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Aggressive behaviours of 48- to 66-month-old children: predictive power of teacher–student relationship, cartoon preferences and mother's attitude

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ABSTRACT

The main purpose of this study is to identify the predictive power of the following variables for physical and relational aggression level of children: cartoon preferences of children, parental attitudes and teacher–student relationship. Study group consisted of 300 preschool children their mothers and 18 preschool teachers. The results showed a negative correlation between relational aggression and children's cartoon preferences and teacher–student relationship. There was a positive correlation between physical aggression and authoritarian attitude and a negative correlation between children's cartoon preferences and their democratic attitudes. Regression analysis showed that 28% of children's relationally and 18% of their physically aggressive behaviours were predicted by the variables examined in the study. Stepwise regression analysis indicated children's cartoon preferences predicted 15% of physically and 25% of relationally aggressive behaviours. Mother's democratic attitude was found to be the second powerful variable (3%) and then came the teacher–student relationship (1%).

Introduction

Throughout the years, a large body of studies about aggression has been conducted, and aggression has been defined, aggressive behaviours and risk factors have been described and early intervention programmes have been developed in these studies. It is also seen in these studies that a number of different definitions of aggression have been made and there is no consensus about which behaviours need to be considered aggressive behaviours. According to experts, aggression is defined as a kind of behaviour which an individual performs to harm and hurt someone physically, verbally, relationally and instinctually (Anderson & Bushman, 2002; Kirsh, 2006). The types of aggression defined for children in the literature are physical aggression, verbal aggression and relational aggression (Hamlett, 2007). In recent years, early childhood experts have accepted that physical and relational aggression are common and salient sub-types of aggression (Crick, Ostrov, Burr, et al., 2006) and they have stated that problems of physical and relational aggression have been observed beginning from the preschool period (Juliano, Stetson Werner, & Wright Cassidy, 2006; Özdemir & Tepeli, 2015; Swit & Mc Maugh, 2012).

Physically aggressive behaviours observed during preschool period are identified as follows: pushing a friend, pinching a friend, making a friend fall, squeezing a friend's throat or neck, spitting at a friend, throwing a ball at a friend, kicking a friend, biting a friend, pinching a friend's arm, sticking a toy to a friend's face, pulling a friend's hair, pulling a friend's ear, scratching a friend's face and throwing sand to a friend's eyes (Özdemir & Tepeli, 2015). Relationally aggressive behaviours include behaviours that intend to damage an individual's relationships in a peer group (Young, Nelson, Hottle, Warburton, & Young, 2010). Relational aggression can be defined as intentional decision-making that causes emotional damage using real relationships (Bowie, 2007; Crick, Ostrov, & Werner, 2006; McEvoy, Estrem, Rodriguez, & Olson, 2003). Actions described relationally aggressive are as follows: telling a friend to leave, threatening a friend, shouting at/getting angry with a friend, telling that s/he is not a friend, using a bad language, keeping a friend out of game, damaging a friend's belongings, gossiping about a friend, sticking one's tongue out at a friend, telling a friend that his picture is ugly, not holding a friend's hand, not letting a friend to playing-house corner and ruining a friend's game (Özdemir and Tepeli, 2015). Moreover, preschool children tend to use relational aggression in quite simple and concrete ways such as telling his peers that he will not invite them to his birthday party unless they meet certain conditions or he will resent and will not be friends anymore (Sevinç, 2003).

Although both physically and relationally aggressive behaviours are observed during preschool period, it is seen that studies primarily focus on physical aspect of aggression. On the other hand, during early childhood period not only physically but also relationally aggressive behaviours and being exposed to them are quite harmful to children. In conducted studies, it is emphasized that relational aggression is a situation as painful as physical aggression, its negative effect on individuals lasts longer and it causes academic failure and social problems (Yoon, Barton, & Taiariol, 2004).

