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From Positive Childhood Experiences to Psychological Adjustment: Serial Mediating Roles of Family Communication and Difficulties in Emotion Regulation

Adnan ÖMERUSTAOĞLU

aomerustaoglu@biruni.edu.tr

Biruni University https://orcid.org/0000-0002-9082-4235

Tuba Kalay Usta

Biruni University https://orcid.org/0000-0003-3628-8432

Ahsen Filiz

Biruni University https://orcid.org/0000-0002-8886-5572

Ayşin Kaplan Sayı

Biruni University https://orcid.org/0000-0002-8186-4593

Gizem Mutlu Gülbak

Biruni University https://orcid.org/0000-0002-4248-8003

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Abstract

Psychological adjustment is one of the fundamental indicators that determine individuals' mental health in adulthood. In order to protect and support individuals' psychological well-being, it is of great importance to examine the risk and protective factors associated with psychological adjustment. In this context, individuals' past experiences, particularly those related to childhood, may play a determining role in psychological adjustment. This study aims to examine the serial mediating roles of family communication and difficulties in emotion regulation in the relationship between positive childhood experiences and psychological adjustment. The sample of the study consists of 577 participants (344 females and 233 males) aged between 18 and 68 years (M_{age} = 29.26, SD = 8.61).The analyses of the study were conducted using structural equation modeling. The results of the study revealed that family communication and difficulties in emotion regulation play a serial mediating role in the relationship between positive childhood experiences and psychological adjustment. The findings indicate that positive childhood experiences are an important protective factor for psychological adjustment, whereas poor family communication and increased difficulties in emotion regulation may be considered risk factors that negatively influence psychological adjustment. All these results suggest that psychoeducational interventions aimed at promoting positive childhood experiences, strengthening healthy family communication, and improving emotion regulation skills may contribute to enhancing psychological adjustment.

1. Introduction

Throughout human history, one of the most fundamental determinants shaping individuals' development has been early life experiences. Experiences during childhood can exert psychological, social, and emotional effects that extend across the entire lifespan. This indicates that early experiences occupy a central position in understanding individuals' developmental trajectories. In this context, positive childhood experiences are defined as the consistent exposure to supportive, safe, and nurturing conditions during childhood [1]. In the literature, positive childhood experiences are conceptualized as a multidimensional construct encompassing warm and responsive relationships with caregivers, a sense of a secure environment, feelings of belonging, and the provision of social support, and are characterized by individuals' overall satisfaction with their childhood, perceptions of receiving adequate care and affection, beliefs that their psychological needs were met, and the perception of having grown up in a safe environment [2]. All these dimensions contribute to individuals' cognitive, behavioral, and emotional development.

In recent years, positive childhood experiences have been increasingly studied and are considered an important factor that supports lifelong development in individuals [3, 4]. Individuals who have such experiences are reported to exhibit higher levels of social skills in adulthood, receive peer support, and demonstrate greater sensitivity toward social issues [5]. In addition, recent studies have revealed that positive childhood experiences have strong effects on mental health and overall well-being in adulthood [6, 7]. These studies indicate that having positive childhood experiences serves as a significant

protective factor that enhances life satisfaction and supports the maintenance of positive mental health. Huang et al. also reported that a lack of positive childhood experiences is an important determinant of individuals' overall mental health [8]. Furthermore, some studies provide evidence that positive childhood experiences support general functioning in individuals [9–11]. Taken together, these findings demonstrate that positive childhood experiences are a strong protective factor that supports individuals' lifelong psychological adjustment and well-being.

In this context, psychological adjustment can be considered an important construct that reflects individuals' capacity to cope with demands encountered across different domains of life and to maintain overall functioning. Considering that early experiences may be associated with domains such as emotion regulation and interpersonal relationships, it is plausible to conceptualize positive childhood experiences as a construct related to psychological adjustment. From this perspective, a review of the literature indicates that studies directly examining the relationship between positive childhood experiences and psychological adjustment are quite limited. The study conducted by Jannetti et al. stands out as one of the few studies investigating this relationship [12]. In that study, positive childhood experiences were reported to be a factor influencing psychological adjustment. This limited evidence suggests that the effects of positive childhood experiences on psychological adjustment should be examined more comprehensively, taking into account the potential role of additional variables.

