



The Study of the Aggression Levels of Preschool Children in Terms of Emotion Expression and Emotion Regulation *

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Abstract

Preschool children may usually behave aggressively during their social interactions. Children's aggressive behavior can occur for a variety of reasons. Especially, some of children's qualifications within the scope of their emotional development can play a decisive role in these aggressive behaviors. In this study, the relationship between pre-school children's (3-5 years of age) skills of expressing emotions and emotion regulation with their level of aggression is examined. In the study, 863 children attending education in kindergartens in Denizli city center were identified as the sample. In the study, Preschool Social Behavior Scale-Teacher Form, Child Emotion Expression Scale-Mother Form and Emotion Regulation Scale were used for data collection purposes. Children's aggression levels were assessed by their teachers, while their ability to express emotions and emotion regulation were evaluated by their mothers through the relevant measuring tools. Children's aggression levels were assessed in sub-dimensions of physical and relational aggression; and their ability to express emotion was discussed in sub-dimensions of happy, sad, angry and frightened through measuring tools. Children's emotion regulation skills were examined within the framework of emotion regulation and variability/negativity sub-dimensions in addition to the total score of emotion regulation obtained by inverse encoding of all negative items in the Emotion Regulation Scale. Research data were examined via the t test to determine whether children's physical and relational aggression levels differed significantly in terms of gender, and via variance analysis (ANOVA) to determine whether they differed significantly in terms of age. Hierarchical multiple linear regression analysis was utilized to determine the predictor power of children's emotion expression skills and emotion regulation skills for their physical and relational aggression levels. Research results show that only physical aggression levels of children differ significantly in terms of gender variables. However, it was observed that both physical and relational aggression levels of children differed significantly in terms of their age. According to

Keywords

Preschool period children
Aggression
Physical aggression
Relational aggression
Emotion expression
Emotion regulation

Article Info

Received: 09.07.2018
Accepted: 05.06.2019
Online Published: 12.11.2019

DOI: 10.15390/EB.2019.8150

* This article is derived from Ceyhun Ersan's PhD dissertation entitled "The study of the aggression levels of preschool children in terms of emotion expression and emotion regulation", conducted under the supervision of Şükran Tok.

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the results of regression analysis, the physical aggression of children, their levels of expressing angry, sad and frightened feelings were significantly predicted by their total levels of emotion regulation and their levels of variability/negativity which is sub-dimension of emotion regulation. In addition, it was observed that children's relational aggression is significantly predicted by the levels of anger and sad emotion expression and the level of variability/negativity, which is the lower dimension of emotion regulation skills. The findings were discussed within the scope of related studies in the field, and various recommendations were presented to both practitioners and future researchers within the framework of the results obtained in the study.

Introduction

With support from adults and by making environmental conditions as suitable as possible young children can reveal the potential they possess since birth. In this sense, it is a task for the adults and the systems (family, community, state etc.) who are aware of their responsibilities to keep the child balanced and fit in all developmental areas. In the early years when development and change are both very fast (Baykoç Dönmez, 2014), children's various interactions with the outside world offer very valuable contributions to them to gain new experiences and to adapt to life.

It is possible that preschool age children will have some unwanted behaviors in various interactions with their surroundings (parents, other adults, siblings, peers and even objects). According to parents and even for teachers the most serious and devastating behavior is aggression (Coplan, Bullock, Archbell, & Bosacki, 2015; Craig, Henderson, & Murphy, 2000; Gander & Gardiner, 2015; Trawick Smith, 2014). It is thought that aggressive behaviors in preschool children may occur due to genetic-biological reasons as well as social-environmental reasons (Bandura, Ross, & Ross, 1961; Lacourse et al., 2014; Mendes, Mari, Singer, Barros, & Mello, 2009). Whether it is due to a combination of genetic-biological or a combination of social-environmental, or the combination of both, parent and teacher concerns about aggression in children are not without cause. Because of the high levels of aggression, the number of preschool children who are referred to clinics is increasing. Furthermore, aggressive and violent behaviors resulting in death and serious injuries, can increase very quickly. These behaviors can even turn into a situation in which they are no longer recognized by society as aggression and considered as ordinary behaviors. This is an issue that we should be seriously concerned about (Landy & Menna, 2001; Yaşar & Paksoy, 2011).

There are many theories to explain aggression. Some of the theories may be theories that explain aggression as a concept (such as psychoanalytic theory), or may have emerged to explain aggression (like theory of frustration-aggression). When the theories are examined, it can be said that there are four different approaches regarding the origins of aggression. These are, respectively, aggression a) biological structure and instincts b) learning experiences and motivation, c) cognitive development and social-cognitive processes, and d) general (integrating theories explaining aggression).

The idea that biological and instinctive theories are based on is the evaluation of aggression as an innate behavior. Aggression is an instinct and a pattern of genetically encoded responses. Freud and Lorenz explain aggression via grounding it on instinct (Hogg & Vaughan, 2007). However, the explanation of aggression via grounding it on instinct and aggression was criticized. Many social psychologists believe that learning has a significant impact on the type and amount of aggression. In this context, aggression can be learned. Social learning theory has important explanations through experimental studies showing that aggression is a learned phenomenon (Cüceloğlu, 2011). An approach

that takes aggression on the basis of motivation is seen in the theory of frustration-aggression (Brewer & Crano, 1994). According to this theory, when a person thinks that he has been prevented from reaching his goal, the possibility of reacting aggressively increases (Dollard, Dood, Miller, Mowrer, & Sears, 1939, as cited in Aronson, Wilson, & Akert, 2012). It is seen that aggression is tried to be explained in the context of cognitive development and social cognitive processes. Social information processing theory describes a number of cognitive-emotional mechanisms that explain the connection between some risk factors and the development of aggression. According to this theory, the way in which a particular event is interpreted by people affects how people react to that situation. In the field of developmental psychopathology, the social information processing model provided the basic theoretical framework for answering the question of what causes certain factors causing aggression (Landsford et al., 2006). According to DeWall, Anderson, and Bushman (2011), every theory that tries to explain the origins of aggression gives important information to understand the specific causes of people's aggressive behaviors. Nevertheless, these theories do not provide a comprehensive framework for understanding human aggression and violence. From this point of view, a holistic view of the theories that explain the origin of aggression can provide a significant advantage in explaining human aggression. In this context, Craig Anderson and Johnie Allen attempted to create a broad model of aggression that included other theories of aggression. This new model is called the general aggression model. In the model, some personal and situational inputs are risk factors for the emergence of aggression (Anderson & Bushman, 2002).

Several factors related to aggressive behavior of preschool children can be mentioned. Researches conducted in connection with the temperament of the aggressive behavior of preschool children show that there is a striking relation (Altan, 2006; An & Yaban, 2016; González Peña, Egido, Carrasco, & Tello, 2013; Ortiz & Gándara, 2006; Valles, 2012; Yoleri, 2014) with their attachment styles to their parents (Harper, 2011; Lyons Ruth, 1996; Ooi, Ang, Fung, Wong, & Cai, 2006; Reebye, 2005; Ural, Güven, Sezer, Efe Azkeskin, & Yılmaz, 2015), with their ages (Alink et al., 2006; Alisinanoğlu & Kesicioğlu, 2010; Ostrov, Woods, Jansen, Casas, & Crick, 2004; Motamedi, 2017; Reebye, 2005; Tremblay, 2012), with their genders (Alink et al., 2006; Baillargeon et al., 2007; Crick et al., 1998; Endendijk et al., 2017; Ostrov et al., 2004; Sanson, Prior, Smart, & Oberklaid, 1993; Uysal & Dinçer, 2013), with their parents' attitudes (Chang, Schwartz, Dodge, & McBride Chang, 2002; Chernoff, Flanagan, McPhee, & Park, 2007; Hawkins et al., 1998; Romanchych, 2014; Valles, 2012) and with their ways of taking people and media as a model (Akçay & Özcebe, 2012; Bandura et al., 1961; Beresin, 2017; Tremblay, 2012; Wilson, 2008; Yıldırım, 2008). The relationship between preschool children's temperament, age, gender, attachment styles to their parents, their parents' attitudes and the aggressive behavior of the figures in their environment/ media they are exposed to, makes it necessary to address the social development of these children. Emotions and emotional development have an essential place in the shaping of various behaviors that preschool children exhibit during their social development and social interactions (Bohnert, Crnic, & Lim, 2003; Nauert, 2011; Steffgen & Gollwitzer, 2008).

Emotions have crucial roles in the survival of the human being and in the struggle to survive. All people, including babies, have feelings. Emotions make it easy for people to understand who and what is important for them (Berk, 2013; Southam Gerow, 2014), making it easier to manage or take measures related to others. The social interactions of individuals and, in particular, preschool children, with their environment are not independent of their emotions. These close and bounded relationships between social interaction and emotions are also emphasized in the context of developmental psychology. Social development and emotional development are not usually referred to as separate topics but as social-emotional development (Benson & Haith, 2009; Berk, 2013; Bredekamp, 2015; Cooper, Masi, & Vick, 2009; Güngör, 2009; Trawick Smith, 2014).