Research results showing that development of children exposed to aggressive behaviour is affected negatively lead experts to identify the factors that affect physical and relational aggression observed in children. These studies investigated the effect of gender on physical and relational aggression (Akcan & Ergun, 2015; Ateş, 2005; Bonica, Arnold, Fisher, Zeljo, & Yershova, 2003; Burr, Ostrov, Jansen, Cullerton-Sen, & Crick, 2005; Chen, Wang, Chen, & Liu, 2002; Crick, Ostrov, & Wermer, 2006; Crick, Ostrov, Burr, et al., 2006; Erdinç, 2009; Kadan, 2010; Ostrov & Crick, 2007; Ostrov & Keating, 2004; Özdemir & Tepeli, 2015; Casas et al., 2006; Şen, 2009), the effect of the child's age (Alisinanoğlu & Kesici, 2010; Donat Bacıoğlu &Özdemir, 2012; Eratay, 2011; Kadan, 2010; Park et al., 2005), the effect of parental attitudes (Erdinç, 2009; Gülay Ogelman, Körükçü, & Ersan, 2015; Kadan, 2010), the effect of the number of siblings (Akcan & Ergun, 2015; Eratay, 2011; Kadan, 2010), the effect of the temperament traits of the child (Erdinç, 2009), education background of the parents (Erdinç, 2009; Kadan, 2010; Uysal & Dinçer, 2013), the effect of economic status (Akcan & Ergun, 2015; Stefan & Miclea, 2010), the effect of socio-economic status of parents (Akcan & Ergun, 2015; Stefan & Miclea, 2010), the effect of television (Akcan & Ergun, 2015; Kadan, 2010) and the effect of preschool teachers (Gülay Ogelman et al., 2015; Uysal & Dinçer, 2013). These research findings indicate the effects of genetic factors as well as environmental factors on child's aggressive behaviours. van Beijsterveldt, Verhulst, Molenaar, and Boomsma (2004) argued that in aggressive behaviours of five-year-old children, genetic factors were 40–48% effective and environmental factors were 25% and 32% effective. Ball et al. (2008) stated that genetic factors were 71% effective in not looking after others' rights and 61% in bullying behaviour and environmental factors were effective for the rest of them. Baker (2008) conducted studies with twins and found that environmental factors were 30% effective in behavioural disorders.

Based on the theories about genetic and environmental factors that are effective in aggressive behaviours, aggression can be categorized under two groups. In the first group, there are instinct theories, biological-genetic theories and socio-biologic theories. According to these theories, aggression is described as an innate activity. In the second group, there are social learning and inhibition-aggression theories. According to these theories, aggression is a learnt behaviour (Brenner, 1993).

In inhibition-aggression theory, it is assumed that inhibition of a goal-oriented behaviour is likely to cause aggression and start a harmful behaviour towards the person targeted by the behaviour. This inhibition can come from the individual's environment as well as it may occur as a result of internal conflicting tendencies of this individual (Dollard, Doob, Miller, Mowrer, & Sears, 1970). According to Freud, aggression is a reaction against inhibitions. Dismissive and restrictive behaviours are perceived as 'inhibitory' behaviours. Inhibition causes an individual to feel angry, irritated and hostile and as a result, this individual displays aggressive behaviours. For Ericson, children try to assert themselves, go against the rules and show negative reactions when they are faced with parental control while struggling for their autonomy (Trawick-Swith, 2013). Authoritarian parents expect absolute obedience from the child and limit child's autonomy and independence; democratic parents, on the other hand, contribute to the development of child's autonomy by utilizing a control level suitable with the child and permissive parents never or hardly ever use control.

Experts stated that it affects the future aggressive behaviour of the child if parents react by talking or do not react at all to negative peer relationships when they witness an aggressive behaviour of the child (Buschgens et al., 2010; Underwood, Beron, Gentsch, Galperin, & Risser, 2008).

Moreover, in a number of studies it was found that authoritarian or permissive attitudes of parents were effective in children's physical and relational aggressive behaviour. (Brook, Zheng, Whiteman, & Brook, 2001; Brown, Arnold, Dobbs, & Doctoroff, 2007; Casas et al., 2006; Erdinç, 2009; Gülay Ogelman et al., 2015; Jewell, Krohn, Scott, Carlton, & Meinz, 2008; Keown and Woodvard, 2002; Nelson, Hart, Yang, Olsen, & Jin, 2006; Park et al., 2005; Sandstrom, 2007). In the light of this information, it can be suggested that when the autonomy attempts of children are not supported and inhibited by their parents, children have a tendency to display aggressive behaviours.

However, it cannot be suggested that all aggressive behaviours are a result of inhibition. Inhibition is just one of the reasons of aggression (Berkowitz, 1993). Bandura (1973) thinks that neither internal desire for violence, nor aggressive instinct that occurs as a result of inhibition forms the basis of aggression. Among the reasons why people behave aggressively towards each other, there are following reasons: they acquire aggressive behaviours as a result of their past experiences; they are rewarded for their reactions and they are encouraged by special social or environmental conditions. Bandura asserts that just as the environment affects human behaviours, human behaviours affect the environment, as well. In this context, an individual learns aggressive behaviours from a model or by observing and then have a tendency for aggression (Bandura, 1977).

