

Summary

Examination of the Effects Negative Reactivity and Maternal Acceptance-Rejection on Disruptive Behaviors within the scope of Differential Susceptibility Model among Adolescents

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Violence and disruptive behaviors among adolescents have increased significantly in last decades. Because these problems lead to individual, familial and societal problems, it is seen that studies about this issue has been increased (Barkley, 2002; Maughan, Christiansen, Jenson, Olympia & Clark, 2005). Disruptive behavior disorder is generally categorized as Oppositional Defiant Disorder (ODD), Attention-Deficit Hyperactivity Disorder (ADHD) and Conduct Disorder (CD) in DSM-IV. However, ADHD is excluded from disruptive behavior disorders in DSM-V. Disruptive behaviors are also called externalizing behavior problems which characterized by noncompliance, aggression, destructiveness, attention problems, impulsivity, hyperactivity and delinquent behaviors (Achenbach & Edelbrock, 1978). Disruptive behaviors are very common and 5% of children and adolescents aged between 6 and 18 meet the criteria at some point in their lives. When the literature was examined, temperament and parental practices are two important predictors for disruptive behaviors.

Innate individual differences have an important effect on the development of disruptive behaviors, which are defined as temperament (Putnam, Sanson & Rothbart, 2002). According to Bell (1968), temperament can be defined as child's reactions to social interaction with parents, ability to control emotions and ability to show pleasure and discomfort to parents. Another definition of temperament is biologically rooted individual differences in human behaviors (Rothbart & Bates, 1998). Temperament studies are based on New York Longitudinal Study in which children were followed through their lives from infancy to early adulthood conducted by Thomas et al. (1963). In this research, nine temperament traits were identified in children: activity level, regularity of sleeping and eating patterns, initial reaction, adaptability, intensity of emotion, mood, distractibility,

persistence and attention span, and sensory sensitivity (as cited in Thomas et. al, Putman, Sanson & Rothbart, 2002). Based on these temperament traits, Chess and Thomas (1977) behaviorally categorized them into three groups: easy, difficult, and slow-to-warm-up (as cited in Santrock, 2006). It can be practical to classify children according to their temperament types; however, at the same time, it can be problematic because of the negative perception. Therefore, instead of such classification, investigation of subdimensions of temperament has been suggested by Rothbart and Bates (1998). According to this approach, temperament consists of emotionality, negative emotionality and effortful control (Gartstein & Rothbart, 2003). Longitudinal Studies have shown that temperament characteristics, especially negative emotionality in infancy, predicts highly disruptive behaviors in adolescence (Bates et al., 1991; Caspi et al., 1995; Eisenberg et al., 1994; Kochanska et al., 2015; Pitzer et al., 2009; Rhee et al., 2007; Williams et al., 2009).

Relationship between parents and children is another important predictor for the causes and developments for disruptive behaviors. Parental Acceptance and Rejection Theory (PART) tries to explain the effects of parents on children in detail. According to PART, psychological adjustment of children depends on experiences of parental acceptance-rejection that affect the quality of parent-child interaction and the satisfaction of child's needs (Rohner, Khaleque & Cournoyer, 2005). According to this theory, parental acceptance and rejection are the basis for the "warmth" dimension of parenting on which all humans can be placed somewhere on this dimension. Parental acceptance placed on the one end of a continuum which refers to physical, behavioral and symbolic behaviors from parents such as warmth, attention, affection, care, comfort, concern, nurturance, support. On the other side, parental rejection which placed on the

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other end of a continuum refers to the absence or significant withdrawal of acceptance behaviors and feeling and presence of a variety of physically and psychologically hurtful behaviors and affects (Rohner et al., 2005). Ali, Khaleque and Rohner (2015) conducted a cross-cultural meta-analysis based on 220 studies. They found that parental acceptance and rejection significantly correlated with the psychological adjustment of both children and adults across all cultures; and parental rejection especially maternal rejection strongly predicts depression, internalizing and externalizing problems without gender differences and ethnicity. Recent studies from different countries including Turkey also have shown that parental rejection is strongly related to externalizing problems, aggression and delinquent behaviors (Buschgens et al., 2010; Direktör & Çakıcı, 2012; Meesters et al., 1995; Miranda et al., 2016; Muris, 2003; Ruchkin et al., 1998; Sarıtaş, 2007; Yahav, 2006).