Social-emotional development is closely related to the ability of children to express their emotions and thoughts, to regulate their emotions, and thus to be in harmony both with the self and the environment in which they are in. The dynamic nature of social-emotional development is caused by the emotions that emerge in the social context. Social-emotional development forms the whole emotions that the child experiences in the his/her life, in addition to its interaction and harmony with the environment s/he is in. Expressing the various emotions experienced by children constitutes one of the cornerstones of their interaction and harmony with their environment. Throughout the first few years of life, children learn how to convey their wishes and needs to others and how to express emotions that enable them to respond to others' wishes. This process of expressing emotion that is adjusted to the environment has a very valuable role in the development of social relations. Expression of emotions during social interactions and regulation of these emotions have significant and decisive effects on relationships with others who takes care of the child (e.g. mother) including caregivers (Chaplin & Aldao, 2013; Dalkılıç, 2014; Denham, 2007; Ekman, 1999; Halberstadt, Denham, & Dunsmore, 2001; Halberstadt & Lozada, 2011; Saarni, 2001; Shuman, 2013; Sroufe, 2002).

Expressing feelings is the individual's usage of his/her mimics, voice and gestures to explain internal emotional states such as happiness, anger, sadness, fear, amazement, disgust (Chaplin, 2015). In particular, feelings of happiness, anger, sadness, fear, confusion and disgust are considered basic emotions (Berk, 2013; Ekman, 1999; Ekman & Friesen, 1986). In researches on child development, it has been pointed out that researchers tend to have four basic emotions, mostly happiness, anger, sadness and fear (Arnault, Sakamoto, & Moriwaki, 2005; Berk, 2013; Malatesta, Culver, Tesman, & Shepard, 1989). In a recent study (Jack, Garrod, & Schyns, 2014), it was found that the main emotions are happiness, anger, sadness and fear. Additionally, astonishment has been expressed with the feeling of fear and disgust has been expressed with the feeling of anger.

Expression of emotions has very important functions in the development of interpersonal relationships and in the organization of these relationships as it carries clues to behavioral intentions (Ekman, 1999; Meneses & Diaz, 2017). It is stated that children who can not express their emotions appropriately in a social context are at risk for various incompatible behaviors, mainly aggression (Eisenberg et al., 2003; Greenspan & Salmon, 1995). It is thought that intense negative emotional expressions of children have a direct effect on their later counterattack and aggression behaviors (Shaw, 2006). Expressing emotions at an early age is an important determinant of the increase or decrease in aggression in these children (Ekman, 1999). However, it can be said that the relations between preschool children's levels of expressing their feelings of happiness, anger, sadness and fear and the levels of aggression are examined at a limited level. It is understood from the review of the literature that in the studies that have been conducted regarding aggression, the focus is on the relationship between anger and aggression (Conger, Neppel, Kim, & Scaramella, 2002; Fabes & Eisenberg, 1992; Tremblay, 2009; Ural et al., 2015) and there are limited studies focused on the relationship between fear and aggression (Gao, Raine, Venables, Dawson, & Mednick, 2010; Kivenson Baron, 2010). There is only one study (Hanish et al., 2004) on the relationship between expression of sadness and aggression. In these studies, aggression was examined on the basis of physical aggression, and the dimension of aggressiveness was not addressed. However, physical aggression is not the only kind of aggression encountered in preschool children. From about 30 months on, preschool children have shown relational aggression and the relational aggression could clearly be distinguished from physical aggression at around three years of age (Crick et al., 2006; Ostrov et al., 2004). In this context, a study (Ostrov, Murray Close, Godleski, & Hart, 2013) was found in the literature examining the relationship between preschool children's levels of emotional expression and their relational aggression. In the study, it was concluded that preschool children had a positive and significant relationship between levels of anger expression and relational aggression.

Preschool children learn to express their emotional experiences as well as expressing their positive or negative feelings during their social interactions (Berk, 2013). The ability to manage these emotional experiences is defined as emotional regulation. Emotional regulation is the ability of an individual who is confronted with an emotional stimulant and having the skill to regulate his/her emotional state in accordance with the environment in which s/he is. The concept of adaptive or positive emotional regulation can be explained with skills such as controlling the anger at the very moment, expressing emotions correctly, controlling the excitement, and engaging in social interaction with other individuals (Eisenberg & Spinrad, 2004).

The development of emotion regulation skills in the preschool period has very important functions (August et al., 2017). It is emphasized that the development of emotion regulation skills in children is important because it allows them to manage their emotions appropriately, and also because it plays a critical role in reducing and preventing aggression in children (Landy & Menna, 2001). Children who can not fully develop emotional regulation skills have difficulty in making meaningful relationships with others (Stack, Serbin, Enns, Ruttle, & Barrieau, 2010). Many studies have shown that the development of emotional regulation skills of preschool children plays a crucial role in reducing the level of physical aggression of these children (Ari & Yaban, 2016; Blandon, Calkins, Grimm, Keane, & O'Brien, 2010; Calkins, Smith, Gill, & Johnson, 1998; Chang et al., 2002; Cicchetti, Ackerman, & Izard, 1995; Hanish et al., 2004; Helmsen, Koglin, & Peterman, 2012; Ramsden & Hubbard, 2002; Romanchych, 2014; Rubin, Coplan, Fox, & Calkins, 1995; Ural et al., 2015). However, the development of emotional regulation skills has been addressed in a limited number of studies (Ari & Yaban, 2016; Ostrov et al., 2013; Jun Ah, Yoonjoo, & Jihyun, 2014; Mihic, Novak, Basic, & Nix, 2016) in relation to children's relational aggression. However, in various studies (Ostrov, Ries, Stauffacher, Godleski, & Mullins, 2008; Murray Close & Ostrov, 2009), the relationship between relational aggression and physical aggression observed in children was found to be high and positive. Moreover, it is reported that preschool relational aggression has the least harmful consequences as physical aggression (Brendgen, 2012; Smith, Rose, & Schwartz Mette, 2009; Young, Nelson, Hottle, Warburton, & Young, 2010).

Inadequacies and difficulties in emotional regulation (dysregulation), especially in preschool children, can cause a number of behavioral problems along with aggression. It is reported that high aggression reactions, impulsive violence behaviors and explosions are seen in individuals with low or problematic emotional regulation skills (Davidson, Putman, & Larson, 2000; Eisenberg, Fabes, Nyman, Bernzweig, & Pinuelas, 1994; Eisenberg & Fabes, 1992; Romanchych, 2014). Similarly, it is seen that the difficulties in organizing the emotions are related to stress, depression, anxiety disorder, anger and aggression (Garnefski, Kraaij, & Spinhoven, 2001; Eisenberg & Fabes, 1992). Helmsen et al. (2012) concluded that preschool children's emotional regulation difficulties accounted for 38% of their physical aggression. Nevertheless, there was no study explaining emotional regulation difficulty in terms of expressing the feelings of happiness, sadness, fear and relational aggressiveness.

The present research attempts to examine the role of preschool children's skills of expressing feelings and regulating emotions in predicting physical and relational aggression levels. In addition, it tries to determine whether physical and relational aggression levels of preschool children differ significantly according to their age and gender. In this context, the answers to the following questions were sought:

1. Are the physical and relational aggression levels of preschool children significantly differentiate in terms of gender?
2. Are the physical and relational aggression levels of preschool children significantly differentiate in terms of age?
3. Are preschool children's emotional expression and emotion regulation skills predicting physical and relational aggression levels significantly?

Method

Research Model

The research is using the relational survey model. In the relational survey model, the purpose is to determine the relationships between two or more variables and to get clues about cause and effect. In the relational survey model, besides determining the relationship between variables; it is also possible to examine one of the variables as dependent and the other variable(s) as an independent variable. In the studies carried out to determine relations between variables, it is unclear which variable is affecting who and at what level. However, it is easy to see how much of the variance in the dependent variance is explained by the relevant variables in the studies carried out for the purpose of prediction (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz, & Demirel, 2013; Karakaya, 2012). In the present study, where the relational survey model was used, the independent variables of the research were expressing emotions and regulating emotions, the dependent variable of the research was determined as aggression.

Population and Participants

The population consists of 5228 preschool children aged 3-5 and attending public kindergartens in the Pamukkale and Merkezefendi districts of the Denizli province during the 2016-2017 academic year. The sample of the study was composed of 863 children from 15 public kindergartens, 427 (49.5%) girls and 436 (50.5%) boys, selected via the unequal cluster sampling method (Karasar, 2014, p. 115). Three-year-old children formed 10% (n = 84) of the participants, four-year-old children formed 35% (n=302) and five-year-old children formed 55% (n=477) of the participants.

