



Analyzing the Relationship between Parenting Styles, Behavioural Problems and School Readiness Through the Mediating Role of Self-Regulation *

Nefise Semra Erkan ¹, Aylin Sop ²

Abstract

This study aims to examine direct and indirect relationships between parenting styles, children's behavioural problems, their self-regulation skills and school readiness. In scope of the research, the mediating role of children's self-regulation skills was evaluated on parenting styles and school readiness and behavioural problems observed in children and school readiness. The data was obtained from 140, 66-72-month-children, enrolled at preschools affiliated to Ministry of Education in Central District of Burdur province in 2015-2016 education year, their parents and 8 teachers working at preschools. The obtained data were analysed with PROCESS macro, the direct and indirect path coefficients of the regression models were subjected to bootstrap analysis. It was determined that parental attitudes did not significantly predict school readiness of the children. On the other hand, attention/impulse control as a sub-dimension of children's self-regulation skills proved complementary mediation role between children's anxious/fearful behaviour and school readiness. The study also revealed the indirect-only mediation role of attention-impulse control between hostile/aggressive and hyperactive/distractible behavioural problems and school readiness. The results of the study indicate that children's anxious/fearful behaviour affect their attention-impulse control skills in a negative way and children's attention-impulse control skills affect their school readiness in a positive way. Findings of the study have been discussed in the scope of school readiness and suggestions are put forward in accordance with the results.

Keywords

Preschool period
Parenting styles
Behavioural problems
Self-regulation skills
School readiness
PROCESS

Article Info

Received: 08.21.2017
Accepted: 06.12.2018
Online Published: 10.16.2018

DOI: 10.15390/EB.2018.7474

* This article is derived from Aylin Sop's PhD dissertation entitled "Analyzing the relationship between parenting styles, behavior problems and school readiness through mediatory effect of self-regulation", conducted under the supervision of Nefise Semra Erkan.

¹ Hacettepe University, Faculty of Education, Department of Primary Education, Division of Early Childhood Education, Turkey, erkansemra@hacettepe.edu.tr

² Mehmet Akif Ersoy University, Faculty of Education, Primary Education Department, Division of Preschool/Early Childhood Education, Turkey, aylindursun_1@hotmail.com

Introduction

Preschool years are the most significant years of life in terms of gaining all skills based on developmental areas and human life. These years are of great importance because it is the period when an individual grows most rapidly, their behaviours are shaped, and they gain a number of skills. Skills gained during these crucial years have a long-term effect on one's life until adulthood. As children grow up, and their development continues, they take pre-school education in order to be able to gain new skills, behaviours and attitude (İnal, 2013). Children leave their families and immediate environment for the first time when they start pre-school education, which allow them to take place in a medium where they can gain new life-sustaining experiences. The environment of pre-school education is the first medium which has distinctive rules for a child to socialize unlike home, where s/he makes new friends, has expected duties and responsibilities and communicates with teachers and peers. While a child is gaining their first experiences by socializing at home, institutions providing pre-school education and primary schools are considered as environments where these fundamental behaviours are reinforced (Erkan, 2011; Oktay, 2013).

Various experience and opportunities a pre-school child encounters at home and school, raise awareness of the child and give hints to his/her family and teachers. In this sense, pre-school education institutions provide numerous opportunities to the children in terms of different environments to learn, new vital experiences in development of behaviour, fundamental knowledge, skills, attitude and taking up an habit and aim to make them ready for primary school (Rimm-Kaufman, Pianta, & Cox, 2000; Oktay, 2013). The children are expected to adapt to new routines in these institutions, obey the rules without monitoring of an adult, focus on the tasks given to them, establish new social relationships and learn from their peers (Love, Logue, Trudeau, & Thayer, 1992). Preliminary skills such as obeying the rules, regulating the behaviours, and following the routines are considered as significant factors of a successful transition to school (Bono, 2003).

The adaption period of a child during transition to school depends on his/her personal characteristics, parent's child rearing styles, and physical health of the child, quality of the family and social environment and academic readiness of the child. Among these factors, family plays a crucial role, and if parenting style supports the transition of the child from dependency to independency, s/he will be able to cope with novelty of school-start period thanks to the gained skills (İnal, 2013). Maccoby and Martin (1983) discussed the parenting attitudes under two major dimensions as responsiveness and demandingness. Baumrind (1991) defines the responsiveness dimension of parenting attitudes as "parents who are sensitive, susceptible and supportive to individuality, self-regulation and self-assertion of children and acquiescent to their special needs and demands". The demandingness dimension of parenting attitudes is defined as "parents who are able to resist the disobedient child, having control and discipline efforts and incorporating the child into the family" (Darling, 1999). From this point of view, Maccoby and Martin (1983) developed a four-dimensional model of parenting. They classified parents as authoritative (democratic) who are strong in both demandingness and responsiveness aspects of parenting attitudes; authoritarian who are strong in demandingness but weak in responsiveness; permissive (indulgent) who are weak in demandingness but strong in responsiveness; uninvolved who are weak in demandingness and responsiveness. Additionally, overprotective parenting which is commonly applied by parents living in Turkish culture is defined as a parental attitude that performs excessive control on the child within the belief of the child should consistently be protected because he/she cannot take care of himself/herself (Karabulut Demir & Şendil, 2008). Parenting styles have a great role in development of children's behaviours, attitude and skills. The parenting style can directly impact the children's skills. Karreman, van Tuijl, van Aken, and Deković (2006) specified in their studies that parents providing positive control have positive effect on self-regulation of the children. Also Eiden, Edwards, and Leonard (2007) claimed that there is a relationship between parents' affection and sensitivity and development of self-regulation skills. Investigating the parenting attitudes and self-regulation skills of children, Keller (2008) found that parents with authoritarian attitude focus on preventing, but the parents with democratic attitude focus on

supporting. He also noted that parents with permissive parenting attitude do not pay attention to their children's self-regulation skills.

Vital experiences of the children lead them to use their self-regulation skills in social context. Adaptation of the children to the environment and their self-control of emotions and impulses in terms of their interactions with their peers or at home, school or class are related to the development of their self-regulation skills (Blair, 2002). Self-regulation skills enhance the child's flexibility and are the skills that enable regulating his/her thinking and behaviours, help with his/her comprehension without any need for the hints, and regulate their emotional stimulation (Barkley, 2001; Derryberry & Rothbart, 1997). Children's self-regulation skills are a versatile construct including regulation of behaviour (behavioural impulse control and motor control), regulation of emotion (identification and labelling of emotions; the capacity to tolerate frustration and adjust negative stimulation) and regulation of attention (ability to sustain attention and retention of information in memory; focus attention, avoid distraction, shift attention when necessary). These skills are connected to each other and improve rapidly between 3 and 7 ages (Torres, 2011).

It is specified in the literature that self-regulation skills in pre-school period are related to vocabulary of the child developing simultaneously, early literacy and mathematical skills (McClelland et al., 2007; Smith, Borkowski, & Whitman, 2008; Welsh, Nix, Blair, Bierman, & Nelson, 2010). It is seen that self-regulation skills are also related to social skills as well as academic performance. It is reported by the teachers and families that the children with high self-regulation skills interact with their peers more (Rimm-Kaufman & Wanless, 2012). In addition, self-regulatory processes provide opportunity to help children with anger management, regulation of social skills, and adaptation to social expectations, planning their behaviours, and development of their organizational capacities. Development of children's self-regulation skills also reduces their tendency to show problematic behaviours while proceeding to school life (Blair & Razza, 2007).

Studies which indicate self-regulation skills mentioned above are associated with school readiness in terms of development are often encountered in the literature. The recent literature shows that there are studies investigating the relationship between children's self-regulation skills and school readiness (Becker, Miao, Duncan, & McClelland, 2014; Blair & Razza, 2007; Bono, 2003; Pears et al., 2014; Schmitt, McClelland, Tominey, & Acock, 2015; Smith et al., 2008). In addition to researches examining the relationship between parenting and self-regulation skills (Karreman et al., 2006; Kiss, Fecete, Pop, & Susa, 2014; Volling, Blandon, & Kolak, 2006), there are also researches in the literature that consider parenting as a risk factor on school readiness of children (Baker, Cameron, Rimm-Kaufman, & Grissmer, 2012; Hill, 2001; Johnson, 2008). There are crucial issues in learning process, which are bringing children's behavioural impulses under control, focusing their attention and regulation of emotions (Blair & Diamond, 2008). Furthermore, it is considered that understanding nature of self-regulation and determining which skill affects school readiness most will be a guide in planning preventive and early intervening processes.