Various studies have examined the temperament and parental styles separately as predictors for externalizing behaviors. However, more model testing studies that focuses on the interaction of temperament and parental styles for explaining the externalizing behaviors are needed. Interactions between individual characteristics such as temperament and the environment have been primarily studied by the diathesis–stress model. According to this model, vulnerable and resilient individuals are disproportionately affected environmental stressors depending on their vulnerability factor. In other words, vulnerable individuals exposed to negative environmental factors might experience worse outcomes compared to resilient individuals. However, they might develop less negative outcomes in the absence of adversity (Monroe & Simons, 1991). Differential Susceptibility Model, which is based on the evolutionary perspective, explains this interaction with a new perspective. According to this theory, “adverse rearing environments exert negative effects particularly on children presumed “vulnerable” for temperamental or genetic reasons may actually reflect something else: heightened susceptibility to the negative effects of risky environments and to the beneficial effects of supportive environments” (Belsky, Bakermans-Kranenburg & Van IJzendoorn, 2007). Belsky (2005) stated that children with difficult temperament are more susceptible to environmental situation especially when the parental effect is in a better and worse manner. In other words, difficult temperament could be protective factor instead of risk factor when the environmental conditions are positive (Yağmurlu & Kodalak, 2010). Most of the research about Differential Susceptibility are based on longitudinal studies. From these studies, it was found that children with difficult temperament are more susceptible to parental practices and they have less

disruptive problems when their parents show warmth and meet their emotional needs (Belsky et al., 1998; Kochanska & Kim, 2013; Pitzer et al., 2011; Rioux et al., 2016; Van der Voort et al., 2013). However, Differential Susceptibility Model was not supported in cross-sectional studies (Carlo et al., 1998; Padilla-Walker & Nelson, 2010; Windle, 1992;).

In the literature, since there are both limited studies in Turkey related to Differential Susceptibility and no consistency in the literature generally, it is important to examine relationship between parental acceptance-rejection and temperament on disruptive behaviors among adolescents to contribute new researches. Therefore, the aim of the present study was to examine the moderator roles of negative reactivity, which is dimension of difficult temperament, on maternal acceptance-rejection and disruptive behaviors within the scope of Differential Susceptibility Model.

Method

Participants

This study consisted of 400 high school students (222 males, 178 females) from 9th and 10th grade and adolescents’ age range was 15-17. Nine different high schools were selected from Aydın, Turkey and categorized into 3 different groups according to the socio-economic status of children (low, mid, high). In addition, mothers of 400 students participated in this study. Mothers of adolescents age range is between 30-70. 61 % of them graduated from primary school, 21% of them graduated from high school and 19% of them graduated from university. Strength and Difficulties Questionnaire and Parental Acceptance and Rejection Questionnaire was administered to the students; School Age Temperament Inventory was filled by their mothers.

Measures

Strength and Difficulties Questionnaire (SDQ). SDQ is brief behavioural screening questionnaire developed by Goodman (1997) to measure positive and negative behaviors. SDQ includes 25 item on a 3-point Likert type scale and 5 subtype including Emotional Symptoms, Conduct Problems, Hyperactivity-Inattention, Peer Problems, and Prosocial Behavior. Higher scores in subscales and total scores can be used and shows higher problematic behaviors. Turkish version of the questionnaire was adapted by Güvenir et al. (2008). The Cronbach alpha values of reliability were between .37 -.84. and it was reported that overall SDQ was reliable and valid for Turkish.

School-Age Temperament Inventory (SATI). SATI was developed by McClowry (1995) to assess ad-

olescent temperament characteristics by their mother or father. It includes 38 items on the 5-point Likert scale and four dimensions, which are negative reactivity, task persistence, approach/withdrawal and activity. Dimension scores can be used separately. Turkish version of the scale was adapted by Eremsoy et al. (2008). The Cronbach alpha coefficient of dimensions was found between .79 and .86.

Parental Acceptance and Rejection Questionnaire (PARQ). Child form of PARQ was developed by Rohner et al. (1978) to evaluate children perception of their parents' rejection and acceptance. It includes 60 items that participants rate from 1 (not true at all) to 4 (completely true) and 4 subscales: warmth, aggression, neglect and undifferentiated reject. Subscale scores of PARQ can be measured and also higher scores indicates perception of higher rejection. Turkish version of PARQ was adapted by Varan (2003). The Cronbach alpha coefficient was found to between .82 and .92.

Procedure

After receiving approval from the Adnan Menderes University Ethics Committee, high schools were selected according to the socio-economic status and instruments were applied to 9th and 10th grade high school students who voluntarily attended. Students completed the instruments almost in 40 minutes in a class setting. Students completed Strength and Difficulties Questionnaire and Parental Acceptance and Rejection Questionnaire. Students who wanted to continue this study, were delivered School-Age Temperament Inventory by sealed tender for their mother to complete. Instruments were delivered 960 students and 400 mothers sent back the sealed tender. Moderator analysis was used for testing moderator role of negative reactivity, which is dimension of SATI, on parental acceptance-rejection and disruptive behaviors through a model suggested by PROCESS Macro (Hayes, 2013).