Psychological adjustment is defined as an important construct reflecting individuals' capacity to adapt to changes and new situations encountered in life [13]. This concept plays a significant role in individuals' ability to cope with challenges in daily life and to maintain functional living, and is therefore considered essential for overall mental health. In the study by Cruz et al. psychological adjustment is also described as individuals' ability to adapt to life conditions, which can be interpreted as the capacity to respond to changes in life [14]. A substantial body of research in the literature demonstrates that psychological adjustment is closely related to mental health. For instance, Bantjes and Kagee reported that psychological adjustment is one of the protective factors supporting mental health [15]. Similarly, Yıldırım and Solmaz indicated that higher levels of psychological adjustment facilitate coping with life difficulties, thereby contributing to the maintenance of mental health [16]. In line with these findings, Yıldırım and Arslan demonstrated that psychological adjustment enhances life satisfaction, while Chambers et al. found that it is associated with greater happiness [17, 18]. Taken together, these findings suggest that psychological adjustment is one of the key constructs contributing to the preservation of individuals' psychological well-being.

Within this framework, early life experiences that influence individuals' lifelong developmental processes may also be related to psychological adjustment. When this relationship is considered, family communication and difficulties in emotion regulation may play important roles in the link between positive childhood experiences and psychological adjustment. In addition, examining the predictive power of different psychological variables in explaining psychological adjustment appears to be important. Accordingly, investigating how these variables operate together may contribute to a more comprehensive understanding of this relationship.

1.1. Family communication and difficulties in emotion regulation as serial mediators

Family communication is defined as a construct that reflects the nature of interactions individuals establish with other family members and is shaped within the family context [19]. LePoire states that family communication plays a determining role in the process of addressing family-related problems and sharing emotions and thoughts among family members [20]. Studies in the literature indicate that healthy family communication contributes to the preservation of individuals' psychological health. In this regard, Alshehri et al. demonstrated that individuals who have strong family bonds and can communicate effectively are psychologically healthier [21], and similar findings were also reported by Cluver [22]. In addition, it is noted that healthy family communication is associated with individuals' happiness and overall well-being [23, 24]. When these findings are considered together, it becomes evident that family communication is related to individuals' developmental processes and psychological outcomes. This suggests that family communication constitutes an important construct in the context of early life experiences and highlights the need to examine its role in the relationship between positive childhood experiences and psychological adjustment.

A supportive and secure family environment, which constitutes an important component of positive childhood experiences, is thought to be closely related to the quality of family communication [1, 25]. It has been suggested that open, supportive, and responsive communication patterns established in early life shape individuals' interpersonal relationships and emotional functioning [26, 27]. In this context, positive childhood experiences may be linked to individuals' later developmental outcomes through family communication. On the other hand, as noted earlier, family communication has been found to be associated with individuals' psychological functioning and well-being [23, 24]. This suggests that family communication may be related to psychological adjustment. Based on these considerations, family communication may play a mediating role in the relationship between positive childhood experiences and psychological adjustment.

In addition to family communication, difficulties in emotion regulation may also play a mediating role in the relationship between positive childhood experiences and psychological adjustment. Difficulties in emotion regulation are defined as individuals' inability to effectively control their emotional states or their tendency to rely on maladaptive strategies when regulating emotions [28]. Naragon-Gainey et al. conceptualize difficulties in emotion regulation as a condition arising from individuals' difficulties in recognizing, being aware of, and accepting their emotions [29]. Individuals experiencing difficulties in emotion regulation may feel helpless in response to life events and may struggle in terms of psychological functioning [30, 31]. Moreover, it has been reported that individuals who experience adverse events during childhood tend to have weaker emotion regulation abilities and have difficulty accepting their emotions [32]. Based on this, it can be expected that individuals with positive childhood experiences may have more developed emotion regulation skills and may be able to manage their emotions more effectively.