On the other hand, not all models are imitated at the same level by children; children imitate some people more than others as they consider them more important, successful and popular. Children easily identify themselves with cartoon characters as they find them close to their cognitive and emotional state. Identification has an active role in learning aggression. A child who identifies himself with a 'strong' character in a novel or cartoon with violent content can use this violence against his peers or conceal it in his sub-consciousness. It can be claimed that imitation results from the desire for power and position (Gungor, 1993).

Except from cartoon characters with whom the children identify themselves easily, children imitate people who they see the most. Parents meet these requirements and they are basic models for children in the first few years. Being both reinforcement resources and imitation models, a child's further aggressive behaviours depend on parents' attitudes towards the child and each other (Taylor, Peplau, & Sears, 2007). In the light of this information, it can be suggested that attitudes and behaviours of parents and cartoon characters have an important effect on children's aggressive behaviours.

Until a child starts preschool education, the environment that he interacts with is mostly his parents and the TV, but when the child starts a preschool institution, his social environment expands with his teacher and peers. In a preschool institution where the child is away from his parents for the first time, he forms a relationship with the teacher similar to the relationship that

he formed with his parents (Zhang & Nurmi, 2012). Social and emotional inconsistencies that emerge when there is no positive relationship between the child and parents can also be observed with children who cannot form a positive relationship with their teachers (Zhang, 2011).

When teacher's relationship with the child is warm and close, children display better skills of emotional regulation (Shields et al., 2001) better social competency and fewer problems (Mashburn et al., 2008). For that reason, teacher's sensitivity in building qualified teacher–student relationship has a key role (Buyse, Verschueren, Doumen, Van Damme, & Maes, 2008). Considering the learning process in early childhood, positive relationships between teacher and children come at the first and the basic step of the pyramid model formed by the centre of social and emotional bases to prevent undesired behaviours and support social competency.

Moreover, it is highlighted that the attachment between teacher and children is influential in children's both social and academic development (Bredekamp, 2014). In other words, another dimension that teachers are influential in children's undesirable and aggressive behaviours is the attachment between teacher and child. In the literature, it is stated that preschool teachers are the ones to whom young children develop the strongest attachment after their parents (Koles, O'Connor, & Mccartney, 2009; Zhang & Nurmi, 2012). According to attachment theory, developing a secure attachment with primary care giver is important to support children's development and solve adaptation problems (Fearon, Bakermans-Kranenburg, van Ijzendoorn, Lapsley, & Roisman, 2010). As teachers can be considered temporary and special-purpose attachment figures (Verschueren & Koomen, 2012), they are influential in children's undesirable and aggressive behaviours in the classroom. Information in the literature asserts that factors that cause and contribute to the development of aggression have a multiple and complicated interaction system. It is therefore not possible to explain aggressive behaviours of children based on one factor.

However, it is seen that experts have examined the correlation between these factors and aggression but there is no study that examine the effect of in and out-of-school factors on aggressive behaviour together. Although we know the factors that affect aggression in children, it is more important to know which factors are the most effective to prevent their aggression. In addition, it is of greater importance to examine together the in- and out-of-school factors that affect children's aggressive behaviours and identify the effect size of these factors. For that reason, the main aim of this study is to identify the predictive power of the following variables for physical and relational aggression level of 48–66-month-old children; cartoon preferences of children, parental attitudes and teacher–student relationship.

Method

Design of the study

This study was conducted using relational survey model in order to examine the correlation between preschool children's physical and relational aggression and their cartoon preferences, teacher–child communication and parental attitudes. Moreover, this research utilized correlational method, which is one of the qualitative research methods. Correlation studies require data collection in order to identify correlation between two or more variables without interfering variables in any way and identify the correlation level between the variables (Brewer & Crano, 2002; Frankel & Wallen, 2005; Gay, Mills, & Airasian, 2009). Correlational methods give researchers great opportunities to predict scores and explain the relationship between variables. In correlational methods, researchers identify and measure the correlations between scores and variables using correlational statistics. In this method, the researchers do not attempt to control or manipulate the variables as in an experiment; instead, they relate, using the correlation (correlation, regression, etc.) statistic, two or more scores for each person and presents whether variables predict other variables by putting variables in different equations (Creswell, 2013).

