

Family Environment and Adolescent Mental Health: Unpacking the Mediating Role of Differentiation of SelfRabeea Irfan^{1*}, Sayyeda Taskeen Zahra², Sadia Saleem³**Abstract**

The mental health problems experienced by adolescents are increasingly recognized as a major concern for public health, with family environment playing a pivotal role in shaping outcomes; however, the underlying intrapersonal mechanisms of this association remain largely unclarified. The primary objective of the present study was to explore the role of differentiation of self in the association between family environment and mental health problems in adolescents. For this purpose, total of 289 boys (56.4%) and 126 girls (43.6%) of grade 9, 10, 11 and 12 were selected from Lahore, Pakistan, through purposive sampling, and age range was 14-20 years ($M=16.21$, $SD=1.30$). Data was collected using Family Cohesion Scale, Family Satisfaction Scale, Differentiation of Self Scale and Depression Anxiety and Stress Scale. SPSS 25 was used for data analysis. Pearson Product Moment Correlation showed a significant positive association in family environment and differentiation of self, and a significant negative association between family environment, differentiation of self and mental health problems in adolescents. Mediation analysis showed that differentiation of self partially mediates the association between family environment and mental health problems in adolescents, and after controlling the mediators, the direct effect of family environment on mental health increased ($\beta=-.02$, $p < .01$). This study helps in understanding the role of intrapersonal dynamics in development of mental health problems in adolescents.

Keywords: Adolescent, Differentiation of Self, Family Environment, Mental Health Issues

Received: 05 November 2025; Revised
Received: 24 December 2025; Accepted:
26 December 2025

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Introduction

The significance of family for an individual cannot be denied. Family plays a significant contribution in shaping adolescent mental

health outcomes (Hikmatovna, 2024). In collectivistic cultures such as Pakistan's, families play a crucial role in shaping an adolescent's identity and guiding their major life decisions (Malik et al., 2022; Prioste et al., 2020). The term family environment is used to refer to cumulative effect of different familial factors, including family cohesion, parent-child relationship, parental support and involvement, family communication pattern and conflict resolution styles (Kim et al., 2022). Research has consistently shown that a cohesive, supportive and positive family environment is associated with better mental health outcomes, while a dysfunctional family environment is linked to increased risk of mental health issues (Bashir et al., 2024; Cong et al., 2020; Zhang et al., 2024). The mental health landscape of Pakistani adolescents is characterized by a diverse array of concerns, encompassing emotional

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dysregulation, anxiety symptoms, depressive symptoms, sleep disturbances, and personality disorder traits (Nawaz & Mushtaq, 2024). Adolescent mental health is impacted by family environment through various ways, including social support, reinforcement, and modeling (Bandura, 2014), as well as several intrapersonal processes. However, the mechanisms underlying this relationship are not yet fully understood. Recent research has highlighted the importance of intrapersonal processes including differentiation of self in understanding the relationship between family environment and adolescent mental health: differentiation of self (Papero, 2024).

Differentiation of self refers to the ability to maintain a sense of autonomy, identity and individuality within the family context (Jankowski et al., 2025). This includes the ability to develop one's own values, beliefs, ideas and goals, and to maintain emotional as well as psychological distance from family members (Bowen, 1978). The development of differentiation of self was postulated to be influenced by family environment, where dysfunctional family environment resulted in lower indices of differentiation of self in adolescents (Peleg-Popko, 2002). The process of differentiation of self is a critical developmental milestone during adolescence, facilitating the emergence of a distinct identity, enhanced emotional regulation, and increased autonomy, ultimately shaping the individual's sense of self and interpersonal relationships (Duch-Ceballos et al., 2021). Adolescents with high self-differentiation were also found to be better in emotion regulation as compared to their contemporaries with lower levels of self-differentiation (Duch-Ceballos et al., 2021). Consequently, lower levels of differentiation of self have been associated with emotional dysregulation, anxiety, depression and relationship distress (Álvarez-Hierro & Oliver, 2024; Dolz-del-Castellar & Oliver, 2021; Nook, 2021;). In the Pakistani cultural context,

differentiation of self can be challenging due to the strong emphasis on family loyalty and respect for authority (Ahmad & Koncsol, 2022). Due to collectivistic culture, Pakistani adolescents may feel pressure to prioritize family needs over individual desires (Irfan et al., 2024), leading to a lack of autonomy and independence. Furthermore, the Pakistani cultural values of collectivism and interdependence may lead to a blurring of boundaries between individual and family identities (Jamal, 2020). A lack of opportunity to exercise independence and take personal decisions has been linked with poor mental health outcomes (Chen et al., 2021).

Mental health issues are a significant concern for adolescents, with anxiety, depression, and stress being particularly common (Silva et al., 2020). Anxiety disorders including social anxiety disorder, generalized anxiety disorder etc. are known to influence the adolescents' ability to concentrate, sleep, and engage in daily activities (Merikangas et al., 2020). Depressive disorders such as major depressive disorder and persistent depressive disorder can lead to low self-esteem and self-confidence as well as feelings of hopelessness and sadness, along with a loss of interest in activities (Wang et al., 2025). Stress, resulting from academic pressure, family expectations, and social norms among other factors, can also have a profound impact on adolescents' mental health (Zhang et al., 2024). In Pakistan, adolescents face unique mental health challenges due to cultural, social, and economic factors (Noorullah et al., 2024). Pakistani adolescents may experience higher levels of anxiety and depression due to academic pressure, family expectations, and social norms (Kausar et al., 2024). The cultural emphasis on respect for authority and family honor can lead to a lack of emotional expression and validation within the family context, thus exacerbating the symptoms of stress, depression and anxiety (Seemi et al., 2023). Additionally, the

collectivistic values of Pakistani society may lead to blurring of boundaries between individual and family identities, increasing anxiety, stress and depression (Ahmad & Konecso, 2022). Furthermore, the social factors of poverty, lack of education, and limited access to resources can also impact adolescents' mental health in Pakistan (Chachar & Mian, 2022; Noorullah et al., 2024). In the current uncertain and unstable economic conditions, the lack of education and job opportunities may lead to feelings of hopelessness and despair among adolescents, contributing to depression (Ahmad & Konecso, 2022). Finally, limited access to mental health services may further exacerbate anxiety, depression, and stress among adolescents in Pakistan (Chachar & Mian, 2022). A recent study identified 20% school going children to be struggling with very severe levels of emotional and behavioral problems, including anxiousness, social withdrawal, aggression, rejection, somatic problems and depression (Farooq et al., 2023). The alarming rates of emotional and behavioral issues among Pakistani children and adolescents underscore the importance of examining the multifaceted aspects of family environment to identify key factors contributing to adolescent mental health concerns.

To conclude the above literature, the family environment is a critical factor in shaping, developing and maintaining mental health problems in adolescence phase. During this phase of storm and stress, adolescents are particularly vulnerable for developing mental health concerns due to abrupt bio-psycho-social and emotional changes. The above literature highlights the critical need to investigate the