



The Intermediary Role of Self-Regulation Skills in the Correlation between Peer Relations and School Adaptation in Preschool Children

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Abstract

In this study, peer relationships and school adjustment of refugee and non-refugee children were compared. In addition, it is aimed to examine the mediating role of self-regulation in the relationship between children's parent and peer relationships and school adjustment. The study was conducted on a total of 120 children attending preschool, including 50 refugees and 70 non-refugees. The data of the study were obtained using the Child Behavior Scale by Ladd and Profile, School Adaptation Teacher Rating Scale-Short Form, and Self-Regulatory Skills Scale. The analysis of the data was done using the t-test and structural equation analysis. As a result of the study, peer relations and school adaptation of non-refugee children were significantly higher than those of the refugee children. In the correlational part of the study, peer relations were found to have positive and significant effects on school adaptation and self-regulation skills and self-regulation skills were found to have positive and significant effects on school adaptation skills. In addition, self-regulation skills were found to have a complete intermediary role between peer relations and school adaptation.

Keywords

Peer relations
School adaptation
Self-regulation
Intermediary role
Refugee child

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Introduction

Peer relationships can be defined as a set of continuous interactions and actions between individuals who have reached the same age, development or maturity level and share a similar life story, value, lifestyle and social context (Gülay, 2010). From a very young age, children interact, play and talk among themselves; such exchanges become increasingly reciprocal and coordinated during the preschool years. Therefore, during child development, peer-to-peer relationships present unique prospects for social, cognitive, and linguistic growth that may differ from child-adult exchanges (Bauminger-Zviely, Eytan, Hoshmand, & Rajwan Ben-Shlomo, 2021). It is stated that children who establish successful relationships with their peers in the pre-school period may become advantageous in terms of school adjustment, academic success, social and emotional competence (Aydođdu, 2022; Shin, Cho, Shin, & Park, 2016). Strong peer relationships are an important factor for children to be compatible. Adaptation is defined as a process in which an individual creates changes in himself, others or his environment in order to maintain the balance between himself and his environment. (Aydođdu, 2019). Adaptation refers to a harmonious relationship between individuals and their environment in which their needs are met in accordance with social expectations (Deka, 2017). Children's personal and environmental adaptability allows them to realize themselves and facilitate their lives.

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Adaptation to school is an important factor in the process of socialization of children. This concept is considered more important especially for preschool children who step into a new social environment because the school accommodates young children's first contact with the world outside the home (Sekar & Lawrence, 2016) and their first experiences testing their ability to adapt to a social environment. The process of school adaptation of children attracts the attention of researchers interested in early childhood from the perspective of various sciences, such as pedagogy, medicine, psychology, and sociology (Koroleva, 2018). School Adaptation is the process of adapting to the role of students and various aspects of the school environment. Adaptation to school plays a vital role in children's lives and contributes positively to their future lives. (Lakhani, Jain, & Chandel, 2017). In the early stages of their lives, children learn to adapt to various roles and expectations such as building relations with teachers and peers, sharing their environment and play materials, and following daily routines. Young children can develop and maintain trust, positive interactions, and relationships with adults and peers in kindergarten and acquire the skills necessary to understand the role of social interactions and self-control (Chi, Kim, & Kim, 2018; Yoleri, 2014).

Leaving parents, entering a new environment, and meeting peers require a child to develop new social and emotional ties. In the process of adaptation to a preschool, children can have various reactions. Some children can adapt faster, and their reactions may be mild, even imperceptible. On the other hand, some children may react more intensely to environments different from the atmosphere of their upbringing. (Markovic, Mamutovic, & Petrovic, 2019). Children's successful adaptation to school is affected by a number of factors, including academic, social, emotional, behavioral and cognitive competencies (McIntyre, Blacher, & Baker, 2006).

Peer Relations and School Adaptation

Children are expected to interact with peers, establish their autonomy, and develop their identity in order to adapt to their teachers and classrooms. Positive relationships with teachers, friendships, and social status among peers are important factors in children's school and classroom adaptation (McIntyre et al., 2006). Peer relations are of critical importance, especially for preschool children. Strong peer relationships support children in the school environment and help them adapt to school. Peers can become a source of support for dealing with problems and can help a child cope with alienation. Children who are approved by their peers and who identify with friends adapt better to school. Children with positive peer relations demonstrate more social behavior, are popular, have high self-esteem, have fewer emotional problems, have better attitudes towards school, and have higher academic success (Lakhani et al., 2017). While children with strong peer relationships perform well in school (Bossaert, Doumen, Buyse, & Verschueren, 2011), whereas friendships with negative qualities lead to lowered class participation and problematic behavior in the classroom. Heinze, Miller, Seifer, Dickstein, and Locke (2015) determined that children with negative peer relations are more likely to encounter victimization/rejection.

Peer Relations, School Adaptation and Refugee Factor

Another factor affecting the development of peer relations in the preschool period is being a refugee. Refugees are defined as those who have left the country for fear of being prosecuted because of their race, language, religion, belonging to a social group or having a political view (Tümertekin & Özgüç, 2009). Refugees and migrants often use the same roads, modes of transport and networks, but differ from each other. While refugees are forced to flee to save their lives or protect their freedom; Immigrants migrate to join family members abroad who move across an international border, to earn a living, and to escape a natural disaster (Aydođdu, 2019). These difficult migration experiences of refugees can have negative effects on the development of their children. Refugee children may have more problems in their peer relationships and adaptation to school due to the negative experiences they have. Considering the experience of forced migration and detachment from home inherent in the lives of refugees, refugee children often experience violence, loss of family members, discrimination, and long-term uncertainty before, during, and after the migration (de Montgomery, Petersen, & Jervelund, 2020). Problems may arise in the integration of exposed children who migrated with such negativities