Study group

The universe of the study consists of 48- 66-month-old preschool children, their mothers and teachers working in independent state preschools affiliated to Ministry of National Education in Konya city center in 2014–2015 academic year. Sample of the study was formed using stratified sampling model from schools that are classified by Directorate of National Education as low, average and high socio-economic and cultural background families and children from three districts in Konya city center. The study group consists of 300–100 children from low social-economic background, 100 from average socio-economic background, 100 from high socio-economic background – their mothers and 18 preschool teachers. Hundred and fifty five of the children were female (51.7%) and 145 of them are male (48.3%). Moreover, 102 of the children (34%) were between 4 and 4.5 years old, and 197 of them (66%) were between 4.5 and 5.5 years old. Ten of the teachers work in independent preschools and 8 of them work in a preschool under a primary school. Fifteen of the teachers participated in the study have a bachelor's degree and 3 of them have a master's degree.

Data collection instruments

In this study, 'General Information Form' was used to collect general information of the 4- to 5.5-year-old children and their mothers; 'Preschool Social Behavior Scale' to asses physical and relational aggression observed in children; 'Parental Attitude Scale (PAS)' to identify parental attitudes; 'Teacher–Child Relationships Scale' to determine the relationship between the child and the teacher and 'Cartoon Questionnaire' to identify which cartoons children prefer to watch.

General Information Form: This form was prepared by the researcher in order to collect general information about 48- to 66-month-old children and their mothers. In this form, there are questions about the gender and age of the child and education background and occupation of the mother.

Cartoon Questionnaires: Children were interviewed while the questionnaire was prepared by the researcher and cartoons popular with children were identified. Researchers and three other experts examined the cartoons, and 12 of them were classified as including physical and relational aggression and 12 were classified as including no negative behaviours.

For content validity of the questionnaire, views of 12 experts were asked. These experts were the faculty members from child development, preschool education, the department of assessment and evaluation, and child development and preschool education teachers working in the field. For this purpose, experts are asked to examine all cartoons with positive and negative examples and rate them as 'appropriate''undecided''not appropriate' for the research purpose. In accordance with the expert views, content validity for each cartoon was tested and it was found that cartoons that form the questionnaire had 1.00 content validity level. Moreover, the questionnaire was piloted with 40 children and its level of reliability was tested. For reliability of the questionnaire, 'Cronbach's Alpha internal consistency coefficient' was calculated. Cronbach's alpha coefficient was found (α) 0, 89. For construct validity of sub-factors, factor analysis was computed. The result of the factor analysis showed that 24 items prepared for the trial form consisted of two factors. Children were asked to show five of the most-watched cartoons among the cartoons, including negative and positive cartoons. Of these most-preferred cartoons, each negative cartoon was coded as 0 and each positive cartoon was coded as 1, and the total score was calculated from all five preferences. The lowest score children could get from Cartoon Questionnaire was 0 and the highest score was 5.

Parental Attitude Scale (PAS): parental attitude scale which was developed to assess behaviours of parents towards their 2- to 6-year-old children is a five-point Likert scale that is composed of 46 items with four sub-dimensions; democratic attitude 17 items, authoritarian attitude 11 items, over protective attitude 9 items and permissive attitude 9 items. In order to make parents to express how often they behave in this way, 5 different rating options were given across each item; 'It is always like that'; 'It is usually like that'; 'It is sometimes like that'; 'It is rarely like that'; 'It's never like that'. Item rating starts from 5 for 'it is always like that' and 1 for 'it is never like that'. Validity and reliability of the scale

was conducted with 420 parents who had children aged between 2 and 6 years old, and factor analysis technique was used for validity. The scale has four sub-dimensions: democratic, authoritarian, over protective, and permissive and the structure with four factors explain 33% of the total variance. For the construct validity of the scale, the correlation between dimensions of the scale, sub-dimensions of the scale and total score from the scale was examined and it was found that there was a positive correlation between democratic and authoritarian attitude, between authoritarian and over protective attitude, between authoritarian and permissive attitude and between over protective and permissive attitude. Moreover, a positive correlation was found between the total score of the scale, over protective attitude and permissive attitudes. For construct validity of the scale, correlation between dimensions of PAS and Family Life and Child Raising Attitude Scale was examined. According to the results, there was a positive correlation between over maternity dimension of Family Life and Child Raising Attitude Scale and over protective dimension of PAS; democratic dimension of Family Life and Child Raising Attitude Scale and democratic attitude dimension of PAS; discipline dimension of Family Life and Child Raising Attitude Scale and over protective and authoritarian attitude dimension of PAS. Moreover, a negative correlation was identified between democratic dimension of Family Life and Child Raising Attitude Scale and authoritarian dimension of PAS. For each dimension, scores were calculated separately and getting high score means accepting the behaviour it represents. Cronbach alpha values for the sub-dimensions of the scale were: .83 for democratic attitude, .73 for authoritarian attitude, .75 for over protective attitude and .74 for permissive attitude (Karabulut Demir &Şendil, 2008).