Growing and developing children try to adapt to the environment they live in while acquiring new knowledge, skills and behaviours. In this adaptation process, children may encounter some problems, their mental tensions may increase and exhibit incompatible behaviours if they are not able to solve these problems (Çağdaş & Seçer, 2006). Behavioural problems observed in pre-school children are generally confronted as external and internal behaviours. External behavioural problems consist of behaviours such as being angry and aggressive towards people, hyperactivity, contravention and violating the rules. Internal behavioural problems are being introverted and confronted as shyness, anxiety, fear (Drossos, 2004; Ergül, 2010). Eisenberg et al. (2001) found that children with internal behavioural problems are constantly sad and anxious, and display low level of attention-impulse control. On the other hand, Vitaro, Tremblay, Gagnon, and Boivin (1992) stated that children who succeed in regulating the reactions are able to resolve conflicts without anger. Bierman, Torres, Domitrovich, Welsh, and Gest (2009) found that pre-school children displaying aggressive behaviours

have poor cognitive level of school readiness; Graziano, Slavec, Hart, Garcia, and Pelham Jr. (2014) also observed that children with decreased aggressive behaviours increase their school readiness.

As soon as children start school, there appear a number of social skill and learning needs affiliated to development of self-regulation skills. Children with delayed self-regulation skills are the ones who carry the risk of having problems while starting the school. These children can have problematic relationships with their teachers and peers and behavioural problems at the beginning of school life (Blair, 2002). Children may not be able to inform about the problem or him/herself due to their age even if they have problematic behaviours since they are generally unconscious of the problem. Quality information about the child can be obtained from either parents or teachers. Thus, it is of great importance that teachers spending time with children, observing and evaluating them professionally contribute to identification of children's problematic behaviours. In addition to this viewpoint, it is significant to examine parenting styles in order to be able to explain school readiness in a holistic way. Even though there are researches on parenting styles, children's self-regulations, their behavioural problems and school readiness in the literature (Blair & Razza, 2007; Drossos, 2004; Graziano et al., 2014), no studies have been found, which handle the relationships among these variables in a holistic way in scope of a single research. Hence, it is considered that this research will make a great contribution to the literature by suggesting a model where the mediator effect of self-regulation in the relationship between parenting styles, children's behavioural problems and school readiness will be interpreted.

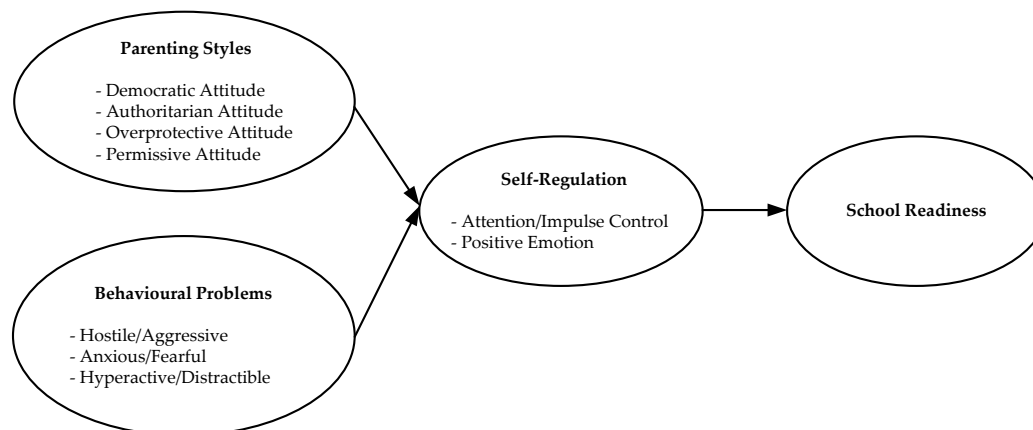


Figure 1. The Stipulated School Readiness Model

In this sense, this study aims to find the answer for the question “do children's self-regulation skills have a mediator role in the relationship between parenting styles, behavioural problems observed in children and school readiness?”

In the light of this general aim, the sub-problems have been determined as follows:

1. Do parenting styles and sub-dimensions (hostile/aggressive, anxious/fearful and hyperactive/distractible) of children's behavioural problems predict children's school readiness?
2. Do parenting styles and sub-dimensions (hostile/aggressive, anxious/fearful and hyperactive/distractible) of children's behavioural problems predict sub-dimensions of children's self-regulation skills (attention-impulse control and positive emotion)?
3. Do sub-dimensions of children's self-regulation skills predict school readiness?
4. Do parenting styles and sub-dimensions of children's behavioural problems predict school readiness through sub-dimensions of children's self-regulation skills?

Method

This study is an associational research model designed in order to examine the relationship between parenting styles, behavioural problems observed in children, their self-regulation skills and school readiness. Associational researches are the researches at which relationships are examined in depth and which aim to describe the relationships between more than one variable and identify the existence of variation or its degree (Karasar, 2009; Karakaya, 2011).

The Study Group

The study group consists of 66-72-month-children attending independent kindergartens and nursery classes within primary schools affiliated to Ministry of Education (MEB) in Central District of Burdur province in 2015-2016 education year and their parents. In the study, it was aimed to reach all 66-72-month-children residing in the city centre and expected to start school the following year as well as their parents. However, assessment instruments applied in the study require the child and assessor to work in a quiet environment. Therefore, physical conditions of the schools included in the scope of this study were primarily examined and primary schools affiliated to Ministry of Education were excluded from the study since they could not provide a quiet study environment. out of 174, 140, 66-72-month-children in five kindergartens providing necessary physical conditions selected from six independent kindergartens affiliated to the Ministry of Education in the central district of Burdur province were included in the study. 49% of the children who participated in the study are girls and 51% are boys. 21% of the mothers participating the study are in the age range of 21-30, 76% are in 31-40 and 4.3% are in 41-50 age range. 27.9% of them are high school graduates, 17.1% have associate's degree and 37.9% have bachelor's degree. Besides, 75.7% of the fathers participating the study are in the age range of 31-40 while 17.1% are in 41-50. 29.3% of them are high school graduates, 10% have associate's degree and 40% have bachelor's degree.

Data Collection Tools

Data of the study were collected by means of Family Info Form, Parents Attitude Scale (PAS), Preschool Behaviour Questionnaire (PBQ), Preschool Self-Regulation Assessment (PSRA) and Metropolitan Readiness Test – Sixth Edition (MRT6).

Family Info Form: In line with the sub-aims of the study, it has been designed in order to obtain demographical information about the child and his/her parents by the researcher. In this form distributed to the parents, there are totally 10 questions including demographical information such as genders of children, the name of the parent filling in the form, ages of parents, their educational background, the number of children they have, and marital status.

Parents Attitude Scale (PAS): PAS has been used in order to evaluate parents' parenting attitudes. The scale was developed by Karabulut Demir and Şendil (2008) so as to evaluate the parenting attitudes of parents with 2-6 year-old-children and consists of four sub-dimensions (Democratic Attitude, Authoritarian Attitude, Overprotective Attitude, Permissive Attitude). The scale composed of 46 items is 5 Likert Type Scale. Internal consistency was examined in order to detect the reliability of PAS dimensions. In Karabulut Demir and Şendil's (2008) study, internal consistency of PAS dimensions was measured as 0.83 for democratic sub-dimension, 0.76 for authoritarian sub-dimension, 0.75 for overprotective sub-dimension and 0.74 for permissive sub-dimension. Similarly, Cronbach Alpha coefficient for internal consistency about dimensions of the scale was measured in the present study as 0.83 for democratic sub-dimension, 0.76 for authoritarian sub-dimension, 0.77 for overprotective sub-dimension and 0.74 for permissive sub-dimension.

Preschool Behaviour Questionnaire (PBQ): PBQ was used in order to determine children's behavioural problems. The questionnaire was developed by Behar and Stringfield (1974) as an observation instrument that may be easy-to-use by researchers, which indicates the symptoms and group of symptoms implying the fact that emotional problems of 3-6 year-children begin to appear (Behar & Stringfield, 1974). Translation of the questionnaire to Turkish and validity-reliability study was carried out by Kanlıkılıçer (2005). The questionnaire, composed of 30 items, examines behavioural problems during pre-school period in terms of sub-dimensions such as being hostile/aggressive, anxious/fearful and hyperactive/distractible. In the present study, Cronbach Alpha coefficient for internal consistency about dimensions of the questionnaire was measured as 0.83 for being hostile/aggressive sub-dimension, 0.73 for being anxious/fearful sub-dimension, 0.81 for being hyperactive/distractible sub-dimension and internal consistency coefficient for the whole questionnaire was measured as 0.87.