to the places they migrated. Especially young children experience difficulties in adapting to school as they receive an education with children who speak a different language and have a distinct culture and it is harder for them to be accepted by local children. Such difficulties may cause refugee children to have more problems in their peer relationships (Lau et al., 2018) and adjustment (Aydođdu & Gürsoy, 2021). Neitzel, Drennan, and Fouts (2019) found that immigrant children had lower social status and were less likely to become leaders in their study on preschool children. In their study on the families, teachers, and school administrators of preschool children, Yalçın and Simsar (2020) revealed that communication problems, economic situations of families, official procedures, and prejudices affect children's adaptation to school. These results indicate the effects of many factors such as the migration process, socio-demographic characteristics of families and perceptions of the host society on the adjustment of children exposed to migration. Such problems cause refugee children to encounter more developmental problems than other children. In their study on refugee and non-refugee children, Samara, El Asam, Khadaroo, and Hammuda (2020) reported that young refugee children experienced more problems with their peers, functional impairment, physiological and psychosomatic issues than the children in the control group. When evaluated in the context of Turkey, it is seen that the number of refugee children is increasing day by day. According to the latest statistical data of the General Directorate of Migration Management, Afghan students are in the third place (General Directorate of Migration Management, 2016). Reasons such as the illegal entry of Afghan refugees through the irregular migration process rather than official ways (Geyik Yıldırım, 2018), their migration to avoid war and persecution, and language and cultural differences bring about integration problems. Therefore, this process may affect the adaptation of Afghan children to the regions they migrated to. Bozkurt Polat, Özbey, Türkmen, and Köyceğiz Gözeler (2020) conclude that preschool age Afghan children experience difficulties in adapting themselves to a new environment along with the lack of proper social skills. The outcomes inform that it is inevitable to reconsider Afghan children's school adjustment and peer recognition as a reconciliatory process

Peer Relationships and School Adaptation: The Mediating Role of Self-regulation

Whether they are refugees or not, self-regulation skills of preschool children have a significant impact on peer relations and school adaptation. Self-regulation is the ability to postpone or suppress behaviors, inclinations, and desires, adhere to social rules, control and regulate emotions, focus on targeted stimuli, and maintain attention (Baumeister & Vohs, 2007). Self-regulation skills are the basis of many behaviors and qualities associated with successful school adaptation (Blair, 2002; Gülay Ogelman, Seçer, Gündođan, & Bademci, 2015; Şepitci Sarbaş & Akduman, 2019). Self-regulation (motivation and ability to control one's emotions and behavior in stressful situations) affects children's adaptation to school environments and learning abilities (Makila, Marecia, & Wasanga, 2017). Children's ability to regulate their feelings and behavior can be critical for successful and competent interactions with peers during this period (Ramani, Brownell, & Campbell, 2010). As young children become more independent and goal-oriented, their behavior and emotions are arranged more independently, and, thus, become more harmonious, flexible and socially appropriate in various contexts (Kochanska, Murray, & Harlan, 2000). Children with high self-regulation skills are more competent in academic success, social competence, school participation, school attendance, peer-social acceptance, and avoiding negative behaviors (Bayındır & Biber, 2017; Blair & Raver, 2015; Coelho, Cadima, Pinto, & Guimarães, 2019; Robson, Allen, & Howard, 2020; Whitesell, Mitchell, & Spicer, 2009). Studies involving young children determined that self-regulation skills had an impact on the ability to follow guidelines, consideration, collaborating with teachers and peers, adaptation to school, and academic skills (Eisenberg, Valiente, & Eggum, 2010; McClelland & Cameron, 2012). These competencies increase the capacity for school adaptation (Sautelle, Bowles, Hattie, & Arifin, 2015). Therefore, it is believed that self-regulation can play an intermediary role in the correlation between peer relations and school adaptation.

There are various studies on the intermediary role of self-regulation skills. These studies examined the intermediary role of self-regulation skills in the correlations between socioeconomic status and school adaptation (Miech, Essex, & Goldsmith, 2001), experiencing burnout and academic success (Duru, Duru, & Balkis, 2014), self-sufficiency, responsibility, and active procrastination (Taura, Abdullah, Roslan, & Omar, 2014), domestic violence and mental health (Perkins, Cortina, Smith-Darden, & Graham-Bermann, 2012), family context and social competence (Gündüz, Yagmurlu, & Harma, 2015), digital literacy and learning outcomes (Lee, 2015), protective factors and flexibility (Dias & Cadime, 2017), forms of parenting, behavioral problems, and preparedness for school (Erkan & Sop, 2018), basic psychological needs and psychological well-being (Nateghi & Nemattavousi, 2019), success goals and leisure-time physical activity (Erturan, McBride, & Agbuga, 2020). However, no research has been found to determine the mediating role of self-regulation between peer relations and school adjustment. Moreover, there are no studies that compare peer relations and school adaptation of refugee and non-refugee children. It is believed that analyzing the peer relations and school adaptation of refugee children and other children will be a reference for studies on the socialization of refugee children and determining the intermediary role of self-regulation can also be taken as a model in children's adaptation to school.

The present study first compares the school adaptation and peer relations of refugee and non-refugee children in the preschool period. After that, three different models were developed and tested to determine whether self-regulation skills had an intermediary role in the correlation between children's school adaptation and peer relations. These are as follows:

Model 1: Are peer relations a significant predictor of school adaptation skills?

Model 2: What is the level of change in correlational coefficients when self-regulation skills are included in the correlation between peer relations and school adaptation skills?

Model 3: Do self-regulation skills have a complete intermediary role between peer relations and school adaptation skills?

Method

Study Model

This is a descriptive and relational study examining whether children's peer relations and school adaptation vary according to their refugee status and aims to directly or indirectly examine the correlation between self-regulation skills and school adaptation (Karasar, 2011).