The Student–Teacher Relationship Scale: The Student–Teacher Relationship Scale was developed by Chung (2000) to identify preschool teachers' relationship with their students. Its adaptation into Turkish was conducted by Kıldan (2011). The original scale composed of 28 items was reduced to 19 positive (1, 4, 5, 6, 9, 18, 19) and negative (2, 3, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17) items. In adapted version of the scale, factor loads were between .42 and .75. Total item correlation was between .35 and .69. Findings of the reliability analysis were as follows: Cronbach alpha value was .90 and Spearman Brown Split Half Test correlation was .86.

Pre-school Social Behavior Scale: The scale was developed by Crick, Casas and Mosher (1997) in order to identify social behaviours of children during preschool period based on teacher assessment. It is a five-point Likert scale with four sub-dimensions; physical aggression, relational aggression prosocial behaviour and depressive emotion. The scale was adapted into Turkish by Şen (2009) and Cronbach's alpha internal consistency coefficient was found 0.95 for physical aggression 0.89 for prosocial behaviour, 0.90 for relational aggression and 0.51 for depressive emotion. Moreover, test–retest reliability coefficients were 0.85 for physical aggression, 0.81 for positive social behaviour, 0.73 for relational aggression and 0.56 for depressive emotion.

Data analysis

All gathered data were entered into SPSS 23 program and analysed using correlation, multiple regression, and stepwise regression analyses. In order to identify variables that predict children's scores of physical and relational aggression Stepwise Regression Analysis was performed. Multiple Linear Regression Analysis is used to assess the association between two or more independent variables and a dependent variable and predict the dependent variable (Pedhazur & Pedhazur Schmelkin, 1991; Tabachnick & Fidell, 2001). In Stepwise Regression Analysis, only independent variables that are important predictors of the dependent variable are included in regression equation and other variables are left out of the equation. The analysis starts with choosing X_1, which is the independent variable that contributes highest to dependent variable's variance and has the highest correlation with the dependent variable Y. Then X_2 variable (which contributes highest with the first variable to variance of Y) is included and the calculation is made (Büyüköztürk, 2010; Tabachnick & Fidell, 2001) (Table 1).

Table 1. Descriptive statistics concerning variables.

Variable	n		S.S.
Physical aggression	300	9.33	2.08
Relational aggression	300	22.33	5.68
Teacher–child relationship	300	41.66	4.61
Cartoon	300	2.66	.57

Findings

Table 2 presents the results of the correlation analysis concerning 48- to 66-month-old children's levels of aggression and teacher–child relationship, attitudes of mothers and cartoon preferences of children.

As it can be seen from Table 2, there is a negative correlation between relational aggression and children's cartoon preferences and teacher–child relationship. According to these results, it can be suggested that as children's positive cartoon preferences increase, their aggressive behaviours decrease; and when the positive relationship between teacher and child increases, a decrease is observed in relationally aggressive behaviours. Moreover, the data in Table 2 shows that there is a positive correlation between physical aggression and mothers' authoritarian attitude and there is a negative correlation between children's cartoon preferences and democratic attitude. According to these results, it can be suggested that when children's positive cartoon preferences increase, their physically aggressive behaviours decrease.

If the correlation coefficient is 1.00, that means perfect positive correlation; if it is −1.00 then it means perfect negative correlation and if it is .00, that means no correlation. If the correlation coefficient absolute value is between .70 and 1.00, it means a high correlation; if it is between .70 and .30 this is a moderate correlation and if it is between .30–.00 then it means a low correlation (Büyüköztürk, 2002). In accordance with this, it is seen that there is a moderate correlation between children's level of aggression and their cartoon preferences.

Results of linear regression analysis that was conducted in order to find out whether children's cartoon preferences and teacher–child relationship predict relational aggression separately are given in Table 3.