Preschool Self-Regulation Assessment (PSRA): Data regarding children's self-regulation were collected by means of "Preschool Self-Regulation Assessment" in the study. This assessment developed by Smith-Donald, Raver, Hayes, and Richardson (2007) was adapted to Turkish by Tanrıbuyurdu in 2012. It is an assessment instrument allowing evaluation based on performance.

PSRA consists of two fundamental parts which are "assessor guide for the tasks the child is expected to perform (Researcher's Coding Pages)" and "Assessor Report Examiner Rating Scale" regarding the expected tasks of children.

- *Researcher's Coding Pages:* There are codes regarding 9 tasks gathered in order to evaluate children's self-regulation performances. Tasks such as "Toy Wrap", "Snack Delay", and "Tongue Task" are used in order to determine children's level of delay of gratification. Such tasks as "Balance Beam", "Tower Task" and "Pencil Tap" are also appointed in order to assess the executive control implying children's ability of following the instructions. There are such tasks as "Tower Cleanup", "Toy Sorting", and "Toy Return" in order to assess their socialization skills (Tanrıbuyurdu, 2012). In this section of the assessment, coding regarding children's performances is carried out.
- *Assessor Report Examiner Rating Scale:* It is the second part of the assessment. It allows the assessor to assess a child's emotions, impulse control, level of attention and behaviours based on interaction between the assessor and the child. Assessor Report Examiner Rating Scale consists of 16 items and two sub-dimensions. The first sub-dimension is Attention-impulse Control dimension, consisting of 10 items while the second one is Positive Emotion, composed of 6 items. The assessment is rated as 0, 1, 2 and 3. Behavioural implications exist in the items and generally 0 means the lowest point while 3 means the highest point. Some items embedded in the assessment are rated as inverted. The assessment (Assessor Report Examiner Rating Scale) has a two-factor-construct. Cronbach alpha coefficient for internal consistency of the overall assessment has been found to be 0.83. reliability coefficient for the sub-dimension, Attention-impulse Control has been found as 0.88 and for Positive Emotion, it has been found as 0.80 (Tanrıbuyurdu & Yıldız, 2014).

In scope of this study, reliability coefficient for the sub-dimension, Attention-impulse Control has been found as 0.81 and for Positive Emotion, it has been found as 0.87. Reliability coefficient of the overall assessment has been measured as 0.82. While attention-impulse control assesses children's attention and behaviour regulation, positive emotion sub-dimension assesses their emotion regulation.

Metropolitan Readiness Test – Sixth Edition (MRT6): Metropolitan Readiness Test – Sixth Edition (MRT6), developed by Nurss and McGauvran in 1995 was used as a data collection instrument in order to determine children's school readiness in this study.

The test was developed in order to determine school readiness of six-year-old children. Metropolitan Readiness Test consists of three composites: "Beginning Reading", "Story Comprehension" and "Mathematical Skills (Quantitative Concepts and Reasoning)"; and five sub-tests. The test covering 70 questions in total is carried out in four sessions.

Turkish adaptation of MRT6 was performed by Erkan and Kirca in 2010. The test was given to 170 children in scope of validity and reliability study of Metropolitan Test. Each item of the test was rated 1 for the true answers and 0 for the false answers; therefore, reliability coefficient for overall pre-test was found as KR20=0.837 and for overall post-test it was KR20=0.885 according to the retest results. In scope of validity study of the test, t-test was conducted between pre- and post-test and coefficient of correlation was found significant ($p<0.05$) and measured as 0.863 (Erkan & Kirca, 2010). In scope of this study, reliability coefficient of the test was measured as KR20 = 0.82.

Data Analysis

Statistical analysis of the study has been conducted by using SPSS 21 software and PROCESS macro. The four aspects of parenting styles that are democratic attitude, authoritarian attitude, overprotective attitude and permissive attitude and children's hostile/aggressive, anxious/fearful and hyperactive/distractible behavioural problems have been considered as independent variables, the sub-dimensions of self-regulation which are attention-impulse control and positive emotion have been discussed as mediator variables and school readiness has been the dependent variable in this research. As noted in the related literature, gender of the children could predict their self-regulation and school readiness (Gunzenhauser & Von Suchodoletz, 2015; Hughes, White, Sharpen, & Dunn, 2000; McCoy & Raver, 2011; Montroy, Bowles, Skibbe, & Foster, 2014; Son, Lee, & Sung, 2013; Von Suchodoletz, Trommsdorff, & Heikamp, 2011). Therefore, gender has been included as a statistical control variable in regression analyses of the current study. This is because the statistical control variables are used in research models to provide more accurate (purified) relationships between the variables that are consistent with the theoretical background. For this reason, statistical control variables are benefited in bivariate hypothesis tests and more complex multivariate hypothesis analysis such as mediation and moderation (Spector & Brannick, 2011).

In data analysing process of the study, firstly, the normal distribution of the data was examined and the relationships between the variables were analysed with Pearson correlation analysis. The skewness and kurtosis values were calculated in order to determine whether the data were normally distributed or not. In this context, it was observed that the skewness of the variables varied between -0,12 and 1.24; the kurtosis of the variables varied between -0.14 and 1.46. The values less than 2 for skewness and 4 for kurtosis indicate that there is no significant violation in normality of the data set (Koydemir, Şimşek, & Demir, 2014). The correlation values of relationships between the independent variables and the mediator variables ranged from -0.016 to 0.278; 5 of 14 relations were found statistically significant at the level of 0.05. Lastly, the correlation value of relationship between the mediator variables and the dependent variable is 0.415 and 0.07; one of them was found statistically significant at the level of 0.05. The correlation values indicated that a mediation model could be established and there was no multicollinearity problem between the variables of the research. Furthermore, Tolerance and VIF values obtained from the data supported that there was no multicollinearity problem between the variables (Tolerance > 0.2, VIF < 10). Durbin-Watson coefficient was calculated in order to test the autocorrelation among the variables. Durbin-Watson value between 1.5 and 2.5 indicate the lack of autocorrelation problem (Kalaycı, 2010). As a result of the regression analyses conducted in this study, it was assumed that there was no autocorrelation between the independent variables.

In order to investigate the factors predicting school readiness of children within a mediation model, PROCESS macro which was developed by Andrew F. Hayes (www.afhayes.com) and integrated into SPSS software was used in this study. By using ordinary least squares regression, PROCESS macro is able to calculate path coefficients, standard errors, t and p values and bootstrap confidence intervals of all variables (independent, mediator, moderator, control and dependent variables) in a research model (Hayes, 2012, 2013; Hayes & Rockwood, 2017; Hayes, Montoya, & Rockwood, 2017). From this aspect, it is suggested that PROCESS, like all structural equation modelling software, can also be used for path analysis and this macro allows modelling a number of regression equations easily by researchers (Hayes, 2013; Hayes et al., 2017). By using this macro, the mediating effects in a research model can be calculated with Sobel test and bootstrapping method (Hayes, 2013). Thus, the mediating effect can also be assessed by examining the bootstrap confidence interval which is claimed as statistically more powerful than Sobel's method (Preacher & Hayes, 2004, 2008; Zhao, Lynch, & Chen, 2010; Hayes, 2013). In the current study, the indirect effects of attention-impulse control and positive emotion which are the mediating variables have been interpreted by using bootstrap analysis. The mediating role has been assumed as statistically significant when the lower limit (BootLLCI) and upper limit (BootULCI) of bootstrap results in %95 confidence interval are both below or above zero (Zhao et al., 2010; Hayes, 2013).

In the current study, the mediating role of the variables has been examined within the context of Zhao et al.'s (2010) mediation typologies. In the mediation test offered by Baron and Kenny (1986), a significant effect of independent variable on dependent variable is basically required. Besides, the mediating roles are named as "partial mediation, full mediation or no mediation" (Baron & Kenny, 1986). However, Zhao et al. (2010) claims that a significant relationship is not necessary in order to discuss the mediating role in a research model. In this context, while the path coefficients from independent variable to mediating variable is "a", mediating variable to dependent variable is "b" and independent variable to dependent variable is "c", the research model can be described as follows (Zhao et al., 2010):

- If "a x b" (mediated effect) and "c" are both significant, and "a x b x c" is positive; it is *complementary mediation*,
- If "a x b" and "c" are both significant, and "a x b x c" is negative; it is *competitive mediation*,
- If "a x b" is significant but "c" is insignificant, it is *indirect-only mediation*,
- If "a x b" is insignificant but "c" is significant; it is *direct-only nonmediation*,
- If "a x b" and "c" are both insignificant; it is *no-direct effect nonmediation*.

