original scale was 0,86 and it was determined in the present study as 0,87.

Statistical Analysis

Shaphirowilk test was used for testing whether the data fit normal distribution, Student t test was used for comparing characteristics with normal distribution in 2 independent groups, whereas Mann Whitney u test was used for comparing characteristics without normal distribution in 2 independent groups. Moreover, one way analysis of variance (ANOVA) and LSD multiple comparison tests were used for comparing numerical data in more than 2 independent groups for characteristics with normal distribution, while Kruskal Wallis test and All pairwise multiple comparison test were used for characteristics without normal distribution. The relationships between numerical variables were tested by way of Spearman correlation coefficient. Cronbach alfa coefficients were calculated for testing validity and reliability. Mean±standard deviation was calculated for numerical variables as descriptive statistics whereas number and % values were provided for categorical variables. SPSS Windows version 24.0 software was used for statistical analysis and $p < 0.05$ was accepted as statistically significant.

Ethical Principles of the Study

Study data were acquired from mothers of children diagnosed with ADHD who volunteered to participate in the study after all written permits were taken from the Gaziantep University Clinical Studies Ethics Council (2017/87) and the Public Hospitals Union under the Ministry of Health related to the study. The mothers who accepted to participate in the study were asked to sign the informed consent forms after they were informed of the purpose of the study and that their information will not be disclosed. Permits were also obtained for the scales used from their respective owners.

Results

It was determined that 30.1 % of the mothers who participated in the study are in the 30-34 age interval, 6.1 % are single, 34.4 % have 2 children, 49.1 % are primary school graduates, 82.8 % are housewives, 76.1 % do not have personal incomes, whereas it was determined that 38.0 % of the fathers are primary school graduates, 35.6 % are aged 40 and above, 52.8 % are self-employed, 58.9 % have an income level ranging between 1300-3000tl, that 23.3 % of the families do not have social security, 4.9 % live in districts, 9.8 % have an extended family structure, that 22.7 % of the mothers smoke/consume alcohol, that 6.7 % of the mothers and 9.8 % of the fathers are diagnosed with ADHD, that 17.2 % of the other children in the family are diagnosed with ADHD, that 27.6 % of the mothers have a mental illness, that of those mothers with mental illness 16 % suffer from depression, whereas 11 % have anxiety disorder, that 71.2 % do not receive psychological support for themselves regarding the state of their child, that 6.7 % do not consult to psychologists, special educators, psychological counselors, mental health specialists and that 33.74 % spend their spare time playing with their child. It was determined that 36.8 % of the children diagnosed with ADHD do not come to their controls regularly, 19.6 % are not successful and that 28.8 % have bad adaptation with their environment. The total score average for the Zung Self-Rating Depression Scale Ham (scale total score) for mothers of children diagnosed with ADHD was determined as 40.56 ± 8.93 (min=24.00, max=73.00), the total score average for the Zung Self-Rating Depression Scale SD (total scale score transformed to 100 system) was determined as 50.70 ± 11.17 (min=30.00, max=91.25). The Beck Anxiety Scale total score average for the mothers was determined as 17.41 ± 11.05 (min=1.00, max=57.00). Psychological Resilience Scale (RSA) total score average was calculated as 116.68 ± 19.74 (min=48.00, max=157.00) (Table 1).

Table.1. Zung Self-Rating Depression Scale, Beck Anxiety Scale and, Psychological Resilience Scale Total Score Averages

Scales	Min-Max	Avg.-Std.
Zung Self-Rating Depression Scale Ham	24.00-73.00	40.56 ± 8.93
Zung Self-Rating Depression Scale SD	30.00-91.25	50.70 ± 11.17
Beck Anxiety Scale	1.00-57.00	17.41 ± 11.05
Psychological Resilience Scale	48.00-157.00	116.68 ± 19.74

Table.2. Correlation between Zung Self-Rating Depression Scale, Beck Anxiety Scale and Psychological Resilience Scale

Scales	Correlation Values	Zung Self-Rating Depression Scale	Beck Anxiety Scale	Psychological Resilience Scale
Zung Self-Rating Depression Scale	r	1.000	0.635**	-0.572**
	p		0.001	0.001
Beck Anxiety Scale	r		1.000	-0.382**
	p			0.001

r: Spearman correlation coefficient, ** statistically significant at a level of $r = 0.001$, * statistically significant at a level of $r = 0.005$