Positive childhood experiences may play an important role in shaping individuals' emotion regulation capacities. Early interactions within supportive and nurturing environments are known to contribute to the development of adaptive emotional processes. In particular, warm, responsive, and consistent caregiving experiences have been associated with more effective emotion regulation abilities in later life [26]. Conversely, the absence of such experiences may hinder the development of these skills, leading to greater difficulties in emotion regulation [33]. In this sense, positive childhood experiences may be linked to lower levels of difficulties in emotion regulation. On the other hand, difficulties in emotion regulation have been consistently associated with various indicators of psychological maladjustment. Individuals who struggle to regulate their emotions tend to experience higher levels of distress and show lower levels of adaptive functioning [34]. In particular, maladaptive emotion regulation strategies such as suppression and avoidance have been linked to poorer psychological outcomes, whereas effective regulation skills are associated with better psychological adjustment [35]. Based on these findings, it can be suggested that difficulties in emotion regulation may function as an explanatory mechanism in the relationship between positive childhood experiences and psychological adjustment.

Although the existing literature provides important insights into the roles of family communication and difficulties in emotion regulation in individuals' psychological functioning, these variables have generally been examined independently rather than within an integrated framework. In particular, despite the growing body of research emphasizing the developmental significance of positive childhood experiences, there remains a limited understanding of the mechanisms through which these experiences influence psychological adjustment. Previous studies have largely focused on the direct associations among these constructs, while the potential indirect pathways have received comparatively less attention. Moreover, to the best of current knowledge, no study has simultaneously examined positive childhood experiences, family communication, difficulties in emotion regulation, and psychological adjustment within a single comprehensive model. This gap highlights the need to consider these variables together in order to better understand the complexity of developmental and psychological processes. Examining these relationships within a unified framework may provide a more nuanced understanding of how early experiences translate into later psychological outcomes through interpersonal and intrapersonal mechanisms. In this respect, the present study aims to investigate the mediating roles of family communication and difficulties in emotion regulation in the relationship between positive childhood experiences and psychological adjustment. In this context, in line with the main purpose of the study, the following research questions (*RQ*) are sought to be answered:

RQ1. Does family communication mediate the relationship between positive childhood experiences and psychological adjustment?

RQ2. Do difficulties in emotion regulation mediate the relationship between positive childhood experiences and psychological adjustment?

RQ3. Do family communication and difficulties in emotion regulation serially mediate the relationship between positive childhood experiences and psychological adjustment?

2. Method

2.1. Participant and procedure

The sample of this study consisted of a total of 577 participants, including 344 females (59.6%) and 233 males (40.4%). The ages of the participants ranged from 18 to 68 years, with a mean age of 29.26 (*SD* = 8.61). Regarding employment status, 124 participants were students (21.5%), 159 were employed in the public sector (27.6%), 228 were employed in the private sector (39.5%), and 66 were unemployed or not working (11.4%). In terms of perceived socioeconomic status, the majority of the participants reported being at a moderate level (*n* = 435, 75.4%).

Data were collected using a convenience sampling method. The data collection process was conducted through an online form. The form, designed by the researchers, was structured such that responses were recorded only after all questions had been answered. Additionally, the form was designed to allow participants to withdraw from the study at any time. Before completing the form, participants provided informed consent. They were informed that participation was voluntary, and the purpose and procedure of the study were clearly explained in the instructions provided at the beginning of the form. Furthermore, participants were informed that no financial compensation would be provided for their participation.

2.2. Measures

2.2.1. Positive Childhood Experiences Scale. This scale was developed by Bethell et al. and adapted into Turkish by Çiçek and Çeri [36, 37]. The primary purpose of the scale is to assess positive childhood experiences that occurred before the age of 18. This unidimensional scale consists of seven items and is rated on a five-point Likert-type scale (*1 = never; 5 = always*). The scale does not include any reverse-coded items, and a total score can be computed. Higher scores obtained from the scale indicate that participants experienced more positive events during their childhood. The Cronbach's alpha internal consistency coefficient of the scale was reported as .78. In the present study, the Cronbach's alpha coefficient was calculated as .70.

2.2.2. Family Communication Scale. This scale was developed by Geçer and Yıldırım to measure the level of communication within families [19]. The scale is unidimensional and consists of a total of six items. It is rated on a four-point Likert-type scale (*1 = strongly disagree; 4 = strongly agree*), and it does not include any reverse-coded items. Higher scores obtained from the scale indicate that participants have more positive family communication. The Cronbach's alpha reliability coefficient of the scale was reported as .82. In the present study, the Cronbach's alpha reliability coefficient was found to be .86.