Universe and Sample

The population of the research consists of children aged 5-6, both refugees and non-refugees, who study in independent kindergartens in the city center of Erzincan. Purposive sampling method was used in the selection of the sample in the study. This sampling method is preferred when it is desired to work in one or more special cases that meet certain criteria or have certain characteristics (Koç Bařaran, 2017). In this context, the research was carried out with 120 children, 50 refugee (Afghan) children in the 5-6 age group and 70 non-refugee children, who were educated in kindergartens in five independent kindergartens in the city center of Erzincan. All of the refugee children live with their families in different neighborhoods, close to the children's schools. Families of refugee children earn their living with the support of the state and by working in temporary jobs. Families of refugee children have been residing in Turkey for a maximum of three years. Data on the demographic characteristics of the children included in the study are reported in Table 1.

Table 1. Demographic Characteristics of Children

	Refugee child (n=50)		Non-refugee child (n=70)		Total (n=120)	
	Sayı	%	Sayı	%	Sayı	%
Gender						
Girl	28	56	36	51,4	64	53,3
Male	22	44	34	48,6	56	46,7
Age						
Five	24	48	38	54,3	62	51,7
Six	26	52	32	45,7	58	48,3
Number of siblings						
Two or less	12	24	42	60	54	45
Three sbilings	22	44	18	25,7	30	25
Four or more	16	32	10	14,3	36	30

As seen in Table 1, 56% of refugee children are girls, while 51.4% of non-refugee children are girls. 52% of refugee children are six years old, and 54.3% of non-refugee children are five years old. On the other hand, 44% of refugee children have three siblings, and 54% of non-refugee children have two or fewer siblings.

Data Collection Tools

The data were collected with the Child Behavior Scale (CBS) by Ladd and Profile, The Short Form of the Teacher Rating Scale of School Adjustment, and Self-Regulation Scale.

The Child Behavior Scale by Ladd and Profile

The scale developed by Ladd and Profilet (1996) and adapted to Turkish by Gülay (2008) allows the teachers to evaluate the peer relations of preschool children. The scale contains six types of behavioral structure including Aggressive with Peers (7 items), Pro-social with Peers (10 items), Asocial with Peers (7 items), Excluded by Peers (9 items), Anxious-Fearful (7 items), and Hyperactive-Distractible (4 items), and consists of 44 items in total. The items on the scale are evaluated by the phrases "Does not apply", "Applies somewhat", "Definitely applies." The scale does not have an overall total score due to the structure of the subscales and each subscale is evaluated within itself. At the end of the adaptation study, the subscales' coefficients of internal consistency were .87 for the aggression subscale, .88 for the pro-social behavior, .84 for the asocial behavior, .78 for the anxious-fearful, .89 for the exclusion, .83 for the hyperactivity (Gülay, 2008). In this study, reliability coefficients were reported as .89 for the aggression, .92 for the pro-social behavior, .88 for the asocial behavior, .79 for the anxious-fearful, .92 for the exclusion, and .85 for the hyperactivity.

The Short Form of the Teacher Rating Scale of School Adjustment

The Short Form of the Teacher Rating Scale of School Adjustment scale developed by Birch and Ladd (1997) was reviewed and shortened by Betts and Rotenberg (2007). The scale helps teachers evaluate the school adaptation of children who are 3-7 years old. The Turkish adaptation of the scale was made by Bakkalođlu and Sucuođlu (2018). The Turkish version of the short form of the scale consists of 15 items including class participation (10 items) and positive orientation (5 items). It is a 3-item Likert-type scale with the answers "Definitely does not apply", "Applies", "Definitely applies." In the adaptation study of the scale, the Cronbach's alpha coefficients were found to be .94 for the subscale of class participation, .84 for the subscale of positive orientation, and .94 for the whole scale. In the present study, the Cronbach's alpha coefficients were found to be .93 for class participation, .87 for positive orientation, and .94 for the whole scale.

Self-regulation Skills Scale

The Self-regulation Skills Scale developed by Bayındır and Ural (2016) to help teachers evaluate the self-regulation skills of pre-school children in the 4-6 years old group consists of a total of 33 items with 21 items regarding regulation skills and 12 items regarding control skills. Regulatory skills include items about the skills to follow a process, action control skills, evaluation skills, and emotional and motivational regulation skills whereas control skills include items about self-control and attention control skills. It is a 5-item Likert-type scale with the answers "absolutely correct", "correct", "somewhat correct", "not correct" and "absolutely not correct." In the development study of the scale, the Cronbach's alpha coefficient was calculated as .96 for the sub-dimension of regulation skills, .91 for the sub-dimension of control skills, and .96 for the entire scale. When focusing on the sub-skills of self-regulation skills in this study, only the regulation skills sub-dimension of the scale was used. For this study, the Cronbach's alpha coefficient was calculated as .94 for the sub-dimension of regulation skills.

Data Collection

Before the collection of the data, the necessary permits were obtained from the Erzincan Provincial Directorate of National Education and Erzincan Binali Yıldırım University Humanitarian Research Ethics Committee (Protocol No: 04/06, Date: 31/03/2021). After obtaining the permits, consent was obtained from the parents of the children involved in the study. Afterward, the teachers of the children were interviewed and those who volunteered to participate in the study were handed out scale forms and asked to evaluate their students. After the teachers filled out the forms, the forms were collected.