In this context, Zhao et al.'s (2010) complementary mediation overlaps with Baron and Kenny's (1986) partial mediation and the indirect-only mediation

Results

In the study, the role of parenting styles on children's school readiness through the mediation of attention-impulse control and positive emotion which are the sub-dimensions of self-regulation has been analysed via PROCESS macro. In this context, a regression model and three regression equations have been performed for each sub-dimension of parenting styles, and the findings about direct and indirect effects in the model have been presented in Table 1.

Table 1. Direct and Indirect Effects of Parenting Styles

Model 1	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
DA (X)	-0.01	0.07	-0,23	-0.02	0.06	-0.39	-0.03	0.10	-0.73
AIC (M1)	-	-	-	-	-	-	0.67	0.14	4.96*
PE (M2)	-	-	-	-	-	-	-0.01	0.15	-0.04
Constant	24.23	4.70	5.15*	11.64	4.32	2.70*	34.52	8.15	4.24*
Gender (CV)	-3,34	0,82	-4.07*	-0.26	0.75	-0.34	0.08	1.36	0.06
	$R^2=0.11; F=8.30; p=0.00$			$R^2=0.00; F=0.15; p=0.86$			$R^2=0.17; F=7.07; p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				0.01	0.04	-0.07	0.09		
Indirect effects: AIC				0.01	0.04	-0.07	0.09		
PE				0.00	0.01	-0.02	0.02		
Model 2	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
AA (X)	0.03	0.09	0.33	0.26	0.08	3.37*	0.05	0.14	0.31
AIC (M1)	-	-	-	-	-	-	0.67	0.14	4.95*
PE (M2)	-	-	-	-	-	-	-0.02	0.15	-0.11
Constant	24.68	1.90	12.98*	4.59	1.68	2.73*	31.17	4.46	6.99*
Gender (CV)	-3.31	0.82	-4.05*	-0.17	0.72	-0.24	0.05	1.36	0.04
	$R^2=0.11; F=8.33; p=0.00$			$R^2=0.08; F=5.75; p=0.00$			$R^2=0.17; F=7.06; p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				0.02	0.07	-0.13	0.16		
Indirect effects: AIC				0.02	0.07	-0.11	0.16		
PE				0.00	0.04	-0.10	0.07		
Model 3	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
OA (X)	-0.01	0.07	-0.18	-0.02	0.07	-0.35	-0.18	0.12	-1.57
AIC (M1)	-	-	-	-	-	-	0.67	0.13	4.98*
PE (M2)	-	-	-	-	-	-	-0.01	0.15	-0.07
Constant	25.75	2.68	9.62*	10.82	2.46	4.40*	38.49	5.48	7.02*
Gender (CV)	-3.34	0.82	-4.06*	-0.33	0.76	-0.43	-0.25	1.36	-0.18
	$R^2=0.00; F=0.11; p=0.00$			$R^2=0.00; F=0.14; p=0.87$			$R^2=0.19; F=7.78; p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				-0.01	0.06	-0.11	0.09		
Indirect effects: AIC				-0.01	0.05	-0.11	0.09		
PE				0.00	0.01	-0.02	0.02		
Model 4	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
PA (X)	0.08	0.08	1.07	0.07	0.07	1.05	0.11	0.12	0.88
AIC (M1)	-	-	-	-	-	-	0.66	0.14	4.88*
PE (M2)	-	-	-	-	-	-	-0.01	0.15	-0.09
Constant	23.54	1.73	13.61*	8.39	1.59	5.28*	30.05	4.23	7.10*
Gender (CV)	-3.30	0.81	-4.06*	-0.27	0.75	-0.37	0.02	1.35	0.01
	$R^2=0.12 F=8.91; p=0.00$			$R^2=0.01; F=0.63; p=0.53$			$R^2=0.18; F=7.27; p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				0.05	0.05	-0.04	0.18		
Indirect effects: AIC				0.05	0.05	-0.04	0.17		
PE				0.00	0.02	-0.05	0.02		

DA(X)= Democratic Attitude (Independent Variable); AA(X)= Authoritarian Attitude (Independent Variable); OA(X)= Overprotective Attitude (Independent Variable); PA(X)= Permissive Attitude (Independent Variable); AIC(M1)= Attention-Impulse Control (Mediating Variable 1), PE(M2)= Positive Emotion Control (Mediating Variable 2), SR(Y)= School Readiness (Dependent Variable); CV= Statistical Control Variable; SE= Standard Error.

* $p < 0.01$; BootLLCI= Lower limit of the bootstrap confidence interval with %95; BootULCI= Upper limit of the bootstrap confidence interval with %95; Bootstrap sampling size= 5000.

Table 1 proves that parenting styles do not statistically predict children's school readiness. In Model 1, findings of the regression analysis have revealed that parents' democratic attitude does not affect children's attention-impulse control ($\beta = -0.01$; $t = -0.23$; $p > 0.05$), positive emotions ($\beta = -0.02$; $t = -0.39$; $p > 0.05$) and school readiness ($\beta = -0.03$; $t = -0.73$; $p > 0.05$), but attention-impulse control which is a mediating variable in the model has a significant and positive effect on school readiness ($\beta = 0.67$; $t = 4.96$; $p < 0.01$). The indirect effects of the mediators in the model have been estimated in 95% confidence interval as $\text{BootLLCI}_{\text{AIC}} = -0.07$ and $\text{BootULCI}_{\text{AIC}} = 0.09$ for attention-impulse control (AIC); $\text{BootLLCI}_{\text{PE}} = -0.02$ and $\text{BootULCI}_{\text{PE}} = 0.02$ for positive emotions (PE). Because the upper (BootULCI) and lower limit (BootLLCI) of bootstrap results with 95% confidence intervals included zero (e.g. AIC: $-0.07 < 0 < 0.09$), the mediating roles of attention-impulse control and positive emotions have been resulted as insignificant in this model. Similar findings have been observed in bootstrap results for authoritarian attitude (Model 2), overprotecting attitude (Model 3) and permissive attitude (Model 4). The only significant effects observed in regression models for parenting styles have been the positive effect of authoritarian attitude on children's positive emotions ($\beta = 0.26$; $t = 3.37$; $p < 0.01$) and the negative effect of gender as the statistical control variable on children's attention-impulse control.

The role of behavioural problems on children's school readiness through the mediation of attention-impulse control and positive emotion which are the sub-dimensions of self-regulation has also been analysed via PROCESS macro. In this context, a regression model and three regression equations have been performed for each sub-dimension of behavioural problems, and the findings about direct and indirect effects in the model have been presented in Table 2.

Table 2. Direct and Indirect Effects of Behavioural Problems

Model 1	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
HA (X)	-0.26	0.11	-2.27**	0.02	0.11	0.14	-0.36	0.18	-1.93
AIC (M1)	-	-	-	-	-	-	0.62	0.14	4.54*
PE (M2)	-	-	-	-	-	-	0.01	0.15	0.06
Constant	25.86	0.63	41.07*	9.94	0.59	16.87*	33.96	3.72	9.13*
Gender (CV)	-3.03	0.81	-3.73*	-0.31	0.76	-0.40	0.26	1.34	0.19
	$R^2=0.14$ $F=11.15$; $p=0.00$			$R^2=0.00$; $F=0.09$; $p=0.92$			$R^2=0.19$; $F=8.16$; $p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				-0.16	0.09	-0.38	-0.01		
Indirect effects: AIC				-0.16	0.09	-0.38	-0.01		
PE				0.00	0.01	-0.02	0.03		
Model 2	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
AF (X)	-0.36	0.15	-2.39**	-0.40	0.14	-2.94*	-0.88	0.24	-3.67*
AIC (M1)	-	-	-	-	-	-	0.59	0.13	4.51*
PE (M2)	-	-	-	-	-	-	-0.12	0.14	-0.82
Constant	26.01	0.65	39.94*	10.79	0.59	18.22*	36.96	3.71	9.96*
Gender (CV)	-3.10	0.81	-3.85*	-0.04	0.73	-0.06	0.28	1.30	0.21
	$R^2=0.14$ $F=11.46$; $p=0.00$			$R^2=0.06$; $F=4.39$; $p=0.01$			$R^2=0.25$; $F=11.11$; $p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				-0.16	0.12	-0.45	0.03		
Indirect effects: AIC				-0.21	0.11	-0.49	-0.02		
PE				0.05	0.06	-0.04	0.21		
Model 3	AIC (M1)			PE (M2)			SR (Y)		
	β	SE	t	β	SE	t	β	SE	t
HD (X)	-0.43	0.20	-2.18**	-0.09	0.18	-0.49	-0.38	0.32	-1.17
AIC (M1)	-	-	-	-	-	-	0.64	0.14	4.68*
PE (M2)	-	-	-	-	-	-	-0.01	0.15	-0.04
Constant	25.79	0.62	41.46*	10.08	0.58	17.36*	33.18	3.75	8.85*
Gender (CV)	-2.89	0.83	-3.50*	-0.20	0.77	-0.26	0.30	1.37	0.22
	$R^2=0.14$ $F=10.93$; $p=0.00$			$R^2=0.00$; $F=0.20$; $p=0.82$			$R^2=0.18$; $F=7.45$; $p=0.00$		
<i>Bootstrap Results for Indirect Effects</i>				β	Boot SE	BootLLCI	BootULCI		
Total indirect effect:				-0.28	0.14	-0.62	-0.03		
Indirect effects: AIC				-0.28	0.15	-0.63	-0.03		
PE				0.00	0.03	-0.05	0.07		

HA(X)= Hostile/Aggressive (Independent Variable); AF(X)= Anxious/Fearful (Independent Variable); HD(X)= Hyperactive/Distractible (Independent Variable); AIC(M1)= Attention/Impulse Control (Mediating Variable 1), PE(M2)= Positive Emotions Control (Mediating Variable 2), SR(Y)= School Readiness (Dependent Variable); CV= Statistical Control Variable; SE= Standard Error.