2.2.3. Difficulties in Emotion Regulation Scale-8. The scale developed by Penner et al. was adapted to Turkish culture by Ekşi and Erik [38, 39]. The scale consists of eight items in total and includes four subscales: "*goal*", "*impulse*", "*non-acceptance*", and "*strategy*". It is rated on a five-point Likert scale (*1 = almost never; 5 = almost always*). A total score can be obtained from the scale, with higher scores indicating greater difficulties in emotion regulation. The Cronbach's alpha internal consistency coefficient

of the scale was reported as .87. In the present study, the Cronbach's alpha coefficient was calculated as .86.

2.2.4. Brief Psychological Adjustment Scale. This scale, developed by Cruz et al. to assess participants' levels of psychological adjustment, was adapted into Turkish by Yıldırım and Solmaz [14, 16]. The unidimensional scale consists of six items and is rated on a seven-point Likert scale (*1 = not at all; 7 = extremely*). A total score can be obtained from the scale. As a reverse-scored measure, lower scores indicate higher levels of overall psychological adjustment. The Cronbach's alpha internal consistency coefficient of the scale was reported as .88. In the present study, the Cronbach's alpha coefficient was found to be .92.

2.3. Data analysis

In this study, preliminary analyses were first conducted. Within this scope, descriptive statistics, normality values, correlation coefficients, and reliability coefficients were calculated. Subsequently, in line with the research questions, the two-step approach recommended in the literature was adopted [40]. The analyses were carried out using structural equation modeling. In the first step, the measurement model was tested, and in the second step, the structural model was examined. For both stages, model fit indices including CFI, NFI, TLI, IFI, SRMR, and RMSEA were considered. According to Hoyle and Panter, values greater than .90 for CFI, NFI, TLI, and IFI, and values lower than .08 for SRMR and RMSEA indicate acceptable model fit [41]. These threshold values were also taken into account in the present study. Finally, gender and age variables were included in the structural model as covariates.

2.4. Ethics

Ethical approval for this study was obtained from the institution with which the authors are affiliated, as the research involved human participants. The study protocol was reviewed and approved by the Biruni University Human Research Ethics Committee. Furthermore, the research was carried out in accordance with the ethical principles outlined in the 1964 Declaration of Helsinki and its subsequent revisions. All professional ethical guidelines were adhered to throughout the study.

3. Results

3.1. Preliminary analyses

In the preliminary analyses of the study variables, descriptive statistics were first computed. Accordingly, the mean score for positive childhood experiences was 24.28 (*SD* = 4.62), for family communication 18.62 (*SD* = 3.42), for difficulties in emotion regulation 17.42 (*SD* = 5.90), and for psychological adjustment 28.87 (*SD* = 9.26). Examination of normality indicated that skewness values ranged between − .402 and .485, while kurtosis values ranged between − .833 and − .531. These findings suggest that the assumption of normality was met. Additionally, Cronbach's alpha reliability coefficients for all variables were found to be .70 or higher, indicating that the measures were sufficiently reliable. Correlation analyses revealed that positive childhood experiences were significantly and positively associated with

family communication (r = .59, p < .01) and psychological adjustment (r = .19, p < .01), and negatively associated with difficulties in emotion regulation (r = − .25, p < .01). Similarly, family communication was negatively associated with difficulties in emotion regulation (r = − .27, p < .01) and positively associated with psychological adjustment (r = .24, p < .01). Finally, a significant negative relationship was found between difficulties in emotion regulation and psychological adjustment (r = − .42, p < .01). All results are shown in Table 1.

Table 1
Descriptive Statistics, Normality Values, Reliability Coefficients, and Correlations for the Study Variables

Variable	**1**	**2**	**3**	**4**
1. Positive childhood experiences	–			
2. Family communication	.59**	–		
3. Difficulties in emotion regulation	− .25**	− .27**	–	
4. Psychological adjustment	.19**	.24**	− .42**	–
Mean	24.28	18.62	17.42	28.87
SD	4.62	3.42	5.90	9.26
Skewness	− .063	− .100	.485	− .402
Kurtosis	− .546	− .833	− .531	− .789
Cronbach's alpha	.70	.86	.86	.92
McDonald's omega	.70	.87	.86	.93
Guttman's lambda	.71	.84	.85	.92
Note. ** p < .01				