Table 1. Demographic Features of Participants

		f	%
Gender	Girl	436	50.5
	Boy	427	49.5
Age	3	84	10
	4	302	35
	5	477	55
Mother Education Level	Elementary School	100	11.5
	Secondary School	115	13
	Highschool	262	31
	University	364	42
	Postgraduate	22	2.5
Mother's occupation	Housewife	431	50
	Worker	125	14.5
	Officer	179	21
	Tradespeople	17	2
	Self-employed	25	3
	Other	86	10
Father's Education Level	Elementary School	98	11.4
	Secondary School	97	11.2
	High School	256	29.7
	University	354	41
	Postgraduate	42	4.9
	Not Mentioned	16	1.9
Father's Occupation	Farmer	5	0.6
	Worker	213	24.7
	Officer	207	24
	Tradesman	142	16.5
	Self-employed	129	14.9
	Other	151	17.5

When children's mother are examined in terms of their education levels, 11.5% (n=100) of the mothers are primary school graduates, 13% (n=115) of them are secondary school graduates, 31% (n=262) of them are high school graduates and 42% (n = 364) of them are university graduates and 2.5% (n=22) are postgraduates. In terms of profession, 50% (n=431) of the mothers were housewives, 14.5% (n=125) workers, 21% (n=179) officers, 2% (n=25) self-employed and 10% (n=86) have other jobs. When children's fathers are examined regarding their education levels it is reported that 11.4% (n=98) of the fathers are primary school graduates, 11.2% (n=97) are secondary school graduates, 29.7% (n=256) of them are high school graduates, 41% (n=354) of them are university graduates and 4.9% (n=42) are postgraduates. 1.9% of the fathers' education level is not specified. Regarding the father's profession, .6% (n=5) of the them are farmers, 24.7% (n=213) of them are workers, 24% (n=207) of them are officers, 16.5% (n=142) are tradesman, 14.9% (n=129) are self-employed and 17.5% (n=151) have other jobs. Monthly incomes of children's families were intended to be determined, but the national education directorate found it inappropriate to collect such data. Regarding this, the following case needs to be highlighted; a monthly payment, determined by provincial preschool education commissions, is required on a minimum and maximum base price for each child who is educated in officially independent kindergartens. Based on the commissions' payment amount, a kindergarten has no flexibility to ask for dues below the minimum and above the maximum price, and the researchers took this into consideration when determining sampling schools. In this context, four of the 15 schools selected were from the schools that received dues from the minimum price; five were selected from schools that received dues over the average price of the minimum and maximum, and six of which received dues from the maximum price.

Data Collection Tools

The data of the present study were obtained through "Personal Information Form", "Child Emotional Expression Scale-Mother Form", "Emotion Regulation Scale", and "Preschool Social Behavior Scale-Teacher Form". Personal Information Form, Child's Emotional Expression Scale-Mother's Form and Emotion Regulation Scale were evaluated by the children's mothers. In order to determine the physical and relational aggression of the sampled children the Pre-School Social Behavior Scale-Teacher Form was assessed by the children's teachers.

Personal Information Form

The Personal Information Form is designed to collect data on preschool children and their parents. In the Personal Information Form, there are questions about the gender, age, number of siblings they have, and the gender of their siblings. It also includes a variety of questions about the ages of mothers and fathers, their level of education and their profession.

Child's Emotional Expression Scale-Mother Form

The Child Emotion Expressiveness Questionnaire is a measurement tool developed by Scott Mirabile (2008) to assess the levels of positive (happy) and negative (sad, angry and frightened) expressions of 36-72 months-old preschool children. The Child Emotional Expression Scale aims to evaluate children's expressions of happiness, sadness, anger and fear in terms of frequency, duration, intensity and speed. The frequency, duration, intensity and speed scores obtained from the scale are collected for each emotion, revealing the children's ability to express positive or negative emotions. In this sense, while expressing a happy feeling reveals "positive feeling expression" skill score; expressing sad, angry and scared emotion scores express "negative emotions". The Child's Emotional Expression Scale can be used with total scores to express positive emotions (expressing happy emotion dimension) and negative emotions (expressing sad, angry and frightened emotion dimensions), as well as each sub-dimension will be treated as happy, sad, angry and frightened emotions can also be used on the basis of scores that express. The scale has internal consistency at an acceptable level. Cronbach Alpha internal consistency coefficients were calculated as .57 for expressing feeling of sadness, .85 for expressing feeling of anger, .75 for expressing feeling of being frightened and .76 for expressing feeling of happiness. It is also stated that there is a significant positive correlation ($r=.54$, $p<.001$) between the scores of sad, angry and frightened emotional expressions (Mirabile, 2014).

In the process of adapting the Child Emotional Expression Scale to Turkish, the first thing which was done was asking for permission from the researcher Scott P. Mirabile, who developed the scale. Then, the scale was translated into Turkish from its original language English, with five experts totally, three experts having doctoral degrees in preschool education, one expert who has doctoral degree in child development and education, and one expert with a doctoral degree in guidance and psychological counseling. The researchers carefully examined five different translations and turned them into one form. Subsequently, the Turkish form was sent to two different specialists to translate into English again. The English form translated from Turkish form and the original English form were examined by an academician with a doctorate degree in English language teaching. According to the results of the evaluation, it is determined that there is not an expression that can change the meaning, disrupt or cause misunderstanding in the items of the measurement tool. After the linguistic validity stage, a group of seven experts working in the field of preschool education and two as lecturers in the field of psychological counseling and guidance were identified for the scope validity and the necessary arrangements were made according to the feedback of the expert group. For face validity, five preschool teachers got together and within the framework of their views, contributions and criticism the necessary arrangements were made. In particular, three of the teachers stated that the Child Emotional Expression Scale with a 7-point Likert-type scale might be a problem for the mothers while they are grading. So, it is thought that the scale could be more functional as a 5-point Likert scale. After taking into consideration the views of the two faculty members having degrees of doctorate in the field of measurement and evaluation, the scale is revised as scale likert type. Face validity performed with teachers was checked one more time via a pilot application with five mothers whose children were preschoolers. At the end of the application, it is seen that providing a comprehensive instruction sheet on how to evaluate the scale was necessary. As the validity and reliability studies of the Child's Emotional Expression Scale were carried out from the mothers who have children in preschools, the name of the scale was revised as the Child's Emotional Expression Scale-Mother Form. The validity reliability studies of the Child Emotional Expression Scale-Mother Form were conducted by collecting data from 298 children who were 36-72 months-old and attending four different kindergartens located in the province of Pamukkale in the province of Denizli in the academic year of 2015-2016. In addition, a group of 110 participants were identified for the test-retest and the scale was applied to same mothers after two weeks. 103 mothers completed the re-test process. In order to determine the construct validity of the Child's Emotional Expression-Mother Form confirmatory factor analysis was performed. Amor 20.0 was used for confirmatory factor analysis. The confirmatory factor analysis showed that the standardized factor load for the first item of the happy subscale was .06. For this reason, the item was removed from the analysis process because in confirmatory factor analysis, it is expected that each item has a factor load of at least .30 or above (Seçer, 2015, p. 187). At the end of the renewed analysis, it was understood that the factor loadings of the scale were between .45 and .90. Then, the fit indices were examined. In the end of the Child Emotional Expression Scale-Moment Form confirmatory factor analysis, the fit indices obtained were found as $\chi^2/sd=2.72$, RMSEA=.063, RMR=.030, GFI=.94, AGFI=.92 and CFI = .95. The ratio of χ^2/sd obtained from confirmatory factor analysis being less than five, with RMSEA lower than .08 and GFI and AGFI values higher than .90 suggest that the model has a good fit (Marsh & Hocevar, 1988). As a result, the Child Emotional Expression Scale-Mother Form was validated in four sub-dimensions: expressing happy emotions, expressing sad emotions, expressing angry emotions and expressing frightened emotions.

The reliability of the Child's Emotional Expression Scale-Mother Form was obtained through item total score correlation, Cronbach's alpha internal consistency coefficient and test-retest reliability. According to the the data Cronbach Alpha internal consistency coefficient of expressing a happy feeling, was found as .70, test-retest correlation coefficient was found as .77; Cronbach Alpha internal consistency coefficient of expressing sad feeling ws .75, test-retest correlation coefficient was .74; Cronbach's alpha internal consistency coefficient was .83, test-retest correlation coefficient was .79 and Cronbach's alpha internal consistency coefficient of frightened emotional expression was .83 and test-retest correlation coefficient was .80.

The Children's Emotional Expression Scale-Mother Form was used to examine the aggression levels of preschool children in terms of emotional expression and emotional regulation. In this context, Cronbach's Alpha internal consistency coefficients related to sub-dimensions of Child Emotional Expression Scale-Mother Form were recalculated. According to the values obtained, Cronbach Alpha internal consistency coefficient of expressing happy feeling was .73; Cronbach Alpha internal consistency coefficient of expressing sad feeling was .75; Cronbach Alpha internal consistency coefficient of expressing angry feeling was .84, and Cronbach Alpha internal consistency coefficient of expressing frightened feeling was .84.

Emotion Regulation Checklist

The original form, developed by Shields and Cicchetti (1997), consists of 24 items, which are aimed at assessing the emotional responsiveness of children and the expression and regulation of the emotions within the environment children experience. The Emotion Regulation Scale is a measuring instrument rated by quadrant likert type (1- Never, 4- Always) by mothers or teachers. Shields and Cicchetti (1997) stated that the Emotion Regulation Scale exhibits two sub-dimensions: Lability/negativity and emotion regulation. The Lability/negativity sub-dimension exhibits a structure including items related to changing mood and difficulty in regulating feelings (eg, "tendency to anger outbursts, mood swings") in emotional state flexibility. The second sub-dimension, which is emotional regulation, includes factors that display appropriate emotion in relation to the situation, empathy and emotional self-awareness (eg, "understanding other's emotions/ walking in others' shoes" ; "showing attention to others when they are sad or weak"). Internal consistency coefficients on the original scale are .96 for the lability/negativity subscale and .86 for the emotion regulation subscale. There is a negative and significant relationship ($r=.50$, $p<.001$) was found between the lability/negative and emotion regulation sub-dimensions. In addition, all negative items on the original scale were scored in reverse, resulting in a "total composite emotion regulation score". The total emotion regulation internal consistency coefficient obtained with this method is calculated as .89 (Shields & Cicchetti, 1997, pp. 909-910).