* $p<0.01$; ** $p<0.05$; BootLLCI= Lower limit of the bootstrap confidence interval with %95; BootULCI= Upper limit of the bootstrap confidence interval with %95; Bootstrap sampling size= 5000.

In Table 2, it is observed that children's hostile/aggressive behavioural problem negatively effects their attention-impulse control ($\beta = -0.26$; $t = -2.27$; $p<0.05$), and positive emotions positively effects school readiness ($\beta = 0.62$; $t = 4.54$; $p<0.01$). On the other hand, it has been determined that hostile/aggressive behaviour and positive emotion do not significantly predict children's school readiness. Thus, the indirect effects of the mediating variables in Model 1 have been estimated as $BootLLCI_{AIC} = -0.38$ and $BootULCI_{AIC} = -0.01$ for attention-impulse control; $BootLLCI_{PE} = -0.02$ and $BootULCI_{PE} = 0.03$ for positive emotions with 95% confidence interval. Because the upper (BootULCI) and lower limit (BootLLCI) of bootstrap results with 95% confidence intervals excluded zero, the

mediating role of attention-impulse control has been determined as significant in this model. Since the indirect effect of attention-impulse control sub-dimension of self-regulation was found as significant ($\beta = -0.16$) while the direct effect of hostile/aggressive behaviour was insignificant ($\beta = -0.36$; $t = -1.93$; $p > 0.05$); it has been concluded by considering Zhao et al. (2010) that attention-impulse control has *indirect-only mediation* role in this model.

In the table, the results of Model 2 indicate the negative effect of anxious/fearful behavioural problem on children's attention-impulse control ($\beta = -0.36$; $t = -2.39$; $p < 0.05$), positive emotions ($\beta = -0.40$; $t = -2.94$; $p < 0.01$) and school readiness ($\beta = -0.88$; $t = -3.67$; $p < 0.01$). In addition, the positive effect of attention-impulse control on school readiness ($\beta = 0.59$; $t = 4.51$; $p < 0.01$) and the insignificant direct effect of positive emotion on school readiness ($\beta = -0.12$; $t = -0.82$; $p > 0.05$) have been observed. The indirect effects of the mediating variables in Model 2 have been estimated as $BootLLCI_{AIC} = -0.49$ and $BootULCI_{AIC} = -0.02$ for attention-impulse control; $BootLLCI_{PE} = -0.04$ and $BootULCI_{PE} = 0.21$ for positive emotions with 95% confidence interval. The mediating role of attention-impulse control has been determined as significant in this model, because the upper ($BootULCI$) and lower limit ($BootLLCI$) of bootstrap results with 95% confidence intervals excluded zero. Since anxious/fearful behavioural problem negatively affected children's school readiness and the negative indirect effect of attention-impulse control sub-dimension of self-regulation was found as significant ($\beta = -0.21$), it has been resulted by considering Zhao et al. (2010) that attention-impulse control has *complementary mediation* role in this model.

It is also observed in Table 2 that children's hyperactive/distractible behavioural problem negatively effects their attention-impulse control ($\beta = -0.43$; $t = -2.18$; $p < 0.05$), and positive emotions positively effects school readiness ($\beta = 0.64$; $t = 4.68$; $p < 0.01$). However, it has been determined that hyperactive/distractible behaviour and positive emotion do not significantly predict children's school readiness. Within this context, the indirect effects of the mediating variables in Model 3 have been estimated as $BootLLCI_{AIC} = -0.63$ and $BootULCI_{AIC} = -0.03$ for attention-impulse control; $BootLLCI_{PE} = -0.05$ and $BootULCI_{PE} = 0.07$ for positive emotions with 95% confidence interval. Because the upper ($BootULCI$) and lower limit ($BootLLCI$) of bootstrap results with 95% confidence intervals excluded zero, the mediating role of attention-impulse control has also been determined as significant in this model. Since the indirect effect of attention-impulse control sub-dimension of self-regulation was found as significant ($\beta = -0.28$) while the direct effect of hyperactive/distractible behaviour was insignificant ($\beta = -0.38$; $t = -1.17$; $p > 0.05$); it has been concluded by considering Zhao et al. (2010) that attention-impulse control has *indirect-only mediation* role in this model.

Discussion and Conclusion

As a result of this study, mediating role was examined in consideration with sub-dimensions of parenting styles, behavioural problems observed in children, self-regulation skills and school readiness and the following results were reached.

In this study, the effects of parenting styles, children's behavioural problems and self-regulation skills on school readiness of children have been examined by conducting regression analysis via PROCESS macro, and the results have proved that none of the sub-dimensions of parenting styles have directly or indirectly predicted children's school readiness through self-regulation. Matthews (2008) found that parental beliefs and behaviours during the children's primary school transition process did not affect the school readiness of children in the first year of primary school. Likewise; Bono, Sy, and Kopp (2015) found that behaviours of parents had no significant effect on children's social skills and behavioural problems. Sutter's (2013) research also indicates that school readiness of children to primary school is not predicted by parental practices. These results are parallel to the findings of the current study. Unlike these studies, Baker (2010) and Puccioni (2015) found that children whose parents performed high level of responsiveness and reasonable level of demandingness had high level of school readiness. The researches in the literature suggest that demographic and psychosocial factors should

also be investigated because they can affect school readiness. Therefore, investigating the influence of the other factors related to parents on children's school readiness is considered as important.

In this study the negatively directed relationship between anxious/fearful behaviour as a behavioural problem observed in children and school readiness was found. In this context, the indirect effect of behavioural problems on children's school readiness through attention-impulse control and positive emotion regulation has been investigated. It was concluded that hostile/aggressive and hyperactive/distractible behaviours which are external behavioural problems of children negatively affected their attention-impulse control, and attention-impulse control positively affected their school readiness. On the other hand, it was found that hostile/aggressive and hyperactive/distractible behaviours, and positive emotion did not significantly and directly predict children's school readiness. Since the indirect effect of attention-impulse control sub-dimension of self-regulation was found as significant while the direct effects of external behavioural problems on children's school readiness were insignificant, it was concluded by Zhao et al. (2010) that attention-impulse control had "indirect-only mediation" role in this research. On the other hand, it was found that anxious/fearful behaviour which is an internal behavioural problem of children negatively affected their attention-impulse control, positive emotion and school readiness. It was also determined that attention-impulse control had a significant positive effect on school readiness while positive emotion did not significantly affect school readiness. Because children's anxious/fearful behaviour had a negative effect on school readiness and attention-impulse control dimension of self-regulation had a significant indirect effect in this relationship, it was concluded by Zhao et al. (2010) that attention-impulse control performed "complementary mediation" role in this research.

Children's ability to focus and shift attention on key pieces and the ability to control distracting behavioural impulses, are considered as one of the most important points in becoming successful at social and academic skills. In preschool period, academic success of children with social and emotional problems is adversely influenced. Emotional well-being and academic success is in interaction with each other, and it is seen that children not ready for school have generally negative emotions while proceeding to primary school (Raver, 2002). It is seen in the literature that children who cannot control their negative emotions and who feel anxious are not ready for school (McClelland, Morrison, & Holmes, 2000). Based on the finding of this research, it can be stated that anxious/fearful children's school readiness is influenced adversely. Eisenberg et al. (2001) determined in their study which compared the children having external and internal behavioural problems with problem-free ones that children with behavioural problems are angrier and more impulsive, and their level of self-regulation is lower than problem-free children. They also stated that children experience problems in focusing their attention in case of increase of their anxiety, and preschool-aged children with internal behaviours show low level of attention and impulse control. Dennis, Brotman, Huang, and Gouley (2007) found that internal behavioural problems are related to control skills requiring effort of four-year-old-children in the negative direction. The existing research and previous studies show that state of anger and anxiety may influence attention skills adversely. On the other hand, no significant relationship between children's being hostile/aggressive and hyperactive/distractible and attention-impulse control skills was found. Similarly, Lemery, Essex, and Smider (2002) concluded in their studies that children's being anxious and fearful is related to low-level of concentration and executive control skills. Likewise, Murray and Kochanska (2002) also found that children's effortful controls are associated with children's internal behavioural problems. The results of this research are considered to contribute to rare studies about children's internal behavioural problems in the literature.

