

Child maltreatment and associated factors among children with ADHD: a comparative study

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This study aimed to compare the mothers of children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and the mothers of children with no psychiatric diagnosis with respect to abusive discipline attitudes. One hundred children with ADHD, 25 children with no psychiatric diagnosis, and their mothers answered the questionnaires and open-ended standard questions about the type and frequency of parental abusive discipline. Conners scores of the children were associated with characteristics of the children, maternal characteristics, and maternal use of verbal discipline. Maternal approval scores on verbally abusive disciplinary acts were predicted by maternal past experiences, maternal characteristics and Conners scores of children. Similarly, characteristics of the children and the mothers predicted maternal approval scores on physical disciplinary acts. ADHD symptoms increase the risk of parental verbally and physically abusive discipline. Vice versa, verbal discipline also predicts increased ADHD symptoms. Understanding the risk factors may help in developing more effective intervention and prevention programs.

Key words: attention deficit hyperactivity disorder, child abuse, discipline.

Physical, emotional or sexual maltreatment that hinders the optimal development of the child can be considered as child abuse or neglect. According to the World Health Organization, every year 40 million children, aged below 15 years, throughout the world are being neglected or abused¹. Younger parental age², low parental education^{3,4}, low income^{5,6}, being a mother in adolescence⁷, and parental physical-mental health^{3,8} are among the parental factors frequently indicated to be significant predictors of child maltreatment.

In addition to parental characteristics, some characteristics of children may also lead to higher vulnerability to being physically or emotionally abused⁹. Younger children and children having difficult temperament are significantly more likely to be the victims of physical violence than older children and females^{10,11}. Behavioral problems may also be risk factors for being a victim of abusive disciplinary attitudes.

The frequency of Attention Deficit Hyperactivity Disorder (ADHD) is reported as 14-46% among abused children^{12,13}. A retrospective study conducted in Turkey investigated the demographic and clinic features of 54 emotionally, physically, and sexually abused children, and suggested that 22.2% of all abused children were diagnosed with ADHD¹⁴.

The comorbidity of ADHD and disruptive behavior disorders is shown to increase the risk of abuse¹⁵. Accordingly, Ford et al.¹⁵ indicated that the ratio of being physically abused increased from 25% to 43-75% when Oppositional Defiant Disorder (ODD) was co-morbid to ADHD¹⁵. Similar findings were reported by Urquiza¹⁶, who reported that the prevalence of emotional abuse was 90% among children with comorbid ADHD and ODD, and there was a significant decrease in these ratios when children had pure ADHD¹⁶.

Co-occurrence of ADHD and abuse may be related to some common features of ADHD and

abuse, such as socioeconomic status, parental characteristics, and parental psychopathologies. Parents of children with ADHD were frequently reported to have low socioeconomic status¹⁷ and low social support¹⁸. Parental mental health problems are also known to be associated with both ADHD diagnosis of children and abuse potential of the parents. According to studies investigating the clinical features among parents, prevalence of mental health problems is high in both groups, namely parents of children with ADHD¹⁷ and abusive parents^{19,20}. Parental characteristics of children with ADHD are known to determine how well the mother handles the process and the problematic issues²¹. From the perspective of discipline attitudes, mothers of children with ADHD were shown to be more controlling, authoritarian, and punitive²²⁻²⁴. It should not be ignored that ADHD is shown to be a heritable and neurobiological, neurodevelopment disorder²⁵. It is widely indicated that parents of children with ADHD are likely to show impulse control and attention problems themselves, and impulsivity is a feature that has strong associations with aggressive behavior^{26,27}. However, there are not yet enough studies that explore the factors lying beneath the abusive discipline attitudes among parents of children with ADHD. The few researches conducted in this area investigate either the attitudes or the practices. Similarly, the parental characteristics and characteristics of children are not studied together. However, including characteristics of children and their parents into the same study may be helpful in order to reveal the reciprocal relationship. The aim of this study was to investigate the association between the parental characteristics in children with ADHD and verbal-physical discipline attitudes that can be considered as maltreatment. More specifically, associations among ADHD symptoms, maternal characteristics and discipline attitudes will be studied.