Data Analysis

The data obtained in the study were transferred to the SPSS package program and prepared for the process of analysis. In this context, the values of skewness, kurtosis, and Mahalanobis's and Cook's distances were calculated for the extreme value analysis and it was decided that the data from 11 participants should be removed from the data set. Normality values were analyzed using the LISREL9 software and the data set showed normal and homogeneous distribution after the conversion. For the normality test, firstly the Kolmogorov Smirnov test ($p > .05$), then the Skewness and Kurtosis values were examined. It was observed that the Skewness value was between .322 and .208, and the Kurtosis value was between .952 and -.328. These values show that the data are normally distributed (Tabachnick & Fidell, 2013). After the parametric conditions were met, the independent sample t-test and structural equation analysis were performed to seek the answers to the questions of the study. The compliance values between the variables were examined in the validating measurement model, which is a prerequisite analysis for the structural equation analysis. After the measurement model, three different models were constructed and tested for the intermediary analysis. Model 1 tested whether peer relations directly predict school adaptation. In Model 2, the concept of self-regulation is added to the variables of peer relations and school adaptation and direct correlations between the variables of peer relations and school adaptation were tested in addition to testing of the indirect correlation processes through self-regulation. Model 3 tested the role of self-regulation as a complete intermediary between these variables. In the structural equation model, RFI, TLI, CFI, NFI, NNFI are used as model fit indices. For IFI, the referenced values are $\geq .90$ for an acceptable fit and $\geq .95$ for a perfect fit. For GFI and AGFI, the referenced values are $\geq .85$ for an acceptable fit and $\geq .90$ for a perfect fit. For RMR, REMSEA, and SRMR, the referenced values are $\leq .08$ for an acceptable fit and $\leq .50$ for a perfect fit (Tabachnick & Fidell, 2013).

Findings

This section includes the findings on whether peer relations and school adaptation vary according to the refugee statuses of children and the results of the analysis on the intermediary role of self-regulation skills.

The analyses on whether peer relations and school adaptation vary according to refugee status

The results of the t-test on whether children's peer relations vary according to their refugee status are shown in Table 2.

Table 2. The results of the t-test on whether children's peer relations vary according to their refugee status

Sub-dimensions	Status of being a refugee	n	\bar{X}	SS	Sd	t	p
Aggressive	refugee	50	3.4182	2.81492	118	2.134	.035
	non-refugee	70	2.1714	3.37498			
Pro-social	refugee	50	11.6497	4.82485	118	-3.876	.000
	non-refugee	70	14.9571	4.44755			
Asocial	refugee	50	4.6912	3.32061	118	3.422	.001
	non-refugee	70	2.5519	3.41471			
Exclusion	refugee	50	4.2848	3.20848	118	3.308	.001
	non-refugee	70	2.2202	3.48105			
Fear-anxiety	refugee	50	5.6063	3.10525	118	3.278	.001
	non-refugee	70	3.5857	3.47868			
Hyperactivity	refugee	50	2.5400	1.86493	118	.550	.583
	non-refugee	70	2.3143	2.43491			

Table 2 shows that the aggressive behavior towards peers, pro-social behavior towards peers, asocial behavior towards peers, exclusion by peers, and fear-anxiety towards peers significantly vary based on whether children are refugees or not. Accordingly, refugee children score significantly higher in variables of aggressive behavior towards peers, asocial behavior towards peers, exclusion by peers, and fear-anxiety towards peers than the children who are not refugees and their pro-social behaviors are significantly lower. Children's hyperactivity scores do not seem to vary depending on the status of being refugees.

The results of the t-test on whether children's school adaptation varies according to the status of being a refugee are shown in Table 3.

Table 3. The results of the t-test on whether children's school adaptation varies according to the status of being a refugee

Sub-dimensions	Status of being a refugee	n	\bar{X}	SS	Sd	t	p
Class participation	refugee	50	11.3600	5.57238	118	-2.735	.007
	non-refugee	70	13.9567	4.78615			
Positive orientation	refugee	50	5.9694	2.94670	118	-3.941	.000
	non-refugee	70	7.8143	2.18223			
Overall scores	refugee	50	17.3294	8.31836	118	-3.311	.001
	non-refugee	70	21.7709	6.37468			

According to Table 3, children's class participation, positive orientation, and overall scores significantly vary depending on the status of being a refugee. Thus, it can be said that class participation, positive orientation, and overall scores of non-refugee children are significantly higher than those who are refugees.

The analysis of the intermediary role of self-regulation skills

The first stage in structural equation models is the implementation of a confirmatory measurement model aimed at testing the model compatibility between variables. Therefore, three different implicit variables, including peer relations, school adaptation, and self-regulation, and explicit variables representing these implicit variables were defined and included in the model.

As a result of the confirmatory measurement model, it was determined the designed model was a good fit and its validity was confirmed ($\chi^2/sd= 2.74$, RMSEA: .066, RMR: .37, SRMR: .061, CFI: .95, IFI: .95, GFI: .94). The confirmatory measurement model is a prerequisite for structural equation models and after this prerequisite was achieved, the three different models designed within the scope of the study were tested using structural equation models with implicit variables.

Model 1: Are peer relations a significant predictor of school adaptation skills?

A structural equation model was used to test the model designed around the above question. In this context, two separate implicit variables were defined for the variables of peer relations and school adaptation. The findings of Model 2 are presented in Figure 1.