It is seen from the data in Table 3 that cartoons and teacher–child relationship significantly predict level of aggression ($p > .05$). In order to find out whether the above-mentioned predictive variables had a significant contribution to predict the level of aggression, stepwise regression analysis was performed. With stepwise regression analysis, contribution of each variable to the total variance to predict relational aggression was identified (Tables 4 and 5).

Table 2. Results of the correlation analysis between children's level of aggression and independent variables.

	Teacher–child relationship	Cartoon	Democratic attitude	Authoritarian attitude	Permissive attitude	Protective attitude	Total
Physical aggression	.06	−.39**	−.20*	.15*	−.06	.01	−.08
Relational aggression	−.16**	−.50**	.01	−.02	−.01	−.02	−6

Table 3. B and Beta correlation and significance levels of variables.

Predictors	B	Std. error	β	t	P
Constant	26.53	2.32		11.89	.000
Cartoons	−1.78	.21	−.46	−8.47	.00
Teacher–child relationship	−.10	.04	−.12	−2.21	.02

Table 4. Results of stepwise regression analysis concerning predictors of relational aggression.

Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	0.50	0.251	0.248	4.92
2	0.51	0.264	0.258	4.88

Table 5. B and Beta correlation and significance level of variables.

Model	Predictors	B	Std. error	$\hat{a}$	t	P
1	Constant	24.42	.74		32.64	.00
	Cartoon	−1.91	.21	−.50	−9.11	.00
2	Constant	28.72	2.16		13.27	.00
	Cartoon	−1.86	.21	−.48	−8.89	.00
	Teacher–child relationship	−.09	.04	−.11	−2.11	.03

In the first model, cartoon preferences were put into regression equality and 25% of the relational aggression variance was explained by children's cartoon preferences ($R = 0.50$, $R^2 = 0.251$). In the second model with cartoon preferences, teacher–child relationship was added to the model and with addition of this variable to the model, variance explained in relational aggression increased from 25% to 26% ($R = 0.51$; $R^2 = 0.264$). That is, teacher–child relationship variable has a 1% contribution to the explained variance.

In the second step, results of the simple linear regression analysis that was used to check whether children's cartoon preferences, democratic attitude and authoritarian attitude predict physical aggression separately are presented in Table 6.

The values in Table 6 show that cartoon and democratic attitude each separately and significantly predicts the level of physical aggression while authoritarian attitude does not ($p > .05$).

In order to find out whether above-mentioned predictive variables had a significant contribution to predict the level of physical aggression, stepwise regression analysis was performed. At the end of the stepwise regression analysis, it was concluded that each examined variable had a contribution to the total explained variance to predict physical aggression. Authoritarian attitude was not included in stepwise regression as it does not predict the level of physical aggression significantly. Other variables were included in the model and the total variance that explains the physical variance was calculated following the two-step model (Tables 7 and 8).

In the first model, cartoon was put into regression equality, and 15% of the variance in physically aggressive behaviour of children was explained by children's cartoon preferences ($R = 0.39$, $R^2 = 0.152$). In the second model, democratic attitude variable was added to the model and with this addition explained variance in physical aggression score increased from 15% to 18% ($R = 0.42$; $R^2 = 0.184$). That is, mother's democratic attitude has 3% contribution to the explained variance.

Table 6. B and Beta correlation and significance level of variables.

Predictors	B	Std. error	β	t	P
Constant	25.66	5.91		4.34	.00
Cartoon	−1.23	.19	−.36	−6.30	.00
Democratic attitude	−.14	.06	−.14	−2.39	.01
Authoritarian attitude	.14	.07	.11	1.86	.06

Table 7. Stepwise regression analysis results concerning predictors of physical aggression.

Model	R	R^2	Adjusted R^2	Std. error of the estimate
1	0.39	152	0. 148	4.62
2	0.42	184	0. 178	4.54

Table 8. B and Beta correlation and significance level of variables.

Model	Predictors	B	Std. error	*â*	t	P
1	Constant	21.67	.70		30.82	.00
	Cartoon	−1.31	.19	−3.39	−6.66	.00
2	Constant	34.33	4.10		8.36	.00
	Cartoon	−1.27	.19	−3.37	−6.57	.00
	Democratic attitude	−.18	.05	−.18	−3.12	.00

Consequently, children's level of physical aggression is primarily explained by their cartoon preferences, which is followed by mothers' democratic attitudes.