Material and Methods

Participants

There were two main groups of participants, namely the study group and control group. The study group consisted of 100 children diagnosed with ADHD and 100 mothers of these children. The ADHD diagnosis included three subtypes: ADHD Predominantly Inattentive Type (ADD),

ADHD Predominantly Hyperactivity Type (ADHD-H), and ADHD Combined Type (ADHD-C). The study group was taken from among the first applications to Hacettepe University Child and Adolescent Psychiatry Polyclinic. The control group consisted of 25 children having no psychiatric diagnosis according to the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL) and 25 mothers of these children. In all groups, the age range of children included in the study was between 71 and 158 months. The exclusion criteria were diagnosis of a neurological disorder, scores below 80 on all Intelligence Quotient subtypes (Verbal IQ, Performance IQ, and Total IQ), and meeting the criteria of a learning disorder. Other comorbid disorders were included into the study.

Measures

Demographic information form. This form consisted of questions that were prepared with the aim of obtaining information about the demographic characteristics of the participants.

K-SADS-PL. The K-SADS-PL is a semi-structured instrument that was originally developed by Kaufman and colleagues²⁸ and adapted to Turkish by Gökler and colleagues²⁹. The instrument aims to screen psychopathology in children.

Wechsler Intelligence Scale for Children Revised (WISC-R). WISC-R aims to measure the intelligence of children. The scale was developed by Wechsler in 1949³⁰ and revised in 1974³¹ and was studied in Turkish by Savaşır and Şahin³².

Rosenberg's Self-Esteem Scale. The Rosenberg Self-Esteem Scale, which was developed by Rosenberg³³, is a widely used global self-esteem measure, and the Turkish version of the scale was found to be reliable by Çuhadaroğlu³⁴.

Child Depression Inventory (CDI). The Children's Depression Inventory (CDI) for children aged 7 to 17 was devised by Kovacs³⁵ and adapted to Turkish culture by Oy³⁶.

Social Support Appraisals Scale for Children (APP). This inventory evaluates child perception of social support from their families, friends, and teachers. The inventory was developed by Dubow and Ullman³⁷ and revised in 1991 by Dubow and his colleagues³⁸. The Turkish adaptation was made by Gökler³⁹.

Adult ADD/ADHD Diagnostic and Statistical Manual of Mental Disorders (DSM)-IV-based diagnostic screening and rating scale. Adult ADD/ADHD DSM-IV-based diagnostic screening and rating scale was developed by Turgay⁴⁰ and assesses the ADHD symptoms in adulthood.

Conners Parent Rating Scale (CPRS). Conners Rating Scale was developed by Conners in 1969 and after various revisions, the Conners Rating Scales aimed to measure ADHD in children and adolescents through parents' and teachers' ratings of their behavioral problems as well as ODD and Conduct Disorder (CD). The scale includes 48 items⁴¹. The Turkish translation⁴² revealed good validity and reliability coefficients.

Survey of Standards for Discipline. This questionnaire was translated into Turkish by Şimşek Orhon and colleagues⁴³ from Morris and Johnson's questionnaire, the Survey of Standards for Discipline⁴⁴. Forty-three different disciplinary acts were questioned and all items have different scores according to their content.

Beck Depression Inventory (BDI). The BDI is a 21-item four-point Likert-type self-report inventory originally developed by Beck et al.⁴⁵ The inventory aims to assess the depressive symptomatology. Tegin⁴⁶ and Hisli⁴⁷ adapted the BDI into Turkish.

The Turkish Ways of Coping Inventory (TWCI). This inventory aims to measure the cognitive and behavioral coping strategies. The present form of this inventory was studied by Gençöz, Gençöz and Bozo⁴⁸.

Young Parenting Inventory (YPI). The YPI, developed by Young⁴⁹, consists of 72 items intended to identify the potential origins of 17 early maladaptive schemas. A psychometric study of the Turkish version of the scale was conducted by Soygüt, Çakır, and Karaosmanoğlu⁵⁰.

Basic Personality Traits Inventory (BPTI). The BPTI was developed by Gençöz and Öncül⁵¹ particularly for Turkish culture to measure the basic personality traits based on the five-factor model of personality^{52,53}.