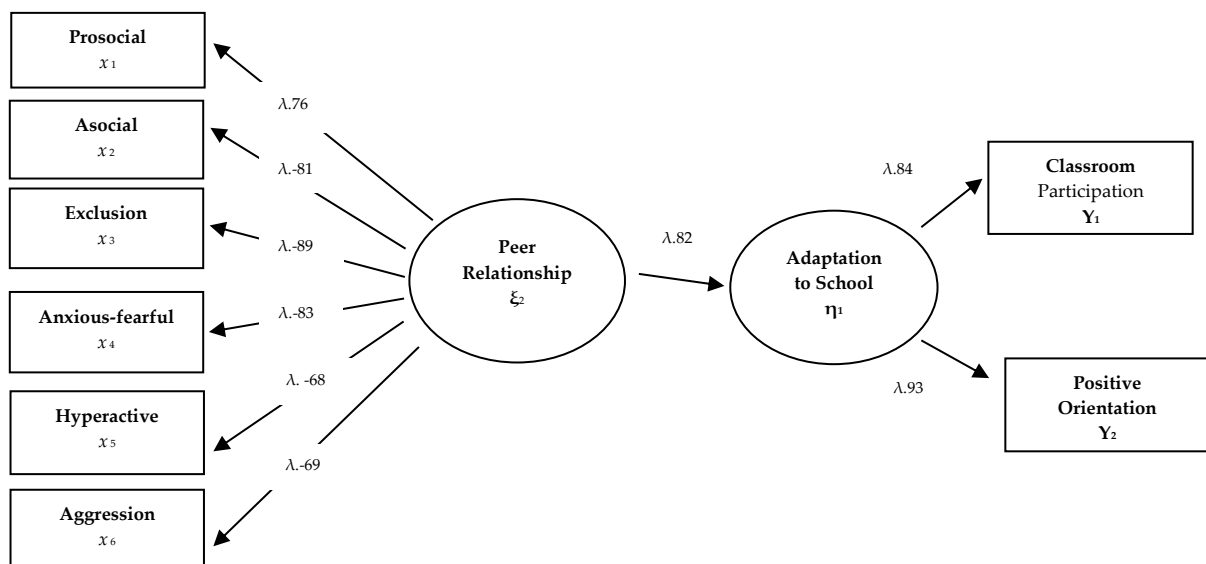


Figure 1. Standardized SEM results for Model 1

Figure 1 shows that peer relations have a positive predictor role in school adaptation skills ($\beta= .82$, $p<.01$) and it explains 67% of the total variance in school adaptation skills. The compatibility index values for Model 1 are ($\chi^2/sd = 2.31$, RMSEA: .071, RMR: .46, SRMR: .070, CFI: .96, IFI: .95) indicate that the model has high compatibility. That a high percentage of the total variance in school adaptation skills (67%) can be explained by a single variable suggests the likely presence of intermediary variables affecting the correlation coefficients between these variables. Thus, self-regulation skills that are considered to be a concept that can significantly affect children's daily lives, peer relations, and school adaptation skills were added to the predictor model and the correlation coefficients between the variables were reviewed.

Model 2: What is the level of variance in correlation coefficients if self-regulation skills are included in the correlation between peer relations and school adaptation skills?

In Model 2, which is designed to examine whether self-regulation skills play an intermediary role between school adaptation skills and peer relations, The variables, whose correlations have been examined in the previous model, are equipped in line with the concept of self-regulation.

In this case, direct correlations between the variables of peer relations and school adaptation as well as the indirect correlation processes through self-regulation skills were tested. In intermediary correlations, there are two basic criteria to determine whether a variable plays an intermediary role between other variables. These are whether the predictor coefficient between other variables becomes insignificant or significantly declines when the intermediary variable is added to the model (Tabachnick & Fidell, 2013). Therefore, when the self-regulation variable is included in the model, significant variance in the correlation coefficient between peer relations and school adaptation skills is expected. The model tested and its findings are presented in Figure 2.