The Emotion Regulation Scale was adapted to Turkish by Batum and Yağmurlu (2007). It has been reported that adaptation studies have internal consistency calculated as .73 for the teacher form and .75 for the mother form of the scale. In another study, Yagmurlu and Altan (2010) used the Emotion Regulation Scale and calculated internal consistency coefficients for the mother form as .75 and for the teacher form as .84. At the same time, they stated that there was a high level of positive relationship between mother and teacher forms ($r=.68$, $p<.001$). However, the adaptation study of Batum and Yağmurlu (2007) emphasized that no other psychometric procedure was performed besides translation into Turkish form and translation from Turkish back to English form (Kapçı, Uslu, Akgün, & Acer, 2009). Emotion Regulation Scale is used both in Turkey (Arı & Yaban, 2016; Dağal, 2017; Koçyiğit, Yılmaz, & Sezer, 2015; Ural et al., 2015) and abroad (Brannon, 2009; Linkoln, 2014) in many studies dealing with preschool age children's emotion regulation skills.

In the present study, confirmatory factor analysis of the Emotion Regulation Scale was gathered from 450 participants taken from the original study with 863 participants. The result of the analysis showed that the standardized factor coefficients of the four items on the scale were below .30. The 17th item in the Lability/negativity sub-dimension has .04 factor load value and the 4th item has .09. It is seen that in the emotion regulation sub-dimension the 21st item was found to have a factor load value of .08 and 23rd item has .11. These four items taken out from the analysis one by one starting with the lowest factor load (item 17). At the end of the revised analysis, it was found that there was no problematic item in terms of the standardized factor loadings and the fit indices were examined. Seven modification processes have been carried out in order to adapt the model well. The new fit indices obtained at the end of the modification process were $\chi^2/sd = 2.46$, RMSEA = .056, RMR=.032, GFI=.92, AGFI=.90, CFI=.91.

Experts who developed the Emotion Regulation Scale emphasized that all negative items on the scale were scored in reverse, resulting in a "total compound emotion regulation score" (Shields &

Cicchetti, 1997, pp. 909-910). In the present study, the structure of the Emotion Regulation Scale, which is used in determining the emotion regulation skills of preschool children in Turkey and abroad, has been tested again by applying the mentioned procedure. Negative items in the scale were reversed and a total compound emotion regulation score was obtained. The obtained score is named as "emotion regulation total" sub-dimension in this research. As a result of the analysis, it is seen that the standardized factor coefficients of eight items on the scale were below .30. The factor loadings of these eight items are respectively .17 for the 3rd item, .19,7 for the 4th item, .16 for the 7th item, .14 for the 15th item, .04 for the 17th item, .18 for the 18th item, .08 for the 21st item and .10 for the 23rd item. These eight items were taken out from the analysis one by one starting with the lowest factor load (item 17). At the end of the revised analysis, it was found that there was no problematic item in terms of the standardized factor loadings and the fit indices were examined. At the end of the revised analysis, it was found that there was no problematic item in terms of the standardized factor loadings and the compliance indices. Five modification processes have been carried out in order to adapt the model well. The new fit indices obtained at the end of the modification procedure were found as $\chi^2/sd = 2.65$, RMSEA=.059, RMR=.027, GFI=.93, AGFI=.91, CFI=.90.

The Emotion Regulation Scale, whose construct validity is carried out in the present study, was used to examine the aggression levels of preschool children in terms of emotional expression and emotional regulation. Within this scope, Cronbach Alpha internal consistency coefficients for subscales of Emotion Regulation Scale were recalculated. According to the obtained values Cronbach Alpha internal consistency coefficient of emotion regulation is found as .74; Cronbach Alpha internal consistency coefficient of lability/negativity is found as .78 and Cronbach Alpha internal consistency coefficient of emotion regulation total is .72.

Preschool Social Behavior Scale-Teacher Form

The original Preschool Social Behavior Scale-Teacher Form was developed by Crick, Casas and Mosher in 1997. The aim of the scale is to determine preschool children's social behaviors via teacher evaluation. The items on the scale arranged as a five-point Likert type are "1. Not true at all or almost not true", 2. "Not very often", 3. "Sometimes", 4. "Often", 5. "Always or almost always right". The scale consists of four sub-dimensions: physical aggression, relational aggression, prosocial behavior, and depressed effect. Pre-School Social Behavior Scale-Teacher Form is important as it is the first scale to determine the levels of relational aggression levels regarding the scales measuring aggression in children between the ages of 3-6 (Karakuş, 2008). The Cronbach Alpha coefficients for the subscales of the original Preschool Social Behavior Scale-Teacher Form were calculated as .94 for physical aggression, .96 for relational aggression, .88 for positive social behavior, and .87 for depressive emotions. The Preschool Social Behavior Scale-Teacher Form was adapted to Turkish by Karakuş (2008). According to the results of the study conducted in this sense, the total Cronbach Alpha coefficient of Preschool Social Behavior Scale-Teacher Form was calculated as .87. The reliability coefficients for subscales of the preschool Social Behavior Scale-Teacher Form were .90 for physical aggression, .84 for relational aggression, .89 for positive social behavior and .68 for depressive emotions. In order to determine the reliability of the Preschool Social Behavior Scale-Teacher Form test-retest correlations were also examined. The test-retest correlation coefficients were calculated as .97 for physical aggression, .99 for relational aggression, .87 for positive social behavior and .95 for depressive emotions (Karakuş, 2008).

In this study, preschool children's aggression levels were examined in terms of emotional expression and emotional regulation. Aggression is the dependent variable of the research. For this reason, only the items related to physical aggression and relational aggression sub-dimensions of the Preschool Social Behavior Scale-Teacher Form were used. Seçer (2016) states that experts stress the necessity of re-observing the scale (repetition of construction validity) when more than a year is spent after the validity and reliability analyzes of any developed or adapted instrument (pp. 106-107). For this reason, a confirmatory factor analysis was performed on the physical aggression and relational aggression subscales of the Preschool Social Behavior Scale-Teacher Form adapted to Turkish in 2008. Confirmatory factor analysis of the physical aggression and relational aggression subscales of Preschool

Social Behavior Scale-Teacher Form was performed on 328 out of 863 participants from the original study. As a result of the analysis made, it was seen that the standardized factor loadings of all items were valued at .30 and above. Modification suggestions regarding the model have been reviewed. The model was found to have three modification suggestions and modifications were made. As a result of the analysis fit indices were found respectively as; $\chi^2/sd = 3.97$, RMSEA=.076, RMR=.020, GFI=.93, AGFI=.91 and CFI=.97. Cronbach Alpha internal consistency coefficients of Preschool Social Behavior Scale-Teacher Form were also recalculated and Cronbach Alpha internal consistency coefficient of physical aggression subscale was found as .94; Cronbach Alpha internal consistency coefficient of relational aggression subscale was found as .93.

Data Collection Process and Data Analysis

The data was collected between the dates March 2nd, 2017 and April 6th, 2017. During the data collection period of the research, 15 kindergarten administrators from the sample were interviewed and informed about the research. In this context the scales prepared were presented. While mothers are asked to fill Personal Information Form, Child Emotional Expression-Mother Form and Emotion Regulation Scale, teachers are asked to fill the Preschool Social Behavior Scale-Teacher Form. The researcher added the contact information so that mothers can call when they have any questions. It is important to emphasize that participants should not write the names of their children/pupils. Finally, it has been reported that the answers given by the mothers and the teachers will be kept confidential and the results obtained will not be shared with anyone.

Prior to the analysis of the data obtained in the study, the normal distributions were examined with the kurtosis and skewness coefficients. When the values of the kurtosis and skewness are between -3 and +3 it is accepted as a sign of normal distribution (Tabachnick & Fidell, 2007, as cited in Kızıldağ, Demirtaş Zorbaz, & Zorbaz, 2017). It can be said that the data obtained from this study have normal distribution (see Table 6). The autocorrelation between the variables was tested by means of the Durbin-Watson coefficient. The Durbin-Watson coefficient ($d=1.666$) calculated for physical aggression dependent variable and other independent variables found as Durbin-Watson coefficient for relational aggression dependent variable and other independent variables ($d=1.584$). Accordingly, the Durbin-Watson coefficient which was calculated at a value between 1.5 and 2.5 can be interpreted as a sign of no autocorrelation problem among the variables (Kalaycı, 2008). Whether or not there was a multiple link problem among the independent variables of the study was examined by considering the variance inflation factor (VIF). If the variance inflation factor is less than 10, it can be interpreted that there is no multiple connection problem between the independent variables. Variance inflation factor values for the independent variables range from 1.14 to 2.07. These values show that there is no multiple connection problem that is not suitable for regression analysis (Büyüköztürk, 2009).