Discussion

The main aim of this study is to identify the predictive power of the following variables for physical and relational aggression level of children; cartoon preferences of children, parental attitudes and teacher–student relationship. At the end of the analyses that were done in accordance with this aim, it was concluded that 28% of children's relationally aggressive behaviours, and 18% of their physically aggressive behaviours were explained by above-mentioned variables. Studies conducted in recent years have emphasized that environmental factors are about 30% effective in children's aggressive behaviours (Baker, 2008; Ball et al., 2008; van Beijsterveldt et al., 2004). This study's finding that environmental factors examined in this study explain about 23% of children's aggressive behaviours indicates that these are (cartoon preferences, parental attitudes, teacher–child relationship) nearly half of the environmental factors that affect children's aggressive behaviours. Among these factors, it is seen that cartoon preference of children was the primary factor predicting relational and physical aggression. Cartoon preferences of the children – the primary variable with the most predictive power – predicts 15% of children's level of physical aggression and 25% of their level of relational aggression. This finding reveals that children's cartoon preferences are more effective in relational aggression than physical aggression. The studies concerning the programmes for children and their content (Middleton & Vanterpool, 1999; Özçakar & Koçak, 2012; Şentürk & Turgut, 2011; Temel, Akgün Kostak, & Çelikkalp, 2014) found that most children watch cartoons, including violence, there are more violent elements in children's programmes than advertisements, the most common element of violence in these programmes is physical violence, and there are scenes that children might get scared and worried. These studies also showed that most of the children watch these cartoons with a sibling or a friend and some children reported that they watch them with a parent. Most of the children reported that they like the scenes in which characters fight or shoot; none of the children stated that they do not like violent scenes in cartoons. These studies also showed that the events in children's programmes are not like the ones a child might experience in his life and characters solve their problems using supernatural forces, events including violence are given in a way to be modelled by children, and especially heroes that use violence to help others are modelled and this makes children have a perception that violence is the power that secure justice. In accordance with these findings, children include cartoon characters in their games and imitate them, they are so much affected by what they see in cartoons that they include them in their lives, and as a result, children can have violent behaviours and become unsocial. In studies conducted by Kadan (2010) and Akçay and Özcebe (2012), it was suggested that when the time spent in front of TV increased their aggression also increased and their positive social behaviours decreased. In the same way, in their study, Conners-Burrow, Mckelvey, and Fussell (2011) examined the correlation between preschool children's hyperactivity aggressive behaviours and social skills in the classroom and their TV habits (the amount of time spent in front of TV, and watching inappropriate films) and they found that watching inappropriate content was correlated with higher hyperactivity and aggression and less social skills. Paksoy and Yaşar (2011) studied five-year-old children and examined the effects of violent scenes in cartoons on their level of aggression during their free

games. Children used cartons with violent content more at the beginning of the games, and did not use them during or at the end of the games. Observed negative behaviours appeared while playing roles and at the end of the roles negative behaviours disappeared too. It is observed that aggressive behaviours that appear after watching a cartoon with violent content are not permanent. After watching a cartoon with educational content, children did not reflect any of the elements at any stage of their ames and they did not use the characters but tend to play quieter games. In other studies conducted by Paik and Comstock (1994), Cantor (2000), Christakis and Zimmerman (2007), Yıldırım (2008), Adak Özdemir and Ramazan (2012), it was explored that children are generally affected by the violent scenes they watch, they display behaviours that are related with the content of the cartoon and there is a correlation between the violent scenes on TV and aggression.