Childhood Trauma Questionnaire (CTQ). The CTQ assesses self-reported experiences of abuse and neglect in childhood and adolescence. The scale was developed by Bernstein et al. (1994)⁵⁴ and adapted to Turkish by Aslan and Alparslan⁵⁵.

Verbally and Physically Abusive Discipline Practices.

With the aim of measuring the actual abusive practices, all children and mothers were interviewed and asked about the frequency of physically and verbally abusive discipline methods used in their families. Parents' insulting, blaming, threatening, emotionally exploiting, cursing, and comparative (with peers) words and attitudes, which arouse pity and make the child feel refused, were accepted as verbally abusive discipline methods. Physically harmful behaviors of parents such as hitting with the hand, hitting with household items (e.g., slipper, rolling pin, stick, broom, jump rope, bucket), kicking, shaking, nipping, pulling the child's hair, and pulling the child's ear were considered as physically abusive discipline attitudes. The type and frequency of these methods were multiplied, and two variables, namely verbal and physical discipline practices, were included in this study.

Procedure

Among applications to the Child and Adolescent Mental Health Department of Hacettepe University Children's Hospital, children with ADHD diagnosis aged between 71 and 158 months were included in the study if they did not meet the exclusion criteria. The control group was recruited from volunteer mothers and children who responded to the announcements made for the study. With the aim of screening intelligence and mental health problems, the WISC-R and K-SADS-PL were administered to all children, both in the study group and control group. Among the volunteers, children who did not meet the diagnostic criteria for any psychiatric disorder, based on the K-SADS-PL, were included in the control group of the study. Following the selection, instruments were administered and both parents and children were interviewed about the actual verbally and physically abusive discipline practices.

Statistical Analysis

In order to examine the differences in child diagnostic status (control group, ADD, ADHD-H, and ADHD-C) with respect to demographic variables, one-way ANOVA was conducted. In order to investigate the significant ANOVA results, post-hoc analyses were conducted by Tukey's HSD at 0.05 level. Thus, for the univariate analyses, the alpha values that were lower than .025 (found by dividing alpha level

Table I. Group Differences in Approval of Verbal and Physical Discipline

Multivariate					Univariate		
Source	Wilks' Lambda	F	df	η^2	F	df	η^2
ADHD	.82	3.99***	6.232	.09			
Attitudes towards verbal discipline practices					4.51*	3.117	.10
Attitudes towards physical discipline practices					4.60*		.10

Note 1. ***p <0.001, *p <0.05

by the number of subscales, i.e., $.05/2 = .025$ and rounded up to .03) were considered to be significant with this correction. MANOVA was conducted in order to investigate the main effect of the diagnosis on Conners scores. Following multivariate analyses, univariate analyses were performed for the significant main effects of the diagnosis with Bonferroni correction. In addition to variance analyses, separate hierarchical regression analyses were conducted to reveal the significant associates of Conners scores of the children (namely, inattention scores, hyperactivity scores, ODD, and CD scores) and also to reveal the significant associates of verbal-physical discipline styles of the mothers.

In the regression analysis conducted for predictors of Conners scores of children, variables were entered into the equation in five steps. In order to control for the possible effects of demographic variables (i.e., gender, age, and number of siblings), they were entered (via stepwise method) into the equation in the first step. After controlling for the demographic variables, maternal factors related to the mother's past life (such as, mother's perception about her parents' parenting attitudes, how

abusive her childhood was) were hierarchically entered into the equation. In the third step, maternal factors related to the mother's current life (such as mother's scores of depression, anxiety, adult ADHD, coping styles, personality characteristics, perception about her social support) were hierarchically entered into the equation. In the fourth step, relationship with friends, self-esteem and depression scores of the children were hierarchically entered into the equation. The final step consisted of maternal approval scores of verbal and physical discipline.

In the regression analysis conducted to reveal the significant associates of verbal-physical discipline styles of mothers, variables were entered into the equation in six steps. The first four steps were same as with the previous regression analyses. However, the fifth step consisted of Conners scores of children, and in the final step, child depression was entered into the equation.