A strong and positively significant correlation was determined between the Zung Self-Rating Depression Scale and Beck Anxiety Scale ($r=0.635$, $p: 0.001$). There was a negative and moderate correlation between the Zung Self-Rating Depression Scale and Psychological Resilience Scale ($r=-0.572$, $p: 0.001$). A moderate and negative statistically significant correlation was observed between the Beck Anxiety Scale and Psychological Resilience Scale ($r=-0.382$, $p: 0.001$) (Table 2). A statistically significant difference was determined between the environmental adaptation of children diagnosed with ADHD and the mental illness states of the mothers and total score averages for ZDS, BAS and RSA ($p<0.05$). A statistically significant difference was determined between the school success levels of the children and the ZDS and RSA total score averages of the mothers ($p<0.05$); a statistically significant difference was observed between the family structure and the ZDS and BAS total score averages of the mothers ($p<0.05$); a statistically significant difference was observed between the father being diagnosed with ADHD and the ZDS and RSA total score averages of the mothers ($p<0.05$); a statistically significant difference was determined between the income level of the father and the ZDS and RSA total score averages of the mothers ($p<0.05$);

a statistically significant difference was determined between whether mothers receive psychological support for themselves regarding the state of their child and the ZDS and BAS total score averages of the mothers ($p<0.05$); a statistically significant difference was determined between the income levels of the mothers and their RSA total score averages ($p<0.05$); a statistically significant difference was observed between the education level of the mothers and their RSA total score averages ($p<0.05$); a statistically significant difference was determined between whether mothers receive psychological support for themselves regarding the state of their child and their BAS total score averages ($p<0.05$); a statistically significant difference was determined between the profession of the mothers and their RSA total score averages ($p<0.05$); a statistically significant difference was determined between the education level of the fathers and the RSA total score averages of the mothers ($p<0.05$); a statistically significant difference was determined between the mental illness diagnosis of the mothers and their RSA total score averages ($p<0.05$); a statistically significant difference was determined between whether mothers smoke/consume alcohol and their ZDS total score averages ($p<0.05$) (Table 3).

Table.3: Comparison of Sociodemographic Data with Zung Self-Rating Depression Scale, Beck Anxiety Scale and Psychological Resilience Scale Total Score Averages

Attributes	Zung Self-Rating Depression Scale	Statistics	Beck Anxiety Scale	Statistics	Psychological Resilience Scale	Statistics
Child's Adaptation to the Environment						
Good (50)	45.92±8.42	f=9.962	14.06±10.15	f=4.613	120.06±15.37	f=3.243
Moderate (66)	50.89±11.77	p=0.001***	17.59±11.71	p=0.011*	118.40±19.96	p=0.042*
Bad (47)	55.53±10.93		20.72±10.14		110.68±22.46	
Mental Illness State of the Mother						
Yes (45)	56.22±12.03	z=-3.708	23.93±10.55	z=-5.333	106.60±20.33	z=-4.106
No (118)	48.60±10.11	p=0.001***	14.92±10.23	p=0.001***	120.53±18.17	p=0.001***
School Success of the Child						
Successful (42)	48.21±11.55	x²=6.093	17.33±12.67	x²=0.519	120.45±16.96	x²=3.084
Moderate (59)	50.95±10.38	p=0.048*	17.59±10.16	p=0.772	116.18±15.90	p=0.049*
Not successful (32)	54.60±11.74		18.59±11.80		110.06±21.91	
Family Structure						
Nuclear Family (147)	49.86±10.98	z=-2.903	16.61±10.85	z=-3.023	117.87±19.21	z=-1.922
Extended Family (16)	58.43±10.11	p=0.004*	24.68±10.47	p=0.003*	105.81±21.84	p=0.055
ADHD Diagnosis State of the Father						
Yes (16)	57.81±11.44	z=-2.666	21.00±13.88	z=-0.927	106.75±24.98	z=2.143
No (147)	49.93±10.90	p=0.008*	17.92±10.68	p=0.354	117.76±18.87	p=0.034*
Income Level of the Father						
No income (8)	59.21±10.56	x²=9.772	24.12±12.48	x²=6.045	107.50±16.66	x²=12.205
0-1300£ (27)	52.54±9.63	p=0.021*	19.55±11.53	p=0.109	112.14±18.50	p=0.007*
1301-3000£(96)	50.82±11.42		17.14±10.93		115.14±19.41	
3001£ and above (32)	46.67±10.51		14.71±10.10		127.43±19.11	
State of the Mother Receiving Psychological Support for their Child						
Yes (47)	54.28±12.86	z=-2.369	22.68±12.59	z=-3.786	115.44±24.17	z=-0.082
No (116)	49.25±10.11	p=0.018*	15.27±9.63	p=0.001***	117.18±17.73	p=0.934