Another result of this research is that the more children's anxious/fearful behaviours increase, the more adversely positive emotion (emotion regulation), which is a dimension of self-regulation, is influenced. Eisenberg et al. (2000) found in their studies at which they determined external problems of children at primary-school age, resulting from attention, behaviour regulation and states of negative emotion, that state of negative emotions resulting from individual differences plays a mediator role between children's behavioural and emotional regulations and behavioural problems. In addition, in the studies in the literature, a significant relationship between children's emotional regulations and executive processes was found (Liebermann, Giesbrecht, & Müller, 2007; McCoy & Raver, 2011; Simonds, Kieras, Rueda, & Rothbart, 2007). In the light of the studies in the literature and existing research results, it can be stated that emotional regulation skill of self-regulation may help a child to behave in compliance with his/her social environment, which may also minimize the conflicts between him/her and his/her teacher or peers.

The study has also revealed that positive emotion as a sub-dimension of self-regulation do not significantly predict children's school readiness. When direct and indirect effects have been examined, the mediating role of attention-impulse control between children's behavioural problems and school readiness has been determined. The bootstrap analysis conducted in order to investigate the significance of mediating effects revealed that attention-impulse control dimension of self-regulation had a "complementary mediation" in the relationship between children's anxious/fearful behaviour and school readiness. Attention-impulse control also performed "indirect-only mediation" role in the relationships between hostile/aggressive behaviour - school readiness and hyperactive/distractible behaviour - school readiness. It has been proved in the literature by numerous studies that self-regulation skills are associated with school readiness (Blair & Razza, 2007; McClelland et al., 2007; Smith et al., 2008; Von Suchodoletz, Trommsdorff, Heikamp, Wieber, & Gollwitzer, 2009; Welsh et al., 2010). In addition to these studies, Eisenberg, Valiente, and Eggum (2010) compiled the researches that will prove effortful controls are pioneer in school readiness and academic success in their studies and suggested a model. They modelled the mediation role of the relationship between children and their peers and teachers between effortful controls and academic competence. Blair (2002) specified that negative emotional reactions (anger or anxiety) prevent children's regulation skills which are necessary to persist their tasks in school environment and sustain their attentions. Barriga et al. (2002) set forth the mediation effect of attention problems in the relationship between the youth's internal behavioural problems and academic failure. In conclusion, it is seen that it is also important that children regulate their behaviours, attention and emotions no matter how well their learning skills are. It can be a good example that children who can easily get angry or anxious concentrate on school works with more difficulty compared to children who can regulate their emotional reactions effectively for the situation mentioned above. The research findings are parallel to the studies about this in the literature.

Children use their self-regulation skills in controlling their attention, inhibiting their impulsive reactions, delaying their pleasure, cooperating with their peers and showing goal-oriented behaviours. If children fail to develop these skills while proceeding to preschool education or primary school and show high-level of behavioural problems, they take place in the risk group having psychological disorders, anti-social behaviours and even using drugs in the following periods (Bierman, Nix, & Makin-Byrd, 2008). These children are in the risk group in terms of not only behavioural problems but also academic failures. Hence, early diagnosis is highly important for these children and it is believed that including them in preventive or intervening programs as early as possible will minimize the possible problems they may have in the later periods. Thus, functional behaviour assessment means can be used in order to detect the problems in the early period. It is known that certain environmental factors cause behavioural problems. These variables or factors can be identified through assessment and scrutinizing these factors may minimize the problematic behaviour on regular basis or the development of a behaviour in favour of the community can be supported (Austin & Sciarra, 2013).

Research results display that the idea of focusing on children's self-regulation brings along several approaches. In this research, it is set forth that behaviour regulation and cognitive components underlying in it are associated with school readiness. Therefore, we can say children's behaviour and attention regulations are more determinative skills for school readiness compared to emotional regulation. Focusing on fundamental cognitive mechanisms of self-regulation skills, especially supporting executive functions development during pre-school period indicate that it undertakes the prerequisite for children's academic skill-development during primary school. Early-period academic success is established on children's behavioural regulation skills regarding future academic and social functionality such as remembering the instructions and studying independently (McClelland et al., 2007). Behavioural disorders do not allow children to participate in school responsively and bring about significant risks in terms of failure.

Family, schools and training programs, in short, social surrounding should be assigned with several responsibilities so as to support children's attention and behaviour regulation skills. Adults can enable the development of these skills for the children by establishing routines, becoming models in terms of social behaviours, and improving creative, supportive and reliable relationships with them. Furthermore, it is extremely important for the development of their skills to provide opportunities in order to help them guide their own actions by focusing on creative games and activities that will support social relations, teaching how to cope with stress, and reducing adult monitoring in time. Pre-school teachers should support children's social skill development inside the class, determine class management strategies for this, and children's individual interests and skills. Moreover, they can use preventive means for children's problematic behaviours and support children's development by means of effective intervening strategies (eg. positive behaviour support and peer learning) when needed. Teachers can set a warm, positive and attentive environment for understanding, expressing and regulating the feelings in order to contribute to development of emotional skills and help children express their feelings in appropriate means in preschool institutions. Children with high self-motivation can obey the class rules, work on a problem without anxiety or anger; in addition, they can be successful at working with their teacher and peers (Bono & Bizri, 2014). It is concluded in this study that being anxious/fearful among internal behavioural problems of children influence attention-impulse control levels adversely and attention-impulse control levels affect school readiness positively. The existence of such a model at which specific findings are discovered as a result of this research provides pre-determiner proofs that will shed light to future psychopathology studies. As a result of testing and verifying the foreseen model, it is considered the fact that the relationship between problematic behaviours to be observed during preschool period and school readiness is clearly comprehended will help make assessment appropriate to the children in the risk group and determine preventive and intervening strategies.

Suggestions

This study supports the viewpoint which is there is a predictable relationship between children's attention-impulse control skills and school readiness. Individual differences in children's emotion and attention-impulse regulation mechanisms and contributions in factors such as the effect of relationships with peers and teachers are needed to be evaluated in additional researches. Thus, social effects can be searched in consideration of interactions of these factors with children's behavioural disorders. In examination of domestic studies, it is realized that more research and evidence-based knowledge are needed for self-regulation skills. Therefore, the number of early intervention programs which are limited and aimed to develop early period skills of children displaying emotional and behavioural disorder in Turkey can be increased in line with the results obtained.

Factors that may cause children's behavioural problems are not included in scope of this research. Environmental and physical factors that may cause behavioural problems in children can also be added and so researches can be more comprehensive. The fact that this model covering children's behavioural problems should drift from children with normal development, and be repeated on children with only behavioural problems is considered to yield more solution-oriented results. Hence, causal relationships can be clarified through studies evaluating different roles of self-regulation in children's problem occurrence.

Mediating role of self-regulation skills in the relationship between school readiness and children's behavioural problems is confirmed in the research and it is seen that children's behavioural problems influence both self-regulation skills and school readiness. These results set forth the importance of searching for means to determine and heal children's behavioural problems. In the light of this finding of the study, it may be aimed to create a conscience regarding what may cause children's behavioural problems and what the results may be by informing parents about behavioural problems. Activities that will reinforce mother-father-child relationships and that include preventive and intervening studies for behavioural problems can be planned through trainings for parents at schools.