The t test was used to determine whether there was a significant difference in aggression levels of preschool children in terms of gender variable, and One-Way ANOVA was used to determine whether there was a significant difference regarding age variable. In case of difference in the analysis of variance the Post-Hoc Scheffe Test was used to determine which age group was causing the difference. Hierarchical linear multiple regression analysis was used to determine the power of predicting preschool children's aggression levels of emotional expression and emotional regulation skills. Analyzes were examined via SPSS 22.0 package program at .01 and .05 significance levels.

Results

In this part, the results of the analysis to determine whether the physical and relational aggression mean scores of the preschool age children differ significantly according to gender and age variables, then the relations between the variables examined in the study and the results of hierarchical multiple linear regression analysis are presented.

Table 2. T-test Results of Preschool Children's Physical and Relational Aggression Scores Regarding Gender Variable

Dependent Variable	Gender	n	\bar{X}	Sd	t	p
Physical Aggression	Girl	427	7.84	3.47	7.00	.000**
	Boy	436	9.81	4.71		
Relational Aggression	Girl	427	9.94	4.47	1.05	.782
	Boy	436	10.26	4.44		

** $p < .01$

In Table 2, the t-test results show that there is a significant difference between the levels of physical aggression of girls and boys ($t = 7.00$; $p < .01$) and there is no meaningful difference between girls or boys in terms of the levels of relational aggression ($t = 1.05$; $p > .01$). Considering the average ages of physical aggression of girls and boys in preschool period, it shows that boys ($\bar{X} = 9.81$) showed higher level of physical aggression than girls ($\bar{X} = 7.84$). The difference between boys and girls is statistically significant. However, no statistically significant difference was found between the mean scores of relational aggression of preschool children regarding gender.

Table 3. Preschool Children's Physical Aggression Mean Scores and Standard Deviation Values in Terms of Age Variable

Age	N	\bar{X}	Sd
3	84	9.84	4.43
4	301	9.41	4.68
5	477	8.29	3.85

In Table 3, it is seen that with the increase of preschool children's age, the physical aggression mean scores decrease.

Table 4. Preschool Children's ANOVA Test Results on Physical Aggression Scores in terms of Age Variable

The Source of the Variance	Sum of Squares	sd	Mean of Squares	F	p	Difference
Intergroup	327.021	2	163.511	9.185	.000**	3-5
Ingroup	15291.565	859	17.802			4-5
Total	15618.586	861				

** $p < .01$

In Table 4, we see that preschool children's physical aggression mean scores differ significantly regarding age variable [$F = 9.185$; $p < .01$]. The Post-Hoc Scheffe Test was conducted to find out which group was causing the difference. According to Scheffe Test results, three-year-old children's physical aggression mean scores ($\bar{X} = 9.84$) were higher than the physical aggression mean scores of five year old children ($\bar{X} = 8.29$). Similarly, it was understood that four-year-old children's physical aggression mean scores ($\bar{X} = 9.41$) were higher than five-year-old children's physical aggression mean scores ($\bar{X} = 8.29$). In addition, the mean scores of three-year-olds' physical aggression ($\bar{X} = 9.84$) were higher than the four-

year-olds' physical aggression mean scores ($\bar{X}= 9.41$), but the difference between the scores was not significant. According to these results, preschool children's physical aggression levels from age three to age five and from age four to age five decrease.

Table 5. Relational Aggression Mean Scores and Standard Deviation Values of Preschool Children in terms of Age Variable

Age	N	\bar{X}	Sd
3	84	10.01	4.20
4	302	10.57	4.70
5	477	9.69	4.36

In Table 5, we see that preschool children's relational aggression mean scores increase from age three to age four, and decrease from age four to age five.

Table 6. Preschool Children's ANOVA Test Results on Relational Aggression Scores in terms of Age Variable

The Source of the Variance	Sum of Squares	sd	Mean of Squares	F	p	Difference
Intergroup	186.163	2	93.081	4.720	.009**	4-5
Ingroup	16960.379	860	19.721			
Total	17146.542	862				

** $p < .01$

In Table 6, we see that preschool children's relational aggression mean scores differ significantly regarding age variable [$F=4.720$; $p < .01$]. According to the Scheffe Test results, the four-year-old children's relational aggression mean scores ($\bar{X}= 10.57$) were significantly higher than that of five-year-old children ($\bar{X}=9.69$). However, no significant difference was found between three-year-old and four-year-old children in terms of relational aggression mean scores.

The results of the analysis conducted to determine whether there is a significant relationship between preschool children's emotional expressions (happy, sad, angry and fear) and emotional regulation skills (emotional regulation, lability negativity and emotion regulation total) or not were presented in Table 7.

Table 7. Relationships Between Preschool Children's Emotional Expression Skills and Emotion Regulation Skills and Physical and Relational Aggression Levels

	1	2	3	4	5	6	7	8	9
1 PA	1								
2 RA	.67**	1							
3 Happy	.03	.01	1						
4 Sad	-.09**	-.08*	-.24**	1					
5 Angry	.10**	.07*	-.23**	.62**	1				
6 Scared	-.08*	-.06	-.18**	.61**	.49**	1			
7 ER	-.05	-.04	.26**	-.08*	-.16**	-.09**	1		
8 L/N	.24**	.18**	-.14**	.20**	.45**	.17**	-.37**	1	
9 ERT	-.17**	-.13**	.23**	-.19**	-.39**	-.18**	.61**	-.68**	1
Mean	8.83	10.11	13.16	10.20	9.62	9.73	25.43	22.29	71.06
Ss	4.25	4.46	1.57	2.86	3.17	3.18	3.14	4.87	6.57
Kurtosis	1.239	.242	1.756	-.548	-.042	.080	-.167	.868	.574
Skewnes.	1.706	1.026	-1.355	.091	.465	.501	-.198	.704	-.471

** $p < .01$; * $p < .05$ PA: Physical Aggression, RA: Relational Aggression, ER: Emotion Regulation, L/N: Lability /Negativity, ERT: Emotion Regulation Total

The Pearson correlation coefficients of preschool children's physical aggression levels are respectively as follows: expressing sadness -.09, expressing anger .10, expressing fear -.08, for expressing lability/negativity .24 and for emotion regulation total -.17 are presented respectively in Table 7. Positive and significant correlations were found between preschool children's physical aggression levels, anger expression scores and lability/negativity scores ($p < .01$). We see that while preschool children's physical aggression scores were increasing anger expression scores and lability/negativity (dysregulation) scores also increased. Secondly, we see that preschool children's physical aggression levels regarding the scores of sadness expression, emotional regulation total ($p < .01$) and expression of fear ($p < .05$) had a negative and meaningful relationship. As preschool children's expression of sad emotion scores, emotional regulation total scores and fear expression scores increased physical aggression scores decreased. There was no meaningful relationship ($p > .05$) between preschool children's physical aggression levels, expression of happiness and emotional regulation scores.

When Table 7 is examined, a relationship is seen in preschool children's relational aggression scores related to other independent variables. According to the Pearson correlation coefficients obtained, preschool children's aggression scores were calculated respectively as follows; sadness expression scores -.08, anger expression scores .07, lability/negativity scores .18 and emotion regulation total scores -.13. A positive and significant correlation was found between preschool children's relational aggression and anger expression scores ($p < .05$) and lability/negativity scores ($p < .01$). We see that as the preschool children's anger expression scores and lability/negativity (dysregulation) scores increase, the relational aggression scores also increased. A negative and significant relation is found between preschool children's relational aggression and sadness expression scores -.08 ($p < .05$) and emotional regulation total scores ($p < .01$) were. While preschool children's sadness expression scores and emotional regulation total scores increase their relative aggression scores decreased. There were no significant relations between preschool children's relational aggression and happiness expression scores, fear expression scores and emotion regulation scores ($p > .05$).

The results of hierarchical linear multiple regression analysis to determine whether preschool children's emotion expression (happiness, sadness, anger and fear) and emotion regulation skills (emotion regulation, lability/negativity and emotion regulation total) significantly predicted physical aggression levels or not are presented in Table 8.

Table 8. The Hierarchical Linear Multiple Regression Analysis Results of Preschool Children's Emotional Expression and Emotion Regulation Skills for Predicting Their Physical Aggression Levels

		B	Se	β	t	p	R	R ²
1	Stable	8.35	1.47		5.65	.00**	.24	.06
	Happy	.08	.09	.03	.89	.37		
	Sad	-.30	.07	-.20	-4.32	.00**		
	Angry	.38	.06	.28	6.62	.00**		
	Scared	-.12	.06	-.09	-2.12	.03*		
2	Stable	10.74	6.35		1.69	.09	.32	.11
	Happy	.10	.09	.03	1.07	.28		
	Sad	-.25	.07	-.17	-3.63	.00**		
	Angry	.21	.06	.16	3.43	.00**		
	Scared	-.10	.05	-.08	-1.90	.06		
	ER	-.17	.09	-.13	-1.80	.07		
	L/N	.40	.09	.46	4.46	.00**		
	ERT	-.21	.08	-.33	-2.42	.02*		

** $p < .01$, ER: Emotion Regulation, L/N: Lability/Negativity, ERT: Emotion Regulation Total

In the first step of the model according to Table 8, it was determined that the emotional expression sub-dimensions were meaningful ($R^2=.06$) and explained 6% of the total variance. The sub-dimension of sadness expression ($p<.01$), anger expression ($p<.01$) and fear expression ($p<.05$) were meaningful predictors of physical aggression in children. The expression of happiness subscale is not a significant predictor of physical aggression in children ($p>.05$). While the sub-dimension of anger expression is a positive predictor of physical aggression; the expression of sadness and fear were found as negative predictors of physical aggression.