Income Level of the Mother						
No income (124)	51.63±10.43	$\chi^2=6.572$ p=0.087	17.58±10.11	$\chi^2=3.523$ p=0.318	112.55±18.50	$\chi^2=27.528$ p=0.001***
0-1300₺ (13)	49.61±12.91		20.38±14.85		123.15±17.16	
1301-3000₺ (10)	50.75±17.40		16.00±15.94		124.10±19.22	
3001₺and above (16)	44.37±9.42		14.56±11.55		138.81±14.46	
Education Level of the Mothers						
Illiterate+primary school	52.11±11.51	$\chi^2=4.344$ p=0.227	18.21±10.62	$\chi^2=6.358$ p=0.095	111.25±17.79	$\chi^2=29.562$ p=0.001***
Secondary school	52.11±10.65		20.31±13.55		113.68±16.33	
High school	47.15±9.96		14.44±8.14		122.44±17.51	
University	47.90±11.02		14.32±11.03		132.68±22.43	
State of Mothers Applying to Psychologists, Special Educators, Psychological Counselors, Child Mental Health Specialists for their Child						
Yes (152)	50.95±11.02	z=-1.059 p=0.289	17.76±10.87	z=-2.109 p=0.035*	116.65±20.19	z=-0.007 p=0.995
No (11)	47.27±13.14		12.59±12.82		117.09±12.56	
Profession of the mother						
Housewife (135)	51.39±10.65	$\chi^2=5.969$ p=0.051	17.82±10.56	$\chi^2=4.570$ p=0.102	113.63±18.20	$\chi^2=22.881$ p=0.001*
Private sector employee (10)	53.00±15.87		19.20±15.76		120.70±25.10	
Public employee (18)	44.23±10.50		13.33±11.48		137.33±15.33	
Education Level of the Fathers						
Illiterate+primary school (65)	51.65±10.55	$\chi^2=2.015$ p=0.569	17.84±10.41	$\chi^2=2.005$ p=0.571	109.69±19.24	$\chi^2=13.901$ p=0.003*
Secondary school (29)	49.48±10.20		16.79±10.08		120.41±15.07	
High school (36)	51.84±12.43		18.97±13.42		119.97±18.05	
University (33)	48.67±11.84		15.39±10.39		123.60±22.44	
Mental Disease Diagnosis of the Mother						
Depression (26)	58.94±12.04	t=1.965 p=0.056	24.46±10.65	t=-0.765 p=0.444	100.34±19.56	t=0.408 p=0.011*
Anxiety disorder (18)	51.87±11.25		23.11±10.95		116.11±18.64	
Age of the father						
18-24 (0)	-	$\chi^2=4.433$ p=0.218	-	$\chi^2=2.404$ p=0.493	-	$\chi^2=7.953$ p=0.047*
25-29 (15)	50.66±8.88		16.00±10.07		122.33±16.48	
30-34 (40)	51.75±11.02		19.60±13.08		115.17±19.63	
35-39 (50)	52.27±11.98		18.44±11.68		111.08±22.63	
40 and above (58)	48.64±11.02		15.37±8.88		121.10±17.41	
Smoking/Alcohol Use State for the Mothers						
Yes (37)	55.37±11.75	z=-2.841 p=0.004*	18.89±10.42	z=-1.233 p=0.218	112.35±18.91	z=-1.648 p=0.099
No (126)	49.33±10.66		16.97±11.23		117.96±19.87	

Discussion

It was determined in our study that the depression and anxiety of the mothers are at a low level and that they have good psychological resilience. It was observed upon evaluating the correlation between the scales that psychological resilience levels are low for mothers with high depression and anxiety levels. Xia W et al. (2015) carried out a study as a result of which it was put forth that mothers of children diagnosed with ADHD experience anxiety and depressive symptoms more; Durukan et al. (2008) reported in their study that the depression and anxiety levels are high for mothers of children diagnosed with ADHD; where as McAuley et al. (2009) put forth as a result of their study that the anxiety and depression ratios of the mothers are high (15,16,17). While Şimşek et al. (2012) identified that mothers of children diagnosed with ADHD have higher psychiatric symptoms, Vincent Chin et al. (2014) concluded that mothers of children diagnosed with ADHD have higher depression levels (3,18).