Results

Sample Characteristics

Of all participants, the control group constituted 20% (n=25), children with ADD 24% (n=30), children with hyperactivity (ADHD-H) 9%

Table II. Mean Scores of Approval of Verbal and Physical Discipline

	Verbal Discipline	Physical Discipline
Control Group	5.14 a	1.5 a
ADD Group	5.6 ab	2.19 a
HD Group	8.8 ab	7.6 b
Combined Group	7.85 b	2.98 a

Note 1. ADD Group: Children in ADHD Predominantly Inattentive Group. HD Group: Children in ADHD Predominantly Hyperactive Group. Combined Group: Children in ADHD Combined Group. Note 2. The mean scores that do not share the same subscript on the same column are significantly different from each other, on 0.05 alpha level of Tukey's HSD.

Table III. Variables Associated with Conners Scores of Children

	F_{change}	df	β	$t_{(\text{within set})}$	R^2
Dependent Variable: Conners Inattention (ADD) Scores					
Step 1: Control Variables					
Maternal education	4.48*	1.107	-.20	-2.12*	.04
Step 2: Mothers' Past Experiences					
Maternal perception of having a punitive mother	5.28*	1.106	.21	2.30*	.09
Step 3: Mothers' Current Characteristics					
Maternal ADD Scores	16.79***	1.105	.37	4.10***	.21
Step 5: Psychological Characteristics of Children (Self esteem and depression scores)					
Step 5: Rosenberg Self-Esteem Scores of Children	14.58*	1.104	.18	2.02	.31
Dependent Variable: Conners Hyperactivity Scores					
Step 1: Control Variables					
Duration of pacifier use	6.16*	1.106	.24	2.48*	.09
Maternal education	5.14*	1.105	-.21	-2.27*	.13
Step 2: Mothers' Current Characteristics					
Maternal ADHD-related problems	9.22**	1.104	.27	3.04**	.20
Step 3: Maternal Approval of Verbal and Physical Discipline					
Maternal approval of verbal discipline	15.02**	1.103	.33	3.88**	.31
Dependent Variable: Conners ODD Scores					
Step 1: Control Variables					
Family income	4.70*	1.107	-.21	-2.17*	.04
Maternal depression	13.19***	1.106	.34	3.63***	.14
Step 4: Self-Esteem	11.51***	1.105	-.32	-3.39***	.23
Step 5: Maternal Approval of Verbal and Physical Discipline					
Maternal approval of verbal discipline	27.46***	1.104	.41	5.24***	.37
Dependent Variable: Conners CD Scores					
Step 1: Control Variables					
Paternal educational status	4.37*	1.107	-.19	-2.09*	.04
Step 3: Mothers' Current Characteristics					
Maternal depression scores	17.57***	1.106	.38	4.19***	.18
Maternal openness	7.15**	1.105	.24	2.67**	.23
Step 5: Psychological Characteristics of Children					
Rosenberg self-esteem scores of children	9.31**	1.104	-.27	-3.05**	.29
Step 6: Maternal Approval of Verbal and Physical Discipline					
Maternal approval of verbal discipline	20.00***	1.103	.36	4.47***	.41

Note 1. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Note 2. Conners ODD: Conners ADHD Parent Rating Oppositional Defiant Disorder Subscale

Table IV. Variables Associated with Approval of Verbal and Physical Discipline

	F_{change}	df	β	$t_{\text{(within set)}}$	R^2
Dependent Variable: Variables Associated with Maternal Approval of Verbal Discipline					
Step 1: Control Variables					
Step 2: Mothers' Past Experiences					
Maternal perception of childhood sexual abuse	4.12*	107	.19	2.03*	.04
Step 3: Mothers' Current Characteristics					
Maternal emotion-focused coping	9.29**	106	.29	3.04**	.12
Openness	5.08*	105	.19	2.25*	.16
Maternal ADHD-related problems	7.09*	104	.23	2.66*	.21
Step 4: Psychological Characteristics of Children					
Relations with friends	8.46**	103	-.26	-2.90**	.27
Step 5: Conners Scores					
Oppositional Defiant Disorder	12.58***	102	.36	3.55***	.35
Hyperactivity	4.12*	101	.21	2.03*	.38
Dependent Variable: Approval of Physical Discipline					
Maternal emotion-focused coping	7.41**	107	.25	2.72**	.07
Neuroticism	4.33*	106	.20	2.08*	.10
Step 5: Conners Scores					
Oppositional defiant disorder	6.12*	105	.23	2.47*	.15
Step 6: Depression Scores of Children					
	11.50***	104	.31	3.39***	.24