3.2. Serial multiple mediation analysis

First, the measurement model was tested. In this model, analyses were conducted using four latent variables and 10 observed variables. The fit indices indicated a good level of model fit (χ^2/df = 1.35; RMSEA = .03, SRMR = .06, TLI = .99, CFI = .99, NFI = .98, IFI = .98). Factor loadings for all indicators in the measurement model were found to be significant and ranged between .71 and .97. This finding indicates that each indicator adequately represents its corresponding latent construct. Following the testing of the measurement model, the structural model was examined. Within the structural model, the partial mediation model was tested first. The fit indices for the partial mediation model indicated a good level of fit (χ^2/df = 2.89; RMSEA = .06, SRMR = .06, TLI = .96, CFI = .97, NFI = .96, IFI = .94). However, the path from positive childhood experiences to psychological adjustment was found to be non-significant (B =

0.10, $p > .05$). Therefore, this path was removed from the model, and the full mediation model was tested. The fit indices for the full mediation model also indicated a good fit ($\chi^2/df = 2.83$; RMSEA = .05, SRMR = .06, TLI = .96, CFI = .97, NFI = .96, IFI = .94). Moreover, all paths in this model were found to be significant. In addition, AIC and ECVI fit indices were examined for both the partial mediation and full mediation models, and the lower values observed in the full mediation model further supported its preference. Finally, in the full mediation model, the effects of gender and age were controlled. All findings are presented in Fig. 1.

To test the statistical significance of the mediating effects, analyses were conducted using a bootstrap resampling method with 5,000 samples. In this context, the significance of the indirect effects was evaluated based on 95% confidence intervals. The absence of zero within the confidence interval indicates that the indirect effect is statistically significant [42]. The findings revealed that the first indirect effect indicated that positive childhood experiences predicted psychological adjustment through family communication (bootstrap coeff = .18, $p < .05$; 95% CI [.06, .31]). The second finding demonstrated that positive childhood experiences predicted psychological adjustment via difficulties in emotion regulation (bootstrap coeff = .13, $p < .05$; 95% CI [.03, .27]). The third and main finding demonstrated that positive childhood experiences predicted psychological adjustment through both family communication and difficulties in emotion regulation (bootstrap coeff = .11, $p < .05$; 95% CI [.04, .20]). All of these findings are presented in Table 2.

Table 2
Indirect effect of serial mediation model

Path	Coefficient	95% CI	
		LL	UL
PCE ◊ Family communication ◊ Psychological adjustment	.18	.06	.31
PCE ◊ Difficulties in emotion regulation ◊ Psychological adjustment	.13	.03	.27
PCE ◊ Family communication ◊ Difficulties in emotion regulation ◊ Psychological adjustment	.11	.04	.20

Note. PCE positive childhood experiences; *CI* confidence interval; *LL* lower limit; *UL* upper limit

4. Discussion

The present study aimed to examine the serial mediating roles of family communication and difficulties in emotion regulation in the relationship between positive childhood experiences and psychological adjustment. The findings revealed that both family communication and difficulties in emotion regulation play significant mediating roles in this relationship, including a serial mediation pathway linking these variables. These results indicate that positive childhood experiences are associated with psychological adjustment through both direct effects and interpersonal and intrapersonal mechanisms. In particular, the findings suggest that supportive early experiences may contribute to better psychological adjustment by fostering healthier family communication and more adaptive emotion regulation

processes. Thus, the current study provides a more comprehensive understanding of the pathways through which early life experiences are linked to psychological outcomes in adulthood. The findings related to all research questions are discussed in detail below.

The first finding obtained within the scope of the study indicates that family communication plays a mediating role in the relationship between positive childhood experiences and psychological adjustment. In other words, positive childhood experiences predict psychological adjustment through family communication. This finding corresponds to the first research question (*RQ1*). This result is consistent with previous studies emphasizing the importance of family communication in individuals' psychological functioning. For instance, research has shown that healthy family communication contributes to the preservation of psychological health and is associated with greater well-being and happiness [21–24]. Moreover, early life family environments characterized by supportive and responsive interactions have been found to shape individuals' emotional and interpersonal development [26, 27]. In this regard, positive childhood experiences, which include nurturing and secure family contexts, may facilitate the development of healthier communication patterns within the family [1, 25, 43]. Given that family communication is also linked to psychological functioning, it can be inferred that it serves as a pathway through which early positive experiences influence later psychological adjustment. From this perspective, the current finding suggests that the quality of family communication may be one of the key mechanisms explaining how positive childhood experiences are translated into adaptive psychological outcomes in adulthood.