No study could be determined during literature surveys carried out which evaluate the correlation between the depression, anxiety and psychological resilience of mothers of children diagnosed with ADHD.

It was determined in our study that the depression and anxiety levels are high for mothers with mental illness. ADHD is evaluated as a significant stressor for the family and especially for the mothers (14). Studies carried out indicate that psychiatric issues are observed more frequently in families of children diagnosed with ADHD (19). It was determined that the psychological resilience levels of mothers with anxiety disorder are lower in comparison with mothers diagnosed with depression. McCormick et al. (1995) carried out a study as a result of which major depression was determined at a ratio of 17,9 % in mothers of children diagnosed with ADHD, whereas minor depression ratio was determined as 20,5 % (20). Karakoç Demirkaya et al. (2015) carried out a study

evaluating the disease burden in the families of cases diagnosed with ADHD as a result of which it was determined that 15,6 % of the mothers have a psychiatric disease story (21).

It was determined in the study that bad environment adaptation of children diagnosed with ADHD leads to increased depression and anxiety levels in their mothers while also decreasing their psychological resilience. Çakaloz et al. (2007) carried out a study as a result of which it was reported that social issues are observed frequently in both the ADHD and ADHD+KOKGB group (22). McAuley et al. (2009) put forth in their study that the mothers of children diagnosed with ADHD who experience more issues related with behavior problems and environment adaptation suffer more from anxiety and depression (17). It is observed that the results of this study are in parallel with those of others. It is reported that children with ADHD frequently experience problems in their relations with friends and peers, that their relationships with parents and siblings are also affected adversely and that it affects the mother more drastically leading to psychological issues since the mother plays a more effective role in childcare (23).

It was determined in our study that the depression levels are higher for mothers of students with low academic success, whereas their psychological resilience levels are lower. It is reported that children with ADHD experience learning difficulties and display academic failure, weak performance and educational issues (24,25). Biederman et al. (1996) carried out a study as a result of which it has been presented that children with ADHD have lower reading and arithmetic test scores, that their rates of repeating the class increase and that there are increases with regard to the use of corrective academic services and placement in special education classrooms (26). Whereas Çakaloz et al. (2007) carried out a study in which it failure at school was observed more in both the ADHD and ADHD+KOKGB groups (22). Özyurt et al. (2015) carried out a study indicating that issues related with children diagnosed with ADHD such as difficulties with homework, not being able to protect their objects, failure to tidy up his/her room, difficulties in carrying out their duties at home increase the parenthood stress of mothers as well as their anxiety levels (27).

It was determined in this study that while ADHD diagnosis in mothers does not have any impact on Anxiety Depression and psychological resilience, having a spouse and child diagnosed with ADHD increases the depression levels of mothers while decreasing their psychological resilience. It is reported that ADHD diagnosis in parents increases the risk of disease in children by eight times and that the disease has a strong tendency for genetic transition (2). Şimşek et al. (2012) carried out a study as a result of which it has been reported that psychiatric symptoms and ADHD symptoms are at high levels in both mothers and parents of children diagnosed with ADHD (3). McAuley et al. (2009) reported in their study that ADHD symptoms have a negative impact on mothers and that the mothers are affected not only by their own ADHD symptoms but also those by those of their children and

spouses leading to chaos in the house and stress in the mothers (17).

The depression ratio of mothers without any income was determined to be high in our study, while their psychological resilience levels were determined to be low. It was determined that the mothers with high income levels have high psychological resilience. It has been reported that ADHD is observed frequently among socioeconomically disadvantaged groups in many regions of the world (28). Russell et al. (2015) put forth that ADHD symptoms are affected by financial problems in the household at a ratio of 27,8 % and that family stress increases thus making the symptoms worse (29). Greene et al. (2002) carried out a study as a result of which it was determined that psychosocial factors and low socioeconomic level increases the risk of ADHD in children (30). It is indicated that socioeconomic difficulties lead to the onset of depression with an impact on its prognosis and that it increases the frequency of additional diagnoses (31). Yağmur and Türkmen (2017) carried out a study for determining the perceived stress and psychological resilience levels of family members providing care to patients with a mental illness as a result of which it has been reported that perceived stress is higher in the relatives of patients with low income and that the psychological resilience levels are lower ($p < 0.005$) (32).