Note 1. *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

($n=11$), and children in the combined group (ADHD-C) 47% ($n=59$). In all groups, the age range of children included in the study was between 71 and 158 months (mean \pm SD: 107.22 \pm 22.38, 109.22 \pm 23.15, 99.20 \pm 17.11, for all groups, study group, and control group, respectively). Thirty percent ($n=37$) of the participants were girls and 70% ($n=88$) were boys.

In addition to the age and gender of the child, there were nine more demographic variables of the study, namely family type (divorced, nuclear family, broad family), parental age, paternal education, maternal education, income of the family, number of siblings, duration of pacifier use, and child's relationship with friends and family. Results revealed significant group differences in three demographic variables, namely maternal education, income and family relations. According to these results, compared

to the study group, maternal education ($F(1, 116) = 9.90$, $p < 0.01$) and income ($F(1, 94) = 8.42$, $p < 0.01$) were higher in the control group. In addition, children in the control group had better relationships with their families than the children in the study group ($F(1, 117) = 11.43$, $p < 0.001$). In the study group, 27% of the children had comorbid disorders. These comorbid disorders were elimination disorders ($n=23$, 23%), anxiety disorders ($n=10$, 10%), tic disorders ($n=5$, 5%), ODD ($n=38$, 38%), and CD ($n=5$, 5%).

The Relationship between Scores of Maternal Approval of Verbal and Physical

Discipline towards Children and Diagnosis of Children

The results indicated a diagnosis main effect for both maternal verbal and physical discipline. Accordingly, participants in the control group had significantly lower scores on verbal

discipline compared to children diagnosed with ADHD-C. In addition, participants with ADHD-H had significantly higher scores on physical discipline compared to children diagnosed with ADHD-C, ADD, and the control group. However, there were no significant differences in physical discipline scores among three groups (control group, ADD, ADHD-C). Results are given in detail in Tables I and II.

Variables Associated with Conners Scores of Children

Conners ADD (inattention) scores of children were predicted by four variables, namely maternal education status, maternal perception of having a punitive mother, maternal ADD scores, and self-esteem of children. Conners HD scores of children were predicted by five variables, namely children's age of saying their first word, duration of pacifier use, maternal educational status, maternal ADHD-related problems, and maternal approval of verbal discipline. Conners ODD scores of children were predicted by five variables, namely family income, maternal depression scores, self-esteem scores of children, and maternal approval of verbal discipline. Conners CD scores of children were predicted by five variables, namely paternal educational status, maternal depression scores, openness, self-esteem of children, and maternal approval of verbal discipline. According to these results, among the demographic characteristics, lower maternal education predicted higher Conners ADD and HD scores, whereas lower paternal education predicted higher Conners CD scores. Another important finding was the association between maternal past life and current ADHD symptoms of children. The results indicated that mothers who perceived their own mother as punitive reported higher ADD scores for their children and mothers who perceived being exposed to sexual abuse in their childhood reported higher ODD scores for their children. Interestingly, rather than decreasing, maternal higher approval of using verbal discipline was found to predict higher behavioral problems of children. Results are given in detail in Table III.

Variables Associated with Maternal Approval of Verbal and Physical Discipline Styles

Variables were entered into the equation in six steps. The first four steps were the same as with the previous regression analyses. However, the fifth step consisted of Conners

scores of children, and in the final step, child depression was entered into the equation. Seven variables, namely maternal perception of childhood sexual abuse, emotion-focused coping, openness, ADHD-related problems, and children's relations with friends, Conners ODD and hyperactivity scores were found to be significantly associated with maternal approval of verbal discipline. As maternal perception of childhood sexual abuse, maternal emotion-focused coping, maternal openness, maternal ADHD-related problems, Conners ODD and hyperactivity scores of children increased, maternal approval of verbal discipline also increased. However, as relations with friends increased, approval of verbal discipline decreased. In the second regression analysis, approval of physical discipline was taken as a dependent variable. Four variables, namely maternal emotion-focused coping, maternal neuroticism, Conners ODD scores, and child depression scores were found to be significantly associated with approval of physical discipline. As maternal emotion-focused coping, maternal neuroticism, children's ODD and depression increased, approval of physical discipline also increased. Results are given in detail in Table IV.