In the second step, emotional regulation sub-dimensions and emotion regulation total scores were added to the model and it was seen that it significantly contributed to the model ($R^2=.11$). The contribution to the total variance of emotional regulation skills subscales and emotion regulation total scores was calculated as 5%. With the addition of emotional regulation skills subscale and emotional regulation total scores, the significance of fear expression subscale from emotional expression sub-dimension in predicting physical aggression in children was lost ($p>.05$).

It is understood that while the lability/negativity (dysregulation) subscales of emotion regulation skills were positive and significant ($p<.01$) predictors of physical aggression; the emotion regulation total scores were negative and significant ($p<.05$) predictor of physical aggression seen in children. It was observed that emotion regulation subscale of emotion regulation skill sub-dimension was not a meaningful predictor of physical aggression seen in children ($p>.05$).

The results of the hierarchical linear multiple regression analysis to determine whether preschool children's emotional expression (happiness, sadness, anger and fear) and emotion regulation skills (emotion regulation, lability negativity and emotion regulation total) predicted their relational aggression levels or not is presented in Table 9.

Table 9. Results of Hierarchical Linear Multiple Regression Analysis of Children's Emotional Expression and Emotion Regulation Skills Predicting Their Relational Aggression Levels

		B	Se	β	t	p	R	R ²
1	Stable	10.62	1.56		6.80	.00**	.20	.04
	Happy	.09	.09	.06	.16	.86		
	Sad	-.28	.07	-.18	-3.85	.00**		
	Angry	.32	.06	.22	5.20	.00**		
	Scared	-.08	.06	-.06	-1.46	.14		
2	Stable	2.47	6.80		.36	.71	.25	.06
	Happy	.03	.10	.01	.30	.76		
	Sad	-.25	.07	-.16	-3.34	.00**		
	Angry	.19	.06	.13	2.85	.00**		
	Scared	-.07	.06	-.05	-1.29	.19		
	ER	-.11	.08	-.08	-1.08	.27		
	L/N	.29	.09	.31	2.97	.00**		
ERT	-.14	.09	-.20	-1.49	.13			

** $p<.01$, ER: Emotion Regulation, L/N: Lability/Negativity, ERT: Emotion Regulation Total

When Table 9 is examined, we see that in the first step of the determined model, the contribution of the emotional expression sub-dimensions to the model ($R^2=.04$) were meaningful and explained 4% of the total variance. Sub-dimensions of emotional expression such as expressing sadness ($p<.01$) and anger ($p<.01$) were significant predictors of relational aggression seen in children. The sub-dimensions of expressing happiness and fear were not predictors of relational aggression ($p>.05$). While the anger

expression sub-dimension is a positive predictor of relational aggression; expressing sadness sub-dimension was found to be a negative predictor.

In the next step, emotion regulation sub-dimensions and emotion regulation total scores were added to the model and was found to contribute to the model ($R^2=.06$) significantly. The contribution of emotional regulation skill sub-dimensions and emotion regulation total scores was calculated as 2% to total variance. From the subscales of emotion regulation skills, the sub-dimension of lability/negativity (dysregulation) was found as a positive and significant ($p<.01$) predictor of physical aggression seen in children. From the subscales of emotion regulation skills, emotional regulation was found as an insignificant predictor of relational aggression ($p>.05$). Similarly, emotional regulation total scores were not found to be significant ($p>.05$) predictors of relational aggression seen in children.

Discussion and Conclusion

Preschool children's physical aggression levels differ significantly in terms of gender. In the present study, the result that boys exhibit more physical aggression than girls is analogous with the related studies in the literature (Alink et al., 2006; Björkqvist, 2017; Campbell, Shirley, & Caygill, 2002; Crick et al., 2006; Erdinç, 2009; Gültekin Akduman, 2012; Juliano, Werner, & Cassidy, 2006; Kadan, 2010; Karaca, Gündüz, & Aral, 2011; Ostrov, Crick, & Stauffacher, 2006; Ostrov & Keating, 2004; Ostrov et al., 2004; Özdemir & Tepeli, 2015; Taner Derman, 2009; Uysal & Dinçer, 2013; Yıldırım, 2008). The physical aggression seen in boys may be related to language skills (Dionne, Tremblay, Boivin, Laplante, & Pérusse, 2003; Séguin, Parent, Tremblay, & Zelazo, 2009). Physical aggression consists of behaviors that can be clearly observed, such as hitting, nudging, kicking, and biting. In several studies, it is stated that there might be differences in all language skills of boys and girls who are between 36 and 72 months (Zhang, Jin, Shen, Zhang, & Hoff, 2008). However, after the end of their third year, boys reach the same language levels as the girls (Simonsen, Kristoffersen, Bleses, Wehberg, & Jørgensen, 2014; Uslu, 2017). The results of the study that Girard et al. (2014) conducted with children aged between 17-72 months to determine the level of physical aggression and language skills longitudinally, also support the results of the present study. Girard et al. (2014) emphasized that there is a relationship between 17-41 month-old children's physical aggression levels and language skills, but that after the 41st month such relationship loses its significance. Considering the children's age in the present study (36-72 months), the high physical aggression observed in boys may be related to factors other than inadequacy in language skills.

Gender perceptions that parents have instilled in their children may have caused the boys to have more physical aggression. Preschool children may tend to perceive certain behaviors as being related only to women or men (Aina & Cameron, 2011; Halim & Ruble, 2010; Henshaw, Kelly, & Gratton, 2006; Şıvgın & Deniz, 2017; Ünlü, 2012; Yağan Güder & Alabay, 2016). Adults directing their children (Aina & Cameron, 2011; Gündüz Kalan, 2010; Halim & Ruble, 2010; Kılıç, 2013; Witt, 2000) by saying "girls do/do not act like that" and "boys do/do not act like this" may be one of the reasons for the high level of physical aggression seen in boys. The higher level of physical aggression seen in boys may be because of the media products (Arnas & Erden, 2006; Daly & Perez, 2009; Fitzpatrick, Oghia, Melki, & Pagani, 2016; Kirkorian, Wartella, & Anderson, 2008; Ostrov et al., 2006; Piotrowski, 2017) and video/computer games (Hastings et al., 2009; Polman, De Castro, & Von Aken, 2008) they are exposed to. In various cartoons and animated films, usually the aggressive character is a male figure (Spider-Man, X Men, Popeye, etc.) and this may have caused the boys to identify with these characters. In addition, in these cartoons and animated films, characters who fight against the evil ones are presented as heroes. Toys of these characters are produced, shown as fighters/ aggressive/heroic and their images can be printed on children's clothes that sold all over the world. As boys watch these characters with "heroic" traits and play with their toy representations, the level of identification they build with them may increase. The results of various studies (Huessman & Taylor, 2006; Wilson, 2008, Yıldırım, 2008) emphasize that boys are particularly affected by violent television programs, more so than girls.

According to another finding of the present research, the relational aggression levels of preschool children do not differ significantly in terms of gender. When the literature is examined, we find that the results of some researches conducted in Turkey and abroad do not overlap with the findings in this research. According to the results of various studies regarding preschool children's aggression levels (Crick et al., 2006; Crick, Casas, & Mosher, 1997; Ostrov et al., 2006; Ostrov & Keating, 2004; Ostrov et al., 2004; Özdemir & Tepeli, 2015) it is found that girls' relational aggression levels were significantly higher than the boys'. In other studies carried out (Gültekin Akduman, 2012; Karaca et al., 2011; Landsford et al., 2006; Ostrov & Bishop, 2008; Juliano et al., 2006; Morine et al., 2011; Uysal & Dinçer, 2013) there was no significant difference between the levels of relational aggression of preschool children in terms of gender and this was similar with the findings of the present research. Tremblay et al. (1999) emphasize that preschool children's physical aggression levels reach the highest point between the ages of two and four and this is at a higher level in boys, but after that period children begin to use other strategies instead of physical aggression to resolve conflicts. Instead of physical aggression, children may prefer relational aggression, which is perceived as a "less serious" form of aggression. Similarly, Shaw (2006) suggests that preschool children develop other alternatives to physical aggression because of the negative feedback they receive when they show it. Boys in the sample of this study may have exhibited relational aggressive behaviors instead of physical aggression in the classroom environment due to the negative feedback they received from their surroundings (teachers, peers, parents, etc.). In addition, it might be thought that where physical aggressive behaviors (such as hitting, spitting, kicking) are easy to notice, the relational aggression behaviors (such as gossiping about the other child) is more difficult to capture. Kuppens, Laurent, Heyvaert, and Onghena (2013) emphasized that for teachers and parents it is very difficult to observe and evaluate relational aggression. Similarly, in several studies (Cheng, 2009; Harachi, Catalano, & Hawkins, 1999; Hurst, 2017; Young et al., 2010) it is indicated that while physical aggression can easily be observed, the relational aggression is very difficult to observe and determine. In this study, it can be considered that the teachers who graded preschool children's relational aggression levels had some difficulty in determining the relational aggression emerging in children.