The second finding of the study indicates that difficulties in emotion regulation play a mediating role in the relationship between positive childhood experiences and psychological adjustment. In other words, positive childhood experiences predict psychological adjustment via difficulties in emotion regulation. This finding provides an answer to the second research question (*RQ2*). This result is consistent with previous research highlighting the role of emotion regulation processes in individuals' psychological functioning. Studies have shown that difficulties in emotion regulation are associated with poorer psychological outcomes and lower levels of adaptive functioning [34, 35]. At the same time, in these studies, early life experiences have been emphasized as an important factor in the development of emotion regulation capacities. In particular, supportive and nurturing childhood environments have been linked to more effective emotion regulation abilities in later life [26], whereas adverse experiences have been associated with greater difficulties in regulating emotions [32, 44]. Given that positive childhood experiences involve safe, responsive, and emotionally supportive environments [1, 25], it can be argued that such experiences contribute to the development of more adaptive emotion regulation processes. Considering that difficulties in emotion regulation are also related to psychological maladjustment, this variable appears to function as an important mechanism linking early experiences to later psychological outcomes. From this perspective, the present finding suggests that individuals who report higher levels of positive childhood experiences may achieve better psychological adjustment in adulthood partly because they experience fewer difficulties in regulating their emotions.

The third and main finding of the study indicates that family communication and difficulties in emotion regulation play a serial mediating role in the relationship between positive childhood experiences and psychological adjustment. The findings demonstrated that positive childhood experiences predicted family communication, family communication predicted difficulties in emotion regulation, and difficulties in emotion regulation subsequently predicted psychological adjustment. This finding provides an answer to the third research question (*RQ3*). This result suggests that positive childhood experiences may contribute to psychological adjustment through a sequential process involving both interpersonal and intrapersonal mechanisms. In this pathway, supportive and nurturing early experiences may first be reflected in healthier family communication patterns. Previous studies have emphasized that positive childhood experiences include safe, stable, and supportive family environments [1, 25], and that open and responsive communication within the family shapes individuals' emotional functioning [27, 45]. In turn, healthier family communication may reduce difficulties in emotion regulation by creating an environment in which emotions can be expressed, understood, and managed more effectively. This interpretation is consistent with studies indicating that family context plays an important role in the development of emotion regulation capacities [26] and that difficulties in emotion regulation are associated with poorer psychological functioning [34, 35]. Therefore, the serial mediation finding indicates that early positive experiences may support psychological adjustment in adulthood by strengthening family communication and reducing difficulties in emotion regulation. From this perspective, the present study highlights the importance of considering family communication and difficulties in emotion regulation together when explaining how positive childhood experiences are linked to psychological adjustment.

4.1. Implications

The findings of the present study offer several important implications for researchers, practitioners, and policymakers. First, the absence of prior research examining positive childhood experiences, family communication, difficulties in emotion regulation, and psychological adjustment within a single model highlights the theoretical contribution of this study to the literature. By demonstrating a serial mediation pathway, the findings support developmental perspectives suggesting that early life experiences shape later psychological outcomes through both interpersonal and intrapersonal processes [27]. In this regard, the results contribute to a more integrated understanding of how early supportive environments may foster adaptive functioning in adulthood. From a practical standpoint, the findings suggest that interventions aimed at enhancing psychological adjustment should not focus solely on individual-level factors but also consider family-based processes. In particular, strengthening family communication may serve as an important target for intervention, as healthy communication patterns have been associated with better psychological functioning and well-being [23, 24]. At the same time, addressing difficulties in emotion regulation appears to be essential, given their strong associations with maladaptive psychological outcomes [34]. Therefore, intervention programs that simultaneously promote effective family communication and adaptive emotion regulation strategies may contribute to improving individuals' psychological adjustment. In addition, the findings have implications for

policymakers, particularly in the context of preventive mental health services. The results underline the importance of promoting positive childhood experiences, which are known to support lifelong development and well-being [1, 25]. Policies that aim to strengthen family environments, support parenting practices, and create safe and nurturing conditions for children may indirectly enhance psychological adjustment in adulthood. Moreover, incorporating family-focused and emotion regulation-based components into educational and community programs may help individuals develop the necessary skills for maintaining psychological well-being across the lifespan.