Discussion

Attention deficit hyperactivity disorder (ADHD) group differences were observed with respect to maternal approval of verbal and physical discipline. Compared to the control group, mothers of the combined group exhibited higher approval scores on attitudes of verbal disciplinary acts. Studies investigating the role of ADHD diagnosis on parents' abusive attitudes suggest that, in general, a child with symptoms on the wide range of ADHD diagnosis are more prone to parental maltreatment^{12,13}. However, little evidence is given about the specific symptoms or subtypes that show greater risk for the occurrence of maltreatment. Results have revealed that mothers of hyperactive children showed higher approval of physical discipline than mothers of all three other groups. Hyperactivity was characterized with more oppositional behaviors. Thus, a difficult temperament in children, such as hyperactivity, may increase parenting stress, which is shown to be associated with parental maltreatment^{15,56}. Accordingly, the results may be considered as consistent with the literature, in which

disruptive behavior disorders showed a higher association with parental maltreatment¹⁵.

According to the results of regression analyses, mother-rated Conners scores were associated with characteristics of the children, maternal characteristics and maternal use of verbal discipline. Among the characteristics of children, self-esteem scores significantly predicted all Conners scores except for Conners HD scores. In contrast to these results, Maia and colleagues⁵⁷ reported that there were no significant relationships between self-perception and subtypes of ADHD. However, children with ADHD are shown to have lower levels of self-esteem⁵⁸ and are known to experience problems in many domains of their lives, such as academic performance and social relationships^{59,60}. It is possible that scoring below one's own capacity and that of other children, being criticized by most of the significant adults surrounding the child, and being isolated among their peer groups are associated with lower self-esteem in a bidirectional way.

When all characteristics of mothers and children were controlled after the demographic factors, maternal approval score on verbal –but not on physical- discipline was a significant predictor for Conners scores on behavioral domains (Conners HD, Conners ODD, Conners CD). Consistently, the literature also suggests that a child exposed to any type of maltreatment may experience difficulty in intimate relationships and in developing appropriate problem-solving styles in future and may show higher use of aggression than the other children, and thus are at higher risk of psychopathology^{61,62}. In addition, maltreatment is known to increase behavioral problems, and studies suggest that children with ADHD are three and a half times more likely to be involved in a crime when compared to children with ADHD who are not maltreated⁶³.

Predictors of maternal approval scores on verbally and physically abusive disciplinary acts were also investigated, and the results of this study suggested that mothers who have higher perceptions of being sexually abused in their childhood seem to approve verbal discipline more. In the literature, together with childhood sexual abuse, all types of childhood maltreatment were indicated to

predict insecure and disorganized attachment types⁶⁴⁻⁶⁶ (relational aggression both in short-⁶⁷ and long-terms⁶⁸, emotion dysregulation⁶⁹). Thus, it may be concluded that childhood sexual abuse has long-term consequences that may result in being an abusive parent.