Results

Correlations between dimensions of SDQ, PARQ and SATI scores were calculated. It was found that dimensions of questionnaires are significantly correlated with each other. Especially for moderator analysis, total rejection scores of PARQ and warmth dimension of PARQ, negative reactivity dimension of SATI and total scores of SDQ are significantly correlated.

Moderator role of negative reactivity was tested separately for maternal acceptance and rejection through PROCESS Macro (Hayes, 2013). Negative reactivity was categorized into 2 groups as high negative reactivity and low negative reactivity. In the first moderator anal-

ysis for parental rejection scores, SDQ total score was entered as a dependent variable, parental rejection and negative reactivity was entered to analysis as independent variables. According to the results, this model was significant, $F(3, 396) = 49.34, p < .001, R^2 = .50$. Results of main effects showed that negative reactivity ($b = 2.37, t(396) = 4.77, p < .001$) and parental rejection ($b = .14, t(396) = 9.59, p < .001$) significantly predicted the disruptive behaviors. Interaction of maternal rejection and negative reactivity is also significant ($b = -.07, t(396) = -2.43, p = .015$). It was used to Johnson-Neyman technique to show size of moderator effects of negative reactivity and visualize interaction effect. These results showed that adolescents with high negative reactivity were more affected parental rejection and they showed more disruptive behaviors compared to adolescents with low negative reactivity.

In the second moderator analysis for parental warmth scores, SDQ total score was entered as a dependent variable, parental warmth and negative reactivity was entered to analysis as independent variables. According to the results, this model was significant, ($F(3, 396) = 34.08, p < .001, R^2 = .02$). Results of main effects showed that negative reactivity ($b = 2.84, t(396) = 5.51, p < .001$) and parental warmth ($b = -.19, t(396) = -7.13, p < .001$) significantly predicted the disruptive behaviors. However, interaction of maternal warmth and negative reactivity is not significant ($b = .05, t(396) = 1.06, p > .05$). Because interaction effect was not significant, Johnson-Neyman technique was not used. According to this result, negative reactivity was not found to have a moderator role on the relationship between parental warmth and disruptive behaviors.

Discussion

The aim of the present study was to examine associations between temperamental characteristics, parental acceptance and rejection and disruptive behaviors in adolescents and moderator roles of negative reactivity which is dimension of difficult temperament on parental acceptance-rejection and disruptive behaviors in the scope of Differential Susceptibility Model.

The results showed that negative reactivity was highly correlated with disruptive behaviors parallel with literature (Sentse et al., 2009, Rettew et al., 2004; Murris & Ollendick 2005). This result can be explained in terms of emotion regulation problems (Calkins, 1994), stress intolerance of adolescents and high reactivity social stimulus because of biological predisposition (Bates et al., 1991)

Another finding is that parental rejection was highly correlated with disruptive behaviors. This results

are also parallel with the literature (Akse et al., 2004; Buschgens et al., 2010; Muris et al., 2003; Miranda et al., 2016; Rohner & Britner, 2002). According to the parental acceptance and rejection theory, interpersonal relations cause so many psychological problems such as externalizing and internalizing. Mental representations and perception of the world are affected by parent-child relationships (Rohner & Britner, 2002). Parental practices and temperament predicted externalizing behaviors separately; however, examining these interactions is important for explaining developmental outcomes on children. Differential Susceptibility Model, which is based on an evolutionary perspective, tries to explain this interaction with a new perspective. In this research, a moderator role of negative reactivity was found on parental rejection and disruptive behaviors but not for parental acceptance. In terms of parental rejection, findings are parallel with literature (Belsky et al., 1998; Mesman et al., 2009; Sentse et al., 2010). However, a moderator role of negative reactivity was not found for parental warmth and disruptive behavior. According to these results, the Differential Susceptibility Model was not supported in this research. There can be some explanations why the Differential Susceptibility Model was not supported. Parallel with this research, a systematic review of Rioux, Castellanos-Ryan, Parent and Regun (2016) indicated that while longitudinal studies supported the Differential Susceptibility Model, cross-sectional studies supported the diathesis-stress model. One of the explanations for these results might be due to measurement problems. Another explanation could be that this study was cross-sectional, parallel with literature. Longitudinal research provides deeper information about why parental warmth does not affect children with negative temperament on disruptive behaviors. Moreover, the adolescence period is a complicated period and apart from parents, different socialization processes can affect adolescents' behaviors. Therefore, collecting data from different sources can be useful to understand this relationship.

To sum up, although this research did not support the Differential Susceptibility Model, it can be said that negative reactivity is a vulnerability factor with parental attitude for explaining disruptive behaviors; therefore, the interaction of parental attitude and negative reactivity is significant to understand disruptive behaviors in children and adolescents.