Mother's democratic attitudes were identified as the second most powerful predictor that predicts children's aggressive behaviours. According to research results, mother's democratic attitude predicts children's physical aggression at a level of 3%. Moreover, a negative correlation between physical aggression and democratic attitude, and a positive correlation with authoritarian attitude was identified. According to this result, when mother's democratic attitudes increase children's physically aggressive behaviours decrease and when authoritarian attitudes increase their physically aggressive behaviours increase. Aggressive behaviours of children observed during preschool period occur when children come across with inhibitions to reach desired aims (i.e. when a favourite toy or object is being used by others), and in this situation they resort more to physical aggression (Gulay, 2008). In the light of this information, it can be said that children who come across with a number of inhibitions in their daily life because of authoritarian parental attitude react with aggressive behaviour. It can be suggested that as children who grow up in the environments where there is democratic parental attitude, they do not come across with inhibitions and do not display aggressive behaviours. In a study conducted by Jewell et al. (2008) it was found that mother's authoritarian attitude and father's permissive attitudes increased children's aggressive behaviours. Brook et al. (2001) examined the correlation between parental factors, marital relationships and children's aggressive behaviours and identified that mother's style of child raising, personality traits and parental aggression areas had a direct effect on children's aggressive behaviours. Erdinç (2009) conducted a study to find the predictive power of preschool children's temperament traits and parental attitudes on children's physical and relational aggression and he concluded that as authoritarian parental attitude increases and patience decreases, child's physical aggression increases. In a similar way, Sezer, Kolaç and Erol (2013) also reported that children's aggressive behaviours were affected by parental attitudes. Gülay Ogelman et al. (2015) stated that the level conflicts and the positive relationships between mother and child significantly predict children's aggression toward their friends, prosocial behaviour in order to help others, getting scared and worried and hyperactivity variables. Yet they do not predict asocial behaviours towards peers, exclusion by others, and being exposed to peer violence. Moreover other studies that reported correlation between children's aggressive behaviours and mother's attitude (Aunola & Nurmi, 2005; Martin, Razza, & Brooks-Gunn, 2012; Snyder, Stoolmiller, Wilson, & Yamamoto, 2003) support the findings of this study.

Another finding of the study concerning parental attitudes was mother's democratic and authoritarian attitudes do not have any effects on children's relational aggression. Casas et al. (2006) reported a negative correlation between authoritarian attitude of parents and physical aggression but there was no significant correlation between relational aggression and authoritarian attitude of parents. The finding of that study is consistent with the findings of current study. If their peers do not meet certain conditions, relational aggression of children appears in a very simple and concrete ways such as telling his friend to leave, threatening a friend, shouting/getting angry at a friend, telling a friend that he will not invite him to his birthday party and resent and that he will not be a friend anymore (Özdemir & Tepeli, 2015; Sevinç, 2003). As children exhibit these behaviours – preschool children exhibit them as a reaction in case of a problem situation – in their communication with their friends, it is thought that they are not affected by positive or negative behaviours of their parents.

Moreover, it was found that teacher–child relationship explained 1% of children's level of relational aggression. It can be claimed that as there is a negative correlation between teacher–child relationship and relational aggression when teacher–child relationship increases in a positive way, children's relational aggressive behaviours decrease. This finding suggests that relationally aggressive behaviours that children exhibit in their communication with their friends during preschool period decrease as they are affected by the positive teacher–child relationship in the classroom. It can be said that if a healthy teacher–child relationship cannot be formed in classroom environment, relational aggression among children will increase. Moreover, it was reported that teacher–child relationship does not have any effect on children's physical aggression.

In their study, Gülay Ogelman et al. (2015) stated that level of teacher–child conflict predicts the following variables; children's aggression towards their friends, prosocial behaviour in order to help others, asocial behaviour towards peers, being scared and worried, being excluded by peers, hyperactivity and being exposed to peer violence. In the study conducted by Howes et al. (2011), a correlation was reported between level of perceiving teacher–child relationship and children's aggressive behaviours. At the end of a study which was conducted in order to examine the correlation between problem behaviours of 48- to 60-month-old preschoolers and their relationships with their mothers and teachers, Yüksek Usta (2014) found that when internal and external behaviour problems increased, conflicts in their relationship with mothers and teachers increased and their intimacy decreased.

Results and suggestions

This study investigated the predictive power of the following variables for physical and relational aggression level of children: cartoon preferences of children, parental attitudes and teacher–student relationship. The results of the analyses showed that cartoon preferences were the first-level predictor, mother's democratic attitudes was the second-level predictor and teacher–child relationship was the third level predictor of children's level of aggression. Parents and teachers should pay attention to the programmes that their children watch in terms of the examples of physical aggression as well as the examples of relationally aggressive behaviours. When the role of parents' democratic attitudes to decrease children's physically aggressive behaviours is considered, mothers should be informed about displaying more democratic attitudes and behaviours towards their children. Moreover, there is a need for further studies that inform parents about importance of the effects of cartoons on children's development, checking the content of cartoons, watching pre-determined cartoons with children, and talking about the content of the cartoon with children. Similarly, considering the effect of teacher–child relationship on children's behaviour, teachers should be informed about how to form a positive relationship with the child, how to create a positive atmosphere in the classroom and in-class communication techniques.

Disclosure statement

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