This study revealed a positive relationship between maternal openness and approval of verbal discipline and between maternal neuroticism and approval of physical discipline. Among personality characteristics, openness⁷⁰ was shown to be associated with higher impulsive-antisocial behaviors and erratic lifestyle among women. Accordingly, when a child misbehaves, impulsive parents may experience higher difficulty in exhibiting patience and manifesting the best disciplinary style and may look for immediate solutions. Supporting the results of the present study, neurotic mothers are shown to have negative views about their children, and accordingly, are reported to exhibit lower warmth to their children⁷¹. In addition to maternal personality characteristics, maternal coping styles were investigated in this study. Results revealed that maternal scores on emotion-focused coping were associated with higher approval of verbal and physical discipline. There have been limited studies investigating the association between coping and parenting styles of mothers. However, Cantos and colleagues⁷² reported similar results. According to their study, abusive mothers were shown to use less problem-solving strategies and more emotion-focused coping style than non-abusive mothers⁷². Consistently, there is some evidence suggesting that in a conflict situation, people who score high in emotion-focused coping tend to prefer not to react for a long time and afterwards give an aggressive reaction⁷³. Consistent with the literature^{74,75}, maternal approval of physical discipline was found to be predicted by child depression. In addition, children's perception about the quality of their own relations with friends was negatively associated with maternal approval of verbal discipline. The possible link between the self-damaging effect of verbal discipline and aggressive relationship styles of children was given above. Studies have also linked physical abuse to difficulties in emotional regulation⁶⁶, which in turn, led to internalizing problems in children⁶⁸. Conners ODD scores of children predicted maternal

approval of verbal and physical discipline. In addition, verbal discipline predicted an increase in ODD and CD symptoms. There seems to be a reciprocal relationship between disruptive behaviors of children and abusive discipline styles of mothers. Both emotion literature on anger and abuse literature on parenting styles have research findings supporting these results⁷⁶⁻⁷⁸. Anger is an emotion interrupting the person's perceptions about the other, causing misinterpretations on the intent of others and exaggeration about the event, resulting in anger itself⁷⁸. Abusive parents report higher feelings of anger⁷⁹, and this, in turn, may affect their misinterpretations about the child's intent and the severity of the child's symptoms. This may cause the child to be more aggressive and to act out even more, as a coping strategy. Consistently, McElroy and Rodriguez⁸⁰ reported that parents' negative attributions predicted their abuse potential. Parental abuse may also lead to aggressive behaviors of children through the acceptance and approval of violence that the child develops as a consequence of frequent exposure to maltreatment. It has been reported that younger children and frequently spanked children show higher acceptance of hitting for conflict resolution and advocated spanking as a consequence of misbehavior⁷⁰. As a result, these children prefer aggressive conflict resolution with peers and siblings, which might be a result of their modeling of their parents' responses with regards to their aggressive behaviors.

Based on the results of this study, it may be concluded that parents of children with ADHD are more prone to use abusive discipline methods. In addition, parents' abusive discipline methods increase the child's behavioral problems. To break down this vicious cycle and decrease the risk of maltreatment of children with ADHD, parents could participate in a parent training program that includes information about how they can best handle their children. Such training programs are shown to be effective on the parents' ability of empathizing with the child and handling the child⁸⁰. This may result, in turn, in decreased risk of maltreatment for children with ADHD.

Limitations and Implications of the Study

Though there is an increasing interest in this area, studies investigating maltreatment in a

sample of children diagnosed with ADHD in the general literature and in Turkey remain inadequate. Among the few studies conducted to investigate the predictors of maltreatment by mothers of children suffering from ADHD, most of them have assessed the attitudes solely with questionnaires^{80,81}. This study has both content differences and methodological differences. In this study, in addition to the frequency, a wide range of predictive factors and possible outcomes of abusive attitudes were investigated among Turkish mothers both in a clinical and nonclinical population. Another strength of the study is the method used for choosing the control group. The control group consisted of healthy volunteer peers of the study group. Some studies choose their healthy controls based on the children's self-reports and their parents' evaluations. Moreover, these evaluations are generally made by filling inventories. In this study, the control group's psychiatric health was determined by psychiatric evaluations. To ensure that these children had no psychiatric disorders, the K-SADS-PL was administered to these families.

Mothers of the children in the control group had higher educational levels and families with higher income when compared to children in the study group. In order to minimize the effects of demographic variables, they were entered in the first step of regression analyses, so the variances explained by these variables were controlled. Numbers of the participants in some sub-groups were not high. More participants might be enrolled in future studies.

This study contributed to the literature by pointing to the effects of both maternal past and current experiences and characteristics on maternal disciplinary attitudes. Paternal characteristics and disciplinary attitudes were not assessed in this study. Future studies may include fathers to make a full evaluation of the familial disciplinary attitudes.

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