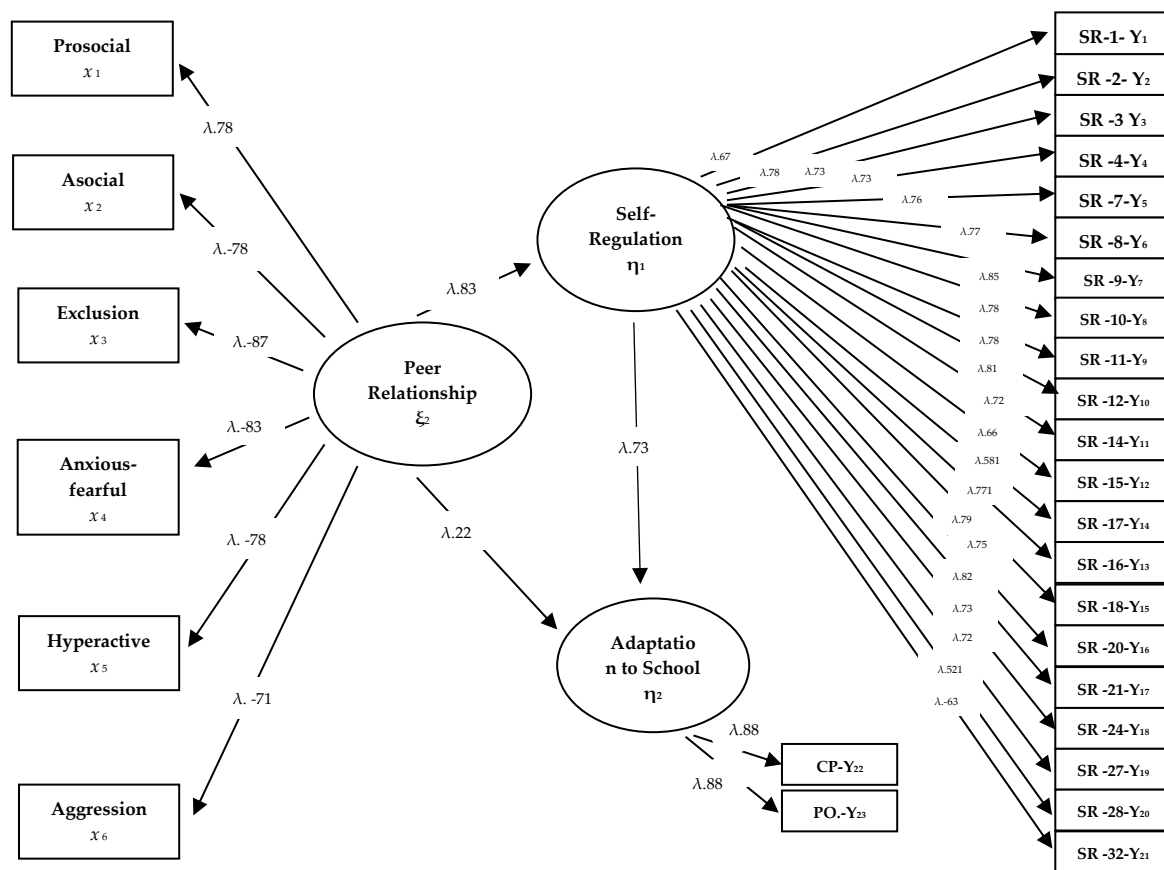


Figure 2. Standardized SEM results for Model 2

Figure 2 shows that the model has high compatibility values after self-regulation skills are included in the model ($\chi^2/df = 2.38$, RMSEA: .068, RMR: .54, SRMR: .062, CF: .97, IFI: .96, GFI: .93). An examination of the correlation coefficients between variables show that peer relations have a positive and significant impact on school adaptation skills ($\beta = .22$, $p < .01$, 5%), peer relations have a positive and significant impact on self-regulation skills ($\beta = .83$, $p < .01$, 69%), and self-regulation skills have a positive and significant impact on school adaptation skills ($\beta = .73$, $p < .01$, 53%). However, it is noteworthy that the correlation coefficient between peer relations and school adaptation skills in Model 1 went from 67% to 5% with the inclusion of self-regulation skills in Model 2. In light of the obvious decline in the correlation coefficients between the two variables, it can be concluded that self-regulation skills have a complete intermediary role between these two variables. Thus, direct predictor paths from the variable of peer relations to the variable of school adaptation were removed from the model and the model was retested as a complete intermediary model.

Model 3: Do self-regulation skills have a complete intermediary role between peer relations and school adaptation skills?

Designed as a complete intermediary model, Model 3 foresees that self-regulation skills play an intermediary role in the correlation between peer relations and school adaptation skills. In this context, it is assumed that the impact of peer relations on school adaptation skills occurs indirectly through the self-regulation variable. The findings of the complete intermediary model are presented in Figure 3.

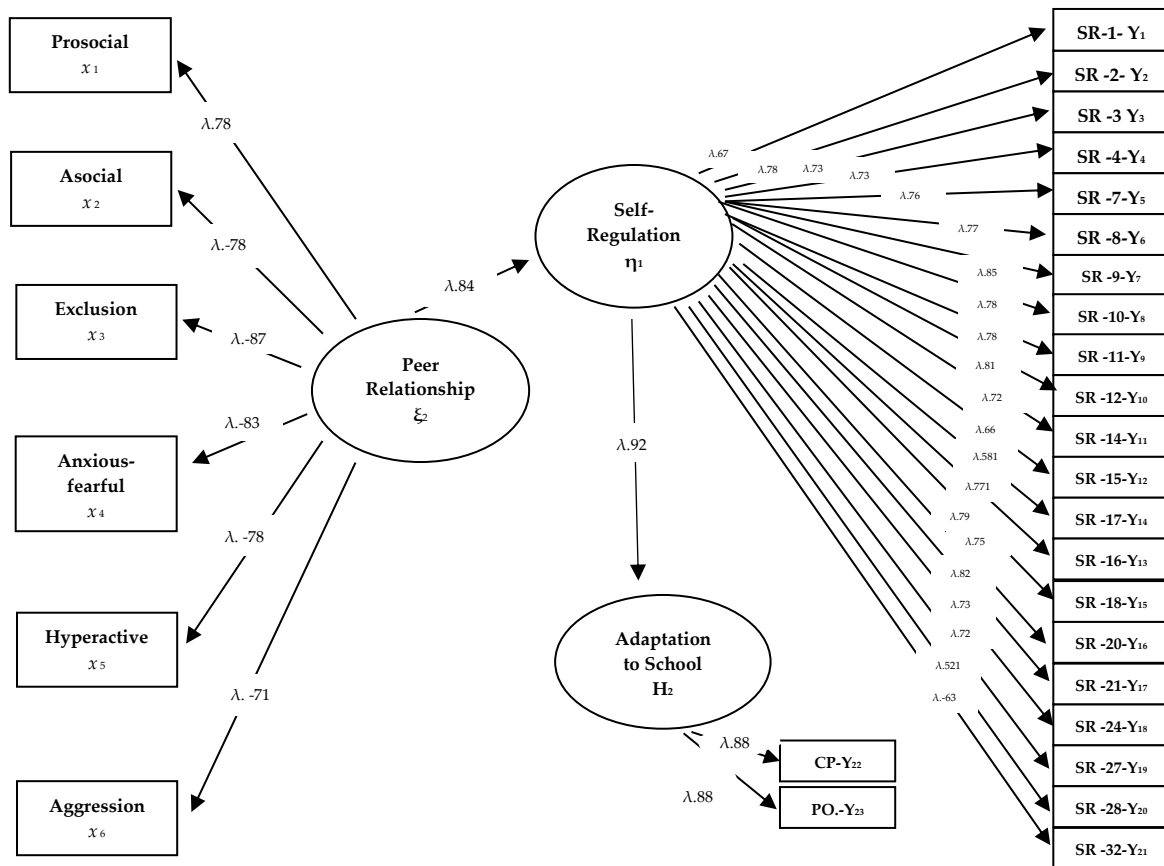


Figure 3. Standardized SEM results for Model 3

Figure 3 demonstrates the complete intermediary role of self-regulation skills in the correlation between peer relations and school adaptation skills. Accordingly, peer relations positively predict self-regulation skills ($\beta = .84, p < .01, 70\%$) and self-regulation skills positively predict school adaptation skills ($\beta = .92, p < .01, 85\%$). The compatibility index values for Model 3 are as follows: $X^2/sd = 1.87$, RMSEA: .061, RMR: .44, SRMR: .052, CFI: .98, IFI: .97, GFI: .95. Therefore, it is safe to say that the complete intermediary model designed for the study was confirmed. Moreover, the removal of some of the paths that were present in the previous models from Model 3 causes significant variance in the predictor coefficients. For example, the removal of the direct path between peer relations and school adaptation caused a minor increase in the correlation between peer relations and self-regulation skills and a significant increase in the correlation between self-regulation skills and school adaptation skills.