References

- Austin, V. L., & Sciarra, D. T. (2013). *Çocuk ve ergenlerde duygusal ve davranışsal bozukluklar* (M. Özekes, Trans.). Ankara: Nobel Publishing.
- Baker, C. E. (2010). *Family and sociodemographic predictors of school readiness in Hispanic kindergarteners* (Unpublished doctoral dissertation). University of Virginia.
- Baker, C. E., Cameron, C. E., Rimm-Kaufman, S. E., & Grissmer, D. (2012). Family and sociodemographic predictors of school readiness among African American boys in kindergarten. *Early Education & Development, 23*(6), 833-854. doi: 10.1080/10409289.2011.607359
- Barkley, R. A. (2001). The inattentive type of ADHD as a distinct disorder: What remains to be done. *Clinical Psychology: Science and Practice, 8*(4), 489-493. doi: 10.1017/S0954579405050388
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.
- Barriga, A. Q., Doran, J. W., Newell, S. R., Morrison, E. M., Barbetti, V., & Robbins, B. D. (2002). Relationship between problem behaviors and academic achievement in adolescents: The unique role of attention problems. *Journal of Emotional and Behavioral Disorders, 10*, 233-240. doi: 10.1177/10634266020100040501.
- Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *The Journal of Early Adolescence, 11*(1), 56-95. doi: 10.1177/0272431691111004.
- Becker, D. R., Miao, A., Duncan, R., & McClelland, M. M. (2014). Behavioral self-regulation and executive function both predict visuomotor skills and early academic achievement. *Early Childhood Research Quarterly, 29*(4), 411-424. doi: 10.1016/j.ecresq.2014.04.014
- Behar, L., & Stringfield, S. (1974). A behavior rating scale for the preschool child. *Developmental Psychology, 10*(5), 601-610.
- Bierman, K. L., Torres, M. M., Domitrovich, C. E., Welsh, J. A., & Gest, S. D. (2009). Behavioral and cognitive readiness for school: Cross-domain associations for children attending head start. *Social Development, 18*(2), 305-323. doi: 10.1016/j.ecresq.2014.09.001
- Bierman, K., Nix, R., & Makin-Byrd, K. (2008). Using family-focused interventions to promote child behavioral readiness for school. In A. Booth, & A. C. Crouter (Eds.), *Disparities in school readiness: How families contribute to transitions into school* (pp. 283-298). New York: Lawrence Erlbaum Associates.
- Blair, C. (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist, 57*(2), 111-127. doi: 10.1037/0003-066X.57.2.111
- Blair, C., & Diamond, A. (2008). Biological processes in prevention and intervention: The promotion of self-regulation as a means of preventing school failure. *Development and Psychopathology, 20*(03), 899-911. doi: 10.1017/S0954579408000436
- Blair, C., & Razza, R. P. (2007). Relating effortful control, executive function, and false belief understanding to emerging math and literacy ability in kindergarten. *Child Development, 78*(2), 647-663. doi: 10.1111/j.1467-8624.2007.01019.x
- Bono, K. E. (2003). *Self-Regulation and school readiness: Influences of parenting, language ability and temperament* (Unpublished doctoral dissertation). Claremont Graduate University.
- Bono, K. E., & Bizri, R. (2014). The role of language and private speech in preschoolers' self-regulation. *Early Child Development and Care, 184*(5), 658-670. doi: 10.1080/03004430.2013.813846.
- Bono, K. E., Sy, S. R., & Kopp, C. B. (2016). School readiness among low-income black children: Family characteristics, parenting, and social support. *Early Child Development and Care, 186*(3), 419-435. doi: 10.1080/03004430.2015.1039528.

- Çağdaş, A., & Seçer, Z. (2006). *Anne-baba eğitimi* (2nd ed.). Ankara: Kök Publishing.
- Darling, N. (1999). Parenting style and its correlates. *ERIC Digest*, 12(02), 333-1386.
- Dennis, T. A., Brotman, L. M., Huang, K. Y., & Gouley, K. K. (2007). Effortful control, social competence, and adjustment problems in children at risk for psychopathology. *Journal of Clinical Child and Adolescent Psychology*, 36(3), 442-454.
- Derryberry, D., & Rothbart, M. K. (1997). Reactive and effortful processes in the organization of temperament. *Development and Psychopathology*, 9(4), 633-652.
- Drossos, N. T. (2004). *Executive function and externalizing behavior problems in preschool children* (Unpublished doctoral dissertation). The Graduate College of The Illinois Institute of Technology.
- Eiden, R. D., Edwards, E. P., & Leonard, K. E. (2007). A conceptual model for the development of externalizing behavior problems among kindergarten children of alcoholic families: Role of parenting and children's self-regulation. *Developmental Psychology*, 43(5), 1187-1201. doi: 10.1037/0012-1649.43.5.1187
- Eisenberg, N., Cumberland, A. J., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., ... Guthrie, I.K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development*, 72, 1112-1134. doi: 10.1037/1528-3542.6.3.498
- Eisenberg, N., Guthrie, I. K., Fabes, R. A., Shepard, S., Losoya, S., Murphy, B. C., ... Reiser, M. (2000). Prediction of elementary school children's externalizing problem behaviors from attentional and behavioral regulation and negative emotionality. *Child Development*, 1367-1382. doi: 10.1111/1467-8624.00233
- Eisenberg, N., Valiente, C., & Eggum, N. D. (2010). Self-regulation and school readiness. *Early Education and Development*, 21(5), 681-698. doi: 10.1080/10409289.2010.497451
- Ergül, C. (2010). Sık rastlanan yetersizlikler. In İ. H. Diken (Ed.), *Erken çocukluk eğitimi* (pp. 280-318). Ankara: Pegem Akademi.
- Erkan, S. (2011). Farklı sosyoekonomik düzeydeki ilköğretim birinci sınıf öğrencilerinin okula hazır bulunuşluklarının incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 40, 186-197.
- Erkan, S., & Kırca, A. (2010). Okul öncesi eğitimin ilköğretim birinci sınıf öğrencilerinin okula hazır bulunuşluklarına etkisinin incelenmesi. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 38, 94-106.
- Graziano, P. A., Slavec, J., Hart, K., Garcia, A., & Pelham Jr, W. E. (2014). Improving school readiness in preschoolers with behavior problems: Results from a summer treatment program. *Journal of Psychopathology and Behavioral Assessment*, 36(4), 555-569. doi: 10.1007/s10862-014-9418-1
- Gunzenhauser, C., & Von Suchodoletz, A. (2015). Boys might catch up, family influences continue: Influences on behavioral self-regulation in children from an affluent region in Germany before school entry. *Early Education and Development*, 26(6), 645-662. doi: 10.1080/10409289.2015.1012188
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling. Retrieved from <http://www.afhayes.com/public/process2012.pdf>.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Press.
- Hayes, A. F., Montoya, A. K., & Rockwood, N. J. (2017). The analysis of mechanisms and their contingencies: PROCESS versus structural equation modeling. *Australasian Marketing Journal (AMJ)*, 25(1), 76-81. doi: 10.1016/j.ausmj.2017.02.001
- Hayes, A. F., & Rockwood, N. J. (2017). Regression-based statistical mediation and moderation analysis in clinical research: Observations, recommendations, and implementation. *Behaviour Research and Therapy*, 98, 39-57. doi: 10.1016/j.brat.2016.11.001