4.2. Limitations and future research

Some limitations of the current study should also be considered. First, the use of a cross-sectional design limits the ability to draw causal inferences among the variables. Future studies employing longitudinal or experimental designs may provide a clearer understanding of the directionality of these relationships. Second, the data were collected from a Turkish sample using a convenience sampling method, which may limit the generalizability of the findings. Therefore, future research could include more diverse samples from different cultural and social contexts. Third, all variables in this study were assessed using self-report measures, which may be subject to response biases. Using multiple data sources or alternative assessment methods in future studies may help to address this limitation. Finally, although participation was voluntary, the potential influence of social desirability bias should be considered when interpreting the findings and designing subsequent research.

Declarations

Ethics approval and consent to participate

The protocol for this study was approved by the Biruni University Human Research Ethics Committee. The study was performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki and its following updates. Informed consent was obtained from all the individual participants that were included in the study. All professional ethical guidelines were adhered to throughout the study.

Consent for publication

Not applicable.

Competing interests

No conflict of interest exists for this manuscript for any of the authors.

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Availability of data and materials

The dataset that allowed us to obtain the findings of this research will be provided upon request. For this, the first author of the study should be contacted. The e-mail address of the said author is aomerustaoglu@biruni.edu.tr.

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Figures

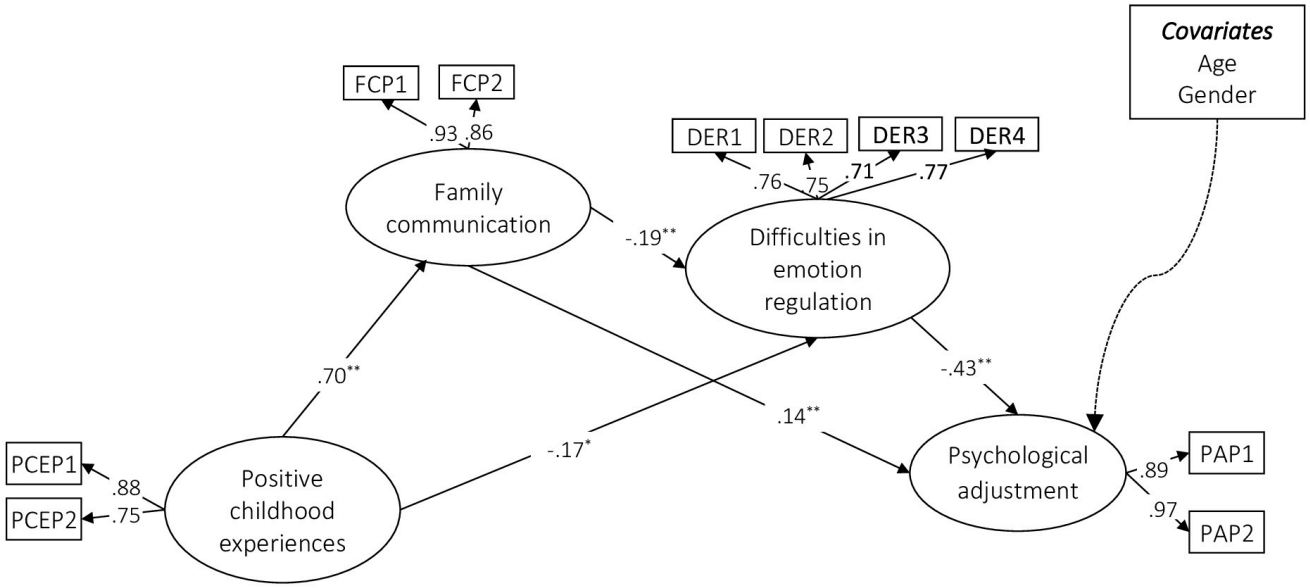


Figure 1. *Structural equation modeling for the serial mediation model.*

Note. * $p < .05$, ** $p < .01$, *PCEP:* parcel of positive childhood experiences, *FCP*: parcel of family communication, *PAP*: parcel of psychological adjustment, *DER*: factor of difficulties in emotion regulation

Figure 1

See image above for figure legend