The variance observed in the predictor coefficients in Model 1, Model 2, and Model 3 indicates that the analysis techniques that were applied yielded highly effective results especially in the prevention of the type II error. In other words, even though a high predictor coefficient of 67% was calculated between peer relations and school adaptation in Model 1, this ratio significantly declines with the inclusion of the intermediary variable into the model. This decline is very important in demonstrating that the type II error occurs in direct correlations and intermediary models are extremely effective in preventing the type II error and analyzing actual correlation networks between variables. Considering that type I and II errors should be eliminated as much as possible in order to ensure both

internal validity and external validity of the study results, the results achieved in this study are expected to provide an important perspective on the studies that focus on the correlations between children's social relations, academic processes, and individual traits.

Discussions, Conclusions, And Recommendations

The fact that refugee children experience negative life events before, during, and after migration makes it difficult for them to adapt to their new environments. Schooling is an essential tool in the socialization of refugee children. Since the school is the first social environment of preschool children outside of their families, ensuring their adaptation to school is an important step in socialization efforts. It can be argued that their peer relations and self-regulation skills can be effective in ensuring their adaptation to the school. From this perspective, a comparative examination of peer relations and school adaptations of children who are refugees or non-refugees and the testing of the intermediary role of self-regulation skills in the correlation between peer relations and school adaptation by including refugee children into the study group would provide valuable resources especially for the efforts that promote self-regulation in practices aiming to increase school adaptation in refugee children.

Peer Relations, School Adaptation and Refugee Factor

The present study examining whether children's peer relations and school adaptation vary significantly based on their refugee status finds that aggressive behaviors towards peers, asocial behaviors towards peers, exclusion by peers, and fearful-anxious behaviors towards peers are significantly higher in refugee children than non-refugee children whereas their scores in pro-social behaviors were significantly lower. On the other hand, the class participation, positive orientation, and overall scores of non-refugee children were significantly higher than refugee children. Based on these results, it can be concluded that both peer relations and school adaptation of non-refugee children to school are higher than refugee children. Refugee children encounter various stressors in places where they immigrate. Children who immigrate to unfamiliar places where they have not lived before may have problems in establishing relationships with other children due to language barriers and different cultural structures. The social life restriction of younger children, especially in preschool age, makes these problems even more eminent for them. Factors affecting peer relations and school adaptation in refugee children are not limited to the ones mentioned above and their peer relations and school adaptation can be impacted by many other factors. In their study based on preschool children, Yanık Özger and Akansel (2019) revealed that the language, popular children, and the attitudes of Turkish parents were effective in peer relations of refugee children. Refugee children starting preschool are expected to adapt to a school where they can't speak the language on top of the anxiety of being away from their parents. School adaptation processes are not only impacted by the attitudes of non-refugee children and families. It can be argued that the negative attitudes of school administrators and teachers towards refugee children who study in public schools also have an impact. Mercan Uzun and Bütün (2016) found out that refugee children in preschool are ostracized in the classroom, non-refugee families are not happy about refugee children being educated in the same classroom with their children, and teachers don't welcome these children like their own students. In a study by Sakız (2016), school administrators expressed that refugee children disrupt the school's atmosphere. The language barrier, prejudices, and discrimination against refugee children make peer relations and school adaptation a challenge for them. In their study on children aged 5-17, Lau et al. (2018) found that refugee children faced more difficulties in peer relations and school adaptation than native Austrian children. Almqvist and Broberg (1999) have found that being a refugee and being susceptible to violence, to parental bias, and to problems of adjustment are strictly related at preschool age.

Relationships Between Peer Relationships and School Adjustment

The present study found that peer relations are a predictor of school adaptation. This finding shows that peer relations are an important factor in ensuring children's adaptation to school. Children who establish healthy relationships with peers can be more competent in self-expression, cooperation, taking responsibility, and exhibiting acceptable behavior. These competencies enable children to develop healthier relationships with teachers and peers in the school environment. These children enjoy being in school and can adapt better to the school environment. Positive peer relations enhance children's sense of belonging to a group and improve school adaptation (Betts, Rotenberg, & Trueman, 2009; Gülay, 2011, Wentzel, Russell, & Baker, 2014; Kahraman, 2018). Children with strong peer relationships are able to communicate better with their peers, take responsibility, and manage conflicts better. As a result, school adjustment skills may be at a higher level. In their study with preschool children, Gülay Ogelman and Erten (2013) found that fearfulness-anxiety, aggression, asocial behaviors, hyperactivity, and social status predict school adaptation. This result reveals the effect of peer factor on preschool children's adjustment to school. In another study with preschool children, Quinn and Hennessy (2010) revealed in their study on preschool children that the transition process from preschool to primary school is easier for children with strong peer relationships and strong peer relationships. Similarly, Polat and Akış Akyol (2016) described a negative correlation between readiness for school and the sub-dimensions of aggression towards peers, asocial behaviors, fearful-anxious behavior, exclusion by peers, and hyperactivity. In another study, children with better peer relations were found to have a high level of academic success, psychological well-being, and positive attitudes towards school (Newman Kingery, Erdley, & Marshall, 2011). School is the most important social environment for young children after the family. Children spend time with their peers in this environment, are affected by each other's behaviors, and model each other. Children with strong peer relationships prefer to exhibit more desirable behaviors due to the nature of these relationships. As a result of this, pre-children develop their skills of class participation and positive orientation, which are indicators of school adjustment, and can adapt better.