It can be considered that the relational aggressive behaviors children exhibited are related to language skills. In this context, in a study (Razmjooe, Harnett, & Shahaeian, 2016) examining the relationship between the five-year-old preschool children's relational aggression levels and their language skills revealed a significant relationship between children's language skills and their relational aggression levels. In terms of relational aggression levels reported by teachers, girls showed a higher level of relational aggression than boys did. However, it is understood that girls significantly performed better than boys in terms of both receptive and expressive language skills. Girls with more advanced language skills resorted to higher levels of relational aggression, more so than boys. Similar results are seen in the studies of Bornica, Arnold, Fisher, Zeljo, and Yershova (2003) and Shahaeian, Razmjooe, Wang, Elliot, and Hughes (2017). Girls with better language skills display more relational aggression than boys. The girls and boys with similar language development levels in the present study may be thought as the cause of the insignificance difference between the relational aggression levels of girls and boys.

In this study, we see that preschool children's physical aggression levels decreased from three years to five years and from four years to five years; this finding of the research is in fact supported by the literature. In several studies conducted with preschool children (Alink et al., 2006; Alisinanoğlu & Kesicioğlu, 2010; Crick & Rose, 2000; Dearing, Zachrisson, & Nærde, 2015; Kadan, 2010; Keenan, 2012;

Murray Close & Ostrov, 2009; Ostrov et al., 2006; Tremblay et al., 2004) it is emphasized that children's physical aggression levels decrease while their ages are increasing. Shaw (2006) emphasizes that preschool children can not reach the comprehension level of physical aggression negativity until the age of three or four. Aggression at this point is a handy tool for children to get what they want. Preschool-age children tend to use alternative means than physical aggression to get what they want, due to negative feedbacks from adults. Thus, from a developmental point of view, age-related decline in preschool children's physical aggression level may be considered normal (Dearing et al., 2015; Murray Close & Ostrov, 2009; Tremblay et al., 1999).

In this study, it was observed that preschool children's aggression levels decreased from age four to age five. Four-year-olds have higher levels of relational aggression than five-year-olds. This finding does not overlap with research results of the studies conducted with preschool children and are limited in number (Morine et al., 2011). Crick and Rose (2000) indicate that preschool children's relational aggression may increase with age due to their increased cognitive abilities and awareness of complex social networks. Although the age and relational aggression variables are not fully understood, it is suggested that the use of relational aggression may increase, contrary to physical aggression which tends to decrease with age. On the other hand, the results of Crick et al. (2006) are similar to the finding of the present research. Crick et al. (2006) measured the physical and relational aggression levels of preschool children at four different times for 18 months in a longitudinal patterned study. According to the results of the study, there was no difference in the level of the children's aggression levels in terms of time. It has been reported that relational aggression is moderate and constant in preschool children. Relational aggression is a concept that has emerged in the 1990s. For too long, researches associated aggression with men (elementary school children and adolescents), and in particular focused on physical aggression (Ostrov & Keating, 2004; Richardson, 2005; Tremblay, 2000). Until the early 1990s, it was also assumed that preschool children had not enough cognitive, social, and emotional capacities to demonstrate relational aggression to their peers (Belden, Gaffrey, & Luby, 2012). In this context, it can be said that relational aggression in preschool children is therefore very new.

According to another finding in this study, from preschool children's emotion expression, we see that the levels of expressing feelings of anxiety, anger, and fear were significantly predictive of physical aggression levels. It was also found that, from preschool children's emotional regulation skills lability/negativity and emotional regulation total levels predicted their physical aggression significantly. Preschool children's total levels of expressing sadness, fear, and emotion regulation are predicting their physical aggression negatively; and levels of expressing anger and lability/negativity were found to predict their physical aggression positively.

Miller et al. (2006) concluded that preschool children's levels of expressing their negative emotions predicted their physical aggression levels significantly. In this study, the expression levels of sadness, anger and fear that are accepted as preschool children's negative emotions were found to be significant predictors of physical aggression. While in another study it is found that there was no association between children's levels of expressing happiness and sadness and their physical aggression levels; it is reported that children's levels of anger expression was a significant predictor of physical aggression. When assessed in terms of the results Bohnert et al. (2003) obtained, it is found that children's level of happiness is not a significant predictor of physical aggression, and this finding is similar to the findings of the present study. Similarly, children's levels of anger expression were found to be a significant predictor of the physical aggression they exhibited and is aligned with the findings of this study. The results of the study that Bohnert et al. (2003) conducted also show that there is no

significant relationship between children's levels of sadness and physical aggression. This result is not in agreement with the findings of the present research regarding the relationship between expressing sadness and physical aggression. Similarly, Hanish et al. (2004) reported in their study that children's levels of anxiety/sadness were not correlated with their aggression. On the other hand, in another study that examined the effects of anger and sadness ruminations on depression and aggression levels of children (Harmon, Stephens, Repper, Driscoll, & Kistner, 2017), it is found that while anger ruminations predict children's aggression levels positively, sad ruminations predict it negatively. The results of the study that Harmon et al. (2017) carried out overlap with these findings.

An individual who has experienced sadness for any reason may struggle to give up on a goal or develop a new plan that includes avoiding the interaction with other people (Reis, Habigzang & Sperb, 2015, as cited in Duarte, Brito, & Reis, 2016). From this point of view, the negative direction of physical aggression of children's expression levels of sadness in this research may have been caused by the fact that children who are sad for some reason refrain from interacting with other children. A child who suffers from injustice in any sequence of activities (food line, taking turns while playing with toys, etc.) may feel saddened by this situation. Instead of acting aggressively and trying to protect his place in the line for the activity, s/he may give up and develop a new plan.

Hubbard et al. (2002) reported in their study that there is a meaningful positive relationship between children's feelings of anger and their reactive aggression. The results of Hubbard et al. (2002) are similar to the results of this research. There are also other studies (Hanish et al., 2004; Ostrov et al., 2013) showing that preschool-age children's anger emotions are related to aggressive behavior significantly and they support the findings of the present study. Anger, though not always, is a driving force in the emergence of aggression (Averill, 1983; Ekman, 1993). In fact, it is stated that aggression is used incorrectly in the same way as anger (Varburton & Anderson, 2015). Anger emotion is an important trigger of aggression, so when preschool children feel anger this can also turn to an aggressive behavior. At this point, children's parents and/or peers may have been influential in observing anger turned into aggressive behavior. When a child gets angry during any dispute (for example, if s/he doesn't get a toy) and turns this anger into an aggressive behavior, s/he may realize that his or her goals are attained easier due to using aggression as a tool. The transformation of anger into aggression may also be due to the lack of language skills of children. Aggression can be a useful tool for a child who is not capable of expressing his feelings via saying "this makes me angry, please don't do it/ stop".

There was no studies found mentioning the relationship between preschool children's fear expression and physical aggression levels directly, though Kivenson Baron (2010) concluded in their study that three and four-year-old children exhibiting high level of fearlessness, exhibited high physical aggression levels when they are compared with their peers. Similarly, Gao et al. (2010) reached a conclusion in their longitudinal study that children with weak fear conditioning at three, four, five, and six years of age display high levels of aggression when they reach age eight. The results of these two studies suggest that fearlessness increases physical aggression in children. In this study, preschool children's levels of fear expression were found to be negative and meaningful in predicting their physical aggression. Considering the consequences of preschool children's fearlessness or more fearless behaviors increasing their physical aggression in them (Gao et al., 2010; Kivenson Baron, 2010), a reduction of physical aggression levels in children expressing fear can be considered a possible condition. In this respect, the results of Gao et al. (2010) and Kivenson Baron (2010) can be correlated to the result of our research.

The findings of several studies examining the relationship between preschool children's emotional regulation difficulties and physical aggression (Kayhan Aktürk, 2015; Miller et al., 2006; Helmsen et al., 2012; Romanchych, 2014) have supported the findings of the present study. Miller et al. (2006) indicate that preschool children's levels of emotional regulation are significantly predicting their physical aggression. However, they found that there was no relation between children's emotional regulation and their physical aggression. In Miller et al. (2006) children's emotion regulation skills were determined by the "Emotion Regulation Scale" (Shields & Cicchetti, 1997), which was also used in the present study. Likewise, Kayhan Aktürk (2015), Helmsen et al. (2012) and Romanchych (2014) have found that there is a positive and significant relationship between preschool children's emotional regulation difficulty levels and their physical aggression. The results of all these three studies support the findings of our research. Difficulty in emotion regulation is mainly manifested in the difficulty or inability to deal with emotions that cannot be recognized, that are misunderstood, feelings that are unacceptable, the inability to use the correct emotion regulation strategy, difficulty in the control of impulses, failure to develop objective-oriented behavior, in feelings that are being experienced or the ones that are experienced before (Leahy, Tirsch, & Napolitano, 2011). Because the problematic situation is not the emotion itself, but the difficulty or ability to cope with it or accepting it. While individuals with strong emotions can maintain the desired emotion, increase or suppress an undesirable feeling, individuals who have difficulty in this issue continue to experience unwanted emotions or even exacerbate them. In other words, dysregulation, which may occur in children, may cause behavioral and emotional development disorders (McIntyre, Blacher, & Baker, 2006).