It was determined in the present study that mothers with an extended family structure have higher depression and anxiety levels in comparison with those having a nuclear family structure. Çöp et al. (2017) determined in their study that 82,8 % of the children diagnosed with ADHD have a nuclear family structure (33). Aktepe (2011) reported in their study that the family structure is nuclear for 73,9 % and extended for 15% (34). No study was observed during the literature surveys carried out which have focused on the family structure of children diagnosed with ADHD and the stats of depression and anxiety in mothers.

It was determined in our study that mothers who receive psychological support regarding the state of their child have higher levels of depression and anxiety. No study was observed in literature that examines mothers of children diagnosed with ADHD receiving psychological support regarding the state of their children. The level of knowledge and awareness consciousness of mothers are tried to be improved during psychological support. Increase in awareness consciousness and access to knowledge may lead to an increase in the levels of anxiety of mothers related with their children. It is considered that failure of the mothers to cope effectively with increased levels of anxiety will lead to depression.

It was determined that the education levels of the mothers and fathers who participated in this study are at illiterate and primary school level, that the depression and anxiety levels are high for illiterate participants and that their psychological resilience levels are low. Whereas it was determined that mothers with university graduate spouses have high psychological resilience levels. The education level of parents is reported as a significant risk factor in psychopathology development in children. It is reported

that the child rearing methods tend to be less traditional and more positive with increasing education levels of mothers and that behavioral and emotional issues are observed less in these children (20). It was determined as a result of the literature survey carried out in accordance with our findings that the education levels are secondary school and below for majority of the parents in studies by Yıldız et al. (2016), Öztürk et al. (2000), Karakoç Demirkaya et al. (2015), Çakaloz et al. (2007), Çöp et al. (2017) and Özcan et al. (1998) (14,20,21,33,35,36). No study was determined on the impact of the education levels of mothers of children diagnosed with ADHD on the depression and anxiety levels of mothers and it has been reported as a result of a study by Çengelci (2009) on mothers of disabled children that the anxiety levels of mothers increase with decreasing education level (37). Fırat (2016) reported in a study on the parents of autistic children that mental symptom states and anxiety levels of mothers decrease with increasing education level (38).

It was determined in our study that mothers working as public personnel have higher psychological resilience levels in comparison with housewife mothers. Whereas, results indicate to that the psychological resilience levels of mothers working in the private sector are lower in comparison with those of public personnel mothers. A relationship could not be determined between the profession of the father and the depression, anxiety and psychological resilience levels of mothers. It is known that the education levels of the parents have a significant impact on their choice of profession which in turn also has a significant impact on their style of parenting and family relations (39). It was determined as a result of a literature survey that majority of the mothers of children diagnosed with ADHD are housewives (36,39). The results of our study are similar in this respect with the results of other studies in literature. No study was observed in literature that examines the relationship between the depression, anxiety and psychological resilience levels of mothers of children diagnosed with ADHD with regard to their profession and it has been reported as a result of the study by Uğuz et al. (2004) on the professions of mothers of disabled children that parents of disabled children who are unemployed have higher rates of depression (40).

While no relationship was determined in this study between the ages of the mothers and their levels of depression, anxiety and psychological resilience; it was determined that the psychological resilience levels are higher for mothers of children diagnosed with ADHD with the age of their spouse ranging between 35-39 and 40 and above. The results of the present study were similar with those of other studies on the age average of parents of children diagnosed with ADHD (35).

It was determined in this study that 93.3 % of the mothers of children diagnosed with ADHD have applied to psychologists, special educators, psychological counselors, child psychiatry specialists for their children. It is indicated that the problem solving skills of mothers of children diagnosed with ADHD are lower in comparison with those of the mothers of healthy children, that social skills are lower for children with ADHD and their families and hence

they experience difficulties in perceiving, evaluating and reacting properly to social processes. It is indicated that the problem solving skills and strategies of families are important and that counseling is required for increasing the problem solving skills (35,39).

This study has been carried out only on the mothers of children diagnosed with ADHD and impacts have been evaluated only for the mothers which is a significant limitation of our study. Studies including all family members can be carried out for determining the impacts of ADHD on other individuals in the family. The study carried out for the province of Gaziantep can be repeated for other provinces and comparisons can be made.

Conclusion

In conclusion, ADHD is an important public health issue with impacts primarily on the child as well as schools, families and the society. Hence, it is important that them others and the parents should be evaluated during the treatment process in addition to the child.

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KAE, NÖ: Data Collection, Literature Search, Preparation of the article, statistical analysis, **NÖ:** manuscript revision

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