Peer Relationships and School Adaptation: The Mediating Role of Self-regulation

Another finding of the present study shows that self-regulation skills play a complete intermediary role in the correlation between peer relations and school adaptation of children in preschool. Accordingly, it can be concluded that peer relations positively predict self-regulation skills and self-regulation skills positively predict school adaptation. In line with this finding, it is safe to say that preschool children will adapt better to school when their self-regulation skills are high.

Children who build healthy relationships with their peers can acquire skills in how to shape their behavior thanks to their established relationships. By interacting with their peers, children figure out which behaviors are acceptable. Behavioral problems may occur when they fail to establish healthy peer relations. In their study with preschool children, Pazarbaşı and Cantez (2019) children's self-regulation skills increased as their pro-social behavior scores increased whereas their self-regulation skills decreased as their scores in aggression, hyperactivity, and exclusion by peers increased. This result shows the effect of orientations in peer relations on self-regulation skills. It was also found that children who experienced peer rejection had difficulty making decisions on risky behaviors (King, McLaughlin, Silk, & Monahan, 2018). However, children who build healthy relationships with their peers have stronger social-emotional ties with their peers, so they can better regulate their behavior and emotions. As a matter of fact, Totan (2014) revealed a correlation between children's needs for social-emotional learning and their self-regulation skills. Moreover, Lynn, Carroll, Houghton, and Cobham (2013) found that peer relations have a significant correlation with emotion regulation skills in their study. Lin, Chen, Justice, and Sawyer (2019) proved that self-regulation has a positive effect on children's peer interactions within the school. It is also argued that externalizing behaviors decrease in children with high self-regulation skills and the game interactions between peers are strengthened (Lonigan et al., 2017). This result reveals the mutual influence of peer relations and self-regulation. Children with strong peer

relationships have more social-emotional interactions with their peers. These experiences can enable them to recognize different social-emotional skills and manage social-emotional processes. Thus, they can develop their self-regulation skills.

Self-regulation skills predict school adaptation. In their studies with preschool children, McIntyre et al. (2006), Blair and Diamond (2008), and Şepitci Sarıbaş and Akduman (2019) found a positive correlation between their self-regulation skills and school adaptation. Being able to regulate own behaviors in different events and situations enables children to establish healthy relations and adopt appropriate behavioral norms in both the family and the school. Children who can regulate their behaviors in school adapt to their environment sooner and better. Bayındır and Biber (2017) found a positive correlation between self-regulation skills and readiness for school in their study with preschool children. It can be argued that children with poor self-regulation skills have more difficulty in adapting to school. Tozduman Yaralı and Güngör Aytar (2017) found that preschool children who lack self-regulation skills experience difficulties in adhering to the rules and being a part of groups. Furthermore, children with poor self-regulation skills have difficulty using appropriate strategies to initiate interaction with their peers (Fabes, Martin, Hanish, Anders, & Madden-Derdich, 2003). Based on these results, it can be said that self-regulation has a significant effect on school adjustment. Since self-regulation is directly related to the ability to obey rules and control emotions (Baumeister & Vohs, 2007), it shapes many behaviors related to school adjustment (Şepitci Sarıbaş & Akduman, 2019). Children with developed self-regulation skills are more sensitive to possible emotional processes and changes in rules and can adapt more easily when different events are experienced. These competencies make it easier for them to adapt to school. Studies support this view. For example, in their study with children, Makila et al. (2017) found that self-regulation has an impact on school adaptation and school resilience. Whitebread and Basilio (2012) emphasize that preschool children's self-regulation skills have an impact on their emotion regulation skills and their capabilities to follow instructions, to focus, and to collaborate with teachers and peers, and therefore, it is a decisive factor on school adaptation. This result reveals the necessity of including activities and practices aimed at improving self-regulation skills instead of waiting for children to adapt to school in the natural process.

Recommendations

According to the results of the research, since refugee children have lower skills in peer relations and school adjustment than non-refugee children, refugee children can be trained in skills that enable the development of peer relations such as expressing their feelings and self, sharing, taking responsibility, and cooperation. Through educational programs, teachers' skills to support classroom management and integration of children (communication skills, empathy skills, etc.) should be developed in situations where refugee and non-refugee children are educated together. Educational and psychosocial support should be given to refugee families to ensure the integration of their children through schools or non-governmental organizations. Since evidence-based strategies to encourage peer relations between different groups are limited in preschool education, where the development of social and emotional competencies is a learning priority (Hanish et al., 2021), researchers can conduct experimental studies to support these skills of children with experimental studies. Educators and researchers can increase children's adaptation to school by implementing educational programs to improve their self-regulation skills. Researchers can conduct studies to determine the factors that affect refugee children's peer relationships and school adjustment. While emphasizing the importance of self-regulation skills to support school adaptation, it is recommended to ensure the participation of parents and society in supporting school adaptation. The use of longitudinal design in future research will help resolve causal links between peer relationships and school adjustment regarding the effectiveness of self-regulation skills and better explore the direction of the effects.

Limitations

There are some limitations in this study. The study has a cross-sectional design. Relational findings were obtained in the study and causality was limited. In order to focus on the regulation skills of the self-regulation scale, only the regulation dimension was considered and control skills were excluded from the study. Not being evaluated in terms of control skills can be considered as a limitation. In addition, all the information was obtained from the teachers, and no self-report was provided by the children. Relying solely on teachers' reports revealed some concerns between the observed relationships. Teachers' prejudices towards refugee children may cause information bias. Despite these limitations, the study sheds light on the link between peer relationships and school adjustment and reveals an important link in the mediating role of self-regulation.

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