Ari and Yaban (2016) reached the conclusion that preschool children's emotional regulation skills are negative and significant predictors of their physical aggression. Other studies presenting findings of negative relationship between preschool children's emotional regulation skills and physical aggression (Bandon et al., 2010; Chang et al., 2002; Jun Ah et al., 2014; Romanchych, 2014) also support the results of our study. In this research, preschool children's emotional regulation skills are examined in two sub-dimensions: "Emotional regulation" and "lability/negativity". In addition, emotion regulation total scores obtained by inverse coding of all the negative items in the Emotion Regulation Scale were also used. In the present study it is found that preschool children's total levels of emotion regulation predict physical aggression negatively and significantly. Ramsden and Hubbard (2002) obtained "emotional regulation total" scores by reversing the negative items in the "Emotion Regulation Scale", as in this study, and they examined children's emotional regulation skills and physical aggression levels. According to the results of the study, it was found that there is a high level and a meaningful relationship between the children's total emotion regulation levels and physical aggression levels in the negative direction. This result is in parallel with the findings of this research. Emotion regulation not only allows the individual to have an inner state of emotion, attention, motivation, but also behavior that accompanies emotion. The regulation of emotion can take place on positive or negative emotions. However, there may be different output levels depending on the situation experienced. For example, positively, a preschooler may have anger when a provoked by a peer. Babies or young children need others to use emotion regulation strategies. In time, an internal team of influences direct their emotions and now the child begins to complete his emotion regulation strategies with his own effort. By making emotions more manageable, one can cope with his feelings (Eisenberg & Spinrad, 2004; Garnefski et al., 2001; Leahy et al., 2011) and prevent undesirable behavior.

Another finding in this study is that preschool children's sadness and anger expression levels predicted levels of relational aggression significantly in their emotional expressive skills. Anger is the

basic emotion that plays a role in the emergence of aggression. Preschool period is considered as the most intense emotion that children exhibit in their interpersonal interactions and lead to various problems, especially aggression (Spielberger, Jacobs, Russell, & Crane, 1983). It has been observed that when some children experience negativity/frustration they reflect the anger they feel via ignoring their peers or through excluding them from the game group, which are forms of relational aggression (Crick & Grotpeter, 1995). Ostrov et al. (2013) concluded that preschool children had a positive and significant relationship between their anger expression levels and relational aggression levels. This result overlaps with the finding of our research.

Individuals' loss of social roles is closely associated with sadness level (Bowlby, 1980). Relational aggression, unlike physical aggression, is about harming people's social relations and social positions. Relational aggression is seen as taking the child out of the game when he does not do what he is asked to do or preventing other children in the game group playing with him (the child who does not do what they want) and not letting him be friends with others in the play group. The individual experiencing sadness for any reason may give up a goal in relation to the sadness, and even refrain from interacting with people (Reis, Habigzang, & Sperb, 2015, as cited in Duarte et al., 2016). Taking this into consideration, children's sadness levels may have a predictor effect on their relational aggression in a negative way, which this research finds significant.

Another finding in the research is that preschool children's lability/negativity levels affect their relational aggression levels positively and significantly. When the literature is examined, it is seen that there are studies examining emotional regulation in children showing physical aggression while there are limited studies examining emotion regulation in children showing relational aggression (Conway, 2005). In a study conducted preschool-based (Ari & Yaban, 2016), it is stated that preschool children's emotional regulation skills are a significant predictor of relational aggression in these children. In the study (Ari & Yaban, 2016), applied the Emotion Regulation Scale to mothers and teachers. The situation of children's emotional regulation skills predicting their relational aggression was found as a significant predictor only in teacher ratings, whereas they were not meaningful in the ratings of the mothers. Taking this into consideration, and when the teacher ratings are excluded, the results of the study are consistent. In two separate studies conducted in South Korea examining preschool children's emotional regulation skills and their level of relational aggression (Jun Ah et al., 2014) and in two different studies carried out in Croatia (Mihic et al., 2016), it is found that as children's emotion regulation skills increase their relational aggression decreased. These results do not overlap with the findings of our research. However, it is emphasized that little is known about how emotional regulation processes relate to physical and relational aggression (Sullivan, Helms, Kliewer, & Goodman, 2010).

In studies examining children's emotional regulation skills and their relational aggression levels (Ari & Yaban, 2016; Jun Ah, et al., 2004; Mihic et al., 2016), only the results related to preschool children's emotional regulation skills and their relational aggression are given. In several studies (Davidson et al., 2000; Eisenberg et al., 1994; Eisenberg & Fabes, 1992; Romanchych, 2014), emotional regulation was associated with high aggression responses, impulsive violence behaviors, outbursts and outbreaks. Similarly, it is stated that the difficulties in emotion regulation are related to stress, depression, anxiety disorder, anger and aggression (Eisenberg & Fabes, 1992; Garnefski et al., 2001). However, in the context of available resources, the relationship between emotional regulation difficulties and aggression was investigated for the first time in this study, and it was found that preschool children's emotional regulation predicted their relational aggression levels negatively and significantly.

Limitations

This study, in which preschool children's aggression level is examined as a dependent variable, has some limitations. The data were obtained through quantitative measurement tools. It also covers only children aged three to five who attend preschools, so the results of the relevant variables are unclear for children who are not attending preschool educational institutions. In addition, in all kindergartens, the number of children in the group of age three was quite low compared to ages four and five: only 10% of the study group consisted of three-year-old children. Also, the failure to collect data about families' income status made it impossible to examine aggression in terms of socio-economic status. Finally, the results of the study were confirmed by the literature that played important roles in the emergence of aggression. However the present study is limited in terms of children's language development level, temperament, attachment styles of parents, use of TV / computer / tablet (media tools) and parental attitudes.

Suggestions

In this study, it was determined that boys exhibited more physical aggression than girls but both girls and boys exhibited similar relational aggression levels. Aggression is an unwanted behavior and in this regard, parents and teachers can take precautions to reduce the higher level of physical aggression seen especially in boys, and, if necessary, provide professional support. It may be possible for the parents to keep their children away from the toys of characters showing violence in media, as they may increase aggression. Also, families and other adults should not approach children's aggressive behaviors with a "gendered" point of view: children can be informed about physical aggression being a negative behavior for both boys and girls, in order that their awareness can be raised. Teachers can also guide children through various stories or scenarios in order to help children resolve conflicts without physical aggression (and at the same time relational). Teachers can receive support from school guidance/counselors about the issue, and parent training can be arranged to raise awareness about aggression when necessary. At this point, it should not be overlooked that the 2013 Preschool Education Program gives special importance to family education. The Ministry of National Education, together with the 2013 Preschool Education Program, has published the IFSTGPEP (Integrated Family Support Training Guide with Preschool Education Program) program. In IFSTGPEP, preschool teachers and preschool education principals are given a detailed theoretical and practical content about family education and family participation studies. Parents who attend the child's preschool education in this context can be included in the family education and family participation activities in a planned manner. For parents who cannot participate in the family education and training due to working hours, it can be supported through home visits. Paying additional tuition fees to teachers who conduct such studies may increase the motivation of the teachers and lead all parents to benefit from family education.

It has been observed that, generally, both physical and relational aggression levels of preschool children decrease with age. Based on this result, it may be useful to keep preschool children away from role models displaying aggression in order that they don't learn aggression at an early age. Individuals within the family can use solutions that do not involve violence and aggression in order to cope with ordinary conflicts and they can be positive role models for children. Moreover, families and teachers should be informed that aggressive behavior is not limited to physical and verbal: trainings to raise awareness can be given about relational aggression and teachers/families should know that relational aggression can be observed in children at an early age.

In the study, preschool children's anger expression levels and emotional regulation difficulties predicted both their physical and relational aggressions positively and significantly. Children's experiences of anger and difficulty in regulating their feelings are often shaped within the family. Particularly parents need to be good role models for children in terms of expressing their anger feelings and managing their various emotions, and experts can assist families to increase their knowledge and experience about these. Preschool education practices in Turkey are established within the universities and research centers, counseling centers attached to the Ministry of Education and passed through a coordination unit with the collaboration of local governments. Through this unit, various training and support services can be provided to families by assigning subject experts where required.

In the study, the data were obtained by means of quantitative measurement and from preschool children's mothers and teachers. In future studies, children's emotional expression levels, emotional regulation levels and aggression levels can be obtained both quantitatively and by taking data from children. In addition, longitudinal patterned researches can be conducted to observe preschool children's emotional expression levels, emotional regulation levels and aggression levels. Ersan (2016) stated that, in the introduction to many studies carried out in Turkey about the importance of preschool children included the results of studies conducted in the longitudinal pattern; but almost none of this longitudinal study in Turkey has stressed the addressing pattern. In addition, in the study it is mentioned that regarding preschool children in Turkey, there were only 16 longitudinal studies. The development of aggression, emotion expression, and emotion regulation in Turkish children can be better understood via longitudinal pattern researches, which can be defined as the monitoring of development at different times on the same individuals in terms of one/several variables. In this way, prevention or treatment of the undesired aggression phenomenon can be provided more scientifically and functionally. A similar approach is applicable for expressing emotions and emotion regulation.

In-service trainings can be organized for preschool teachers to support children's skills at emotion expression and emotional regulation. Similarly, in-service training can be organized to reduce physical and relational aggression.

Preschool children's level of aggression, in this sample examined in Turkey, can be examined in terms of children's language development, parent attachment styles, temperaments, usage of media tools and parental attitudes.

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