- Hill, N. E. (2001). Parenting and academic socialization as they related to school readiness: The roles of ethnicity and family income. *Journal of Educational Psychology*, 93(4), 686-697. doi: 10.1037/0022-0663.93.4.686
- Hughes, C., White, A., Sharpen, J., & Dunn, J (2000). Antisocial, angry, and unsympathetic: Hard-to-manage preschoolers' peer problems and possible cognitive influences. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41, 169-179. doi: 10.1080/03004430.2010.509795
- İnal, G. (2013). Okula başlama ve uyum süreci. In F. Alisınanoğlu (Ed.), *İlköğretime hazırlık ve ilköğretim programları* (2nd ed., pp. 68-88). Ankara: Pegem Akademi.
- Johnson, K. (2008). *The role of parent self-efficacy and parenting behaviors on school readiness outcomes* (Unpublished doctoral dissertation). University of South Carolina.
- Kalaycı, Ş. (2010). *Spss uygulamalı çok değişkenli istatistik teknikleri* (5th ed.). Ankara: Asil Yayın Dağıtım
- Kanlıklıçer, P. (2005). *Okul öncesi davranış sorunları tarama ölçeği: geçerlilik güvenirlik çalışması* (Unpublished master's thesis). Marmara University, Institute of Educational Sciences, İstanbul.
- Karabulut Demir, E., & Şendil, G. (2008). Ebeveyn tutum ölçeği (ETÖ). *Türk Psikolojik Yazıları*, 11(21), 15-25.
- Karakaya, İ (2011). Bilimsel araştırma yöntemleri. In A. Tanrıöğen (Ed.), *Bilimsel araştırma yöntemleri* (4th ed., pp. 87-83) Ankara: Anı Publishing.
- Karasar, N. (2009). *Bilimsel araştırma yöntemi* (19th ed.). Ankara: Nobel Publishing.
- Karreman, A., van Tuijl, C., van Aken, M. A., & Deković, M. (2006). Parenting and self-regulation in preschoolers: A meta-analysis. *Infant and Child Development*, 15(6), 561-579. doi: 10.1002/icd.478
- Keller, J. (2008). On the development of regulatory focus: The role of parenting styles. *European Journal of Social Psychology*, 38(2), 354-364. doi: 10.1002/ejsp.460
- Kiss, M., Fechete, G., Pop, M., & Susa, G. (2014). Early childhood self-regulation in context: Parental and familial environmental influences. *Cognition, Brain, Behavior*, 18, 55-85.
- Koydemir, S., Şimşek, Ö. F., & Demir, M. (2014). Pathways from personality to happiness: Sense of uniqueness as a mediator. *Journal of Humanistic Psychology*, 54(3), 314-335. doi: 10.1177/0022167813501226
- Lemery, K. S., Essex, M. J., & Smider, N. A. (2002). Revealing the relation between temperament and behavior problem symptoms by eliminating measurement confounding: Expert ratings and factor analyses. *Child Development*, 73(3), 867-882.
- Liebermann, D., Giesbrecht, G. F., & Müller, U. (2007). Cognitive and emotional aspects of self-regulation in preschoolers. *Cognitive Development*, 22(4), 511-529. doi: 10.1016/j.cogdev.2007.08.005
- Love, J. M., Logue, M. E., Trudeau, J. V., & Thayer, K. (1992). Transitions to kindergarten in American schools. *Portsmouth, NH: Department of Education*. Retrieved from <http://files.eric.ed.gov/fulltext/ED344693.pdf>
- McClelland, M. M., Cameron, C. E., Connor, C. M., Farris, C. L., Jewkes, A. M., & Morrison, F. J. (2007). Links between behavioral regulation and preschoolers' literacy, vocabulary, and math skills. *Developmental Psychology*, 43, 947-959. doi: 10.1037/0012-1649.43.4.947
- McClelland, M. M., Morrison, F. J., & Holmes, D. L. (2000). Children at risk for early academic problems: The role of learning-related social skills. *Early Childhood Research Quarterly*, 15, 307-329.
- Maccoby, E., & Martin, J. (1983). Socialization in the context of the family: Parent-child interaction. In E. M. Hetherington, & P. H. Mussen (Series Eds.), *Handbook of Child Psychology: Vol 4. Socialization, Personality, and Social Development* (pp.1-101). New York: Wiley.
- McCoy, D. C., & Raver, C. C. (2011). Caregiver emotional expressiveness, child emotion regulation, and child behavior problems among Head Start families. *Social Development*, 20(4), 741-761. doi: 10.1111/j.1467-9507.2011.00608.x

- Matthews, E. (2008). *Investigating the association of parental influence and children's school readiness and early academic achievement: An analysis using early childhood longitudinal study-kindergarten (ECLS-K)* (Unpublished doctoral dissertation). The Temple University Graduate Board.
- Montroy, J. J., Bowles, R. P., Skibbe, L. E., & Foster, T. D. (2014). Social skills and problem behaviors as mediators of the relationship between behavioral self-regulation and academic achievement. *Early Childhood Research Quarterly, 29*(3), 298-309. doi: 10.1016/j.ecresq.2014.03.002
- Murray, K. T., & Kochanska, G. (2002). Effortful control: Factor structure and relation to externalizing and internalizing behaviors. *Journal of Abnormal Child Psychology, 30*(5), 503-514.
- Oktay, A. (2013). İlköğretime hazır oluş ve hazır oluşu etkileyen temel faktörler. In A. Oktay (Ed.), *İlköğretime hazırlık ve ilköğretim programları* (pp. 24-36). Ankara: Pegem Akademi.
- Pears, K. C., Healey, C. V., Fisher, P. A., Braun, D., Gill, C., Conte, H. M., ... Ticer, S. (2014). Immediate effects of a program to promote school readiness in low-income children: Results of a pilot study. *Education & Treatment of Children, 37*(3), 431-460. doi: 10.1353/etc.2014.0021
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*(4), 717-731.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.
- Puccioni, J. (2015). Parents' conceptions of school readiness, transition practices, and children's academic achievement trajectories. *The Journal of Educational Research, 108*(2), 130-147. doi: 10.1080/00220671.2013.850399
- Raver, C. C. (2002). Emotions matter: Making the case for the role of young children's emotional development for early school readiness. *Society for Research in Child Development, 16*(3), 3-19.
- Rimm-Kaufman, S. E., & Wanless, S. B. (2012). An ecological perspective for understanding the early development of self-regulatory skills, social skills and achievement. In R. C. Pianta (Ed.), *Handbook of Early Childhood Education* (pp. 299-323). Newyork: The Guilford Press.
- Rimm-Kaufman, S. E., Pianta, R. C., & Cox, M. J. (2000). Teachers' judgments of problems in the transition to kindergarten. *Early Childhood Research Quarterly, 15*(2), 147-166. doi: 10.1016/S0885-2006(00)00049-1
- Schmitt, S. A., McClelland, M. M., Tominey, S. L., & Acock, A. C. (2015). Strengthening school readiness for Head Start children: Evaluation of a self-regulation intervention. *Early Childhood Research Quarterly, 30*, 20-31. doi: 10.1016/j.ecresq.2014.08.001
- Simonds, J., Kieras, J. E., Rueda, M. R., & Rothbart, M. K. (2007). Effortful control, executive attention, and emotional regulation in 7-10 year old children. *Cognitive Development, 22*(4), 474-488. doi: 10.1111/j.1750-8606.2011.00196.x
- Smith, L. E., Borkowski, J. G., & Whitman, T. L. (2008). From reading readiness to reading competence: The role of self-regulation in at-risk children. *Scientific Studies of Reading, 12*(2), 131-152. doi: 10.1080/10888430801917167
- Smith-Donald, R., Raver, C. C., Hayes, T., & Richardson, B. (2007). Preliminary construct and concurrent validity of the Preschool Self-regulation Assessment (PSRA) for field-based research. *Early Childhood Research Quarterly, 22*(2), 173-187. doi: 10.1016/j.ecresq.2007.01.002
- Son, S. H., Lee, K., & Sung, M. (2013). Links between preschoolers' behavioral regulation and school readiness skills: The role of child gender. *Early Education & Development, 24*(4), 468-490.
- Spector, P. E., & Brannick, M. T. (2011). Methodological urban legends: The misuse of statistical control variables. *Organizational Research Methods, 14*(2), 287-305. doi: 10.1177/1094428110369842
- Sutter, C. A. (2013). *Parenting and school readiness in low-income families: what can be gained from examining everyday contexts of interaction and children's self-regulation?* (Unpublished doctoral dissertation). University of California.

- Tanrıbuyurdu, E. F. (2012). *Okul öncesi öz-düzenleme ölçeği geçerlik ve güvenirlik çalışması* (Master's thesis). Hacettepe University, Institute of Social Sciences, Ankara.
- Tanrıbuyurdu, E. F., & Yıldız, T. G. (2014). Okul öncesi öz-düzenleme ölçeği (OÖDÖ): Türkiye uyarlama çalışması. *Eğitim ve Bilim*, 39(176), 317-328. doi: 10.15390/EB.2014.3647
- Torres, M. M. (2011). *Understanding self-regulation, links to school readiness, and implications for intervening with high-risk children* (Unpublished doctoral dissertation). The Pennsylvania State University.
- Vitaro, F., Tremblay, R. E., Gagnon, C., & Boivin, M. (1992). Peer rejection from kindergarten to grade 2: Outcomes, correlates, and prediction. *Merrill-Palmer Quarterly*, 38(3), 382-400.
- Volling, B. L., Blandon, A. Y., & Kolak, A. M. (2006). Marriage, parenting, and the emergence of early self-regulation in the family system. *Journal of Child and Family Studies*, 15(4), 489-502. doi: 10.1080/14616734.2016.1259335
- Von Suchodoletz, A., Trommsdorff, G., & Heikamp, T. (2011). Linking maternal warmth and responsiveness to children's self-regulation. *Social Development*, 20(3), 486-503.
- Von Suchodoletz, A., Trommsdorff, G., Heikamp, T., Wieber, F., & Gollwitzer, P. M. (2009). Transition to school: The role of kindergarten children's behavior regulation. *Learning and Individual Differences*, 19(4), 561-566. doi: 10.1016/j.lindif.2009.07.006.
- Welsh, J. A., Nix, R. L., Blair, C., Bierman, K. L., & Nelson, K. E. (2010). The development of cognitive skills and gains in academic school readiness for children from low-income families. *Journal of Educational Psychology*, 102(1), 43. doi:10.1037/a0016738.
- Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197-206. doi: 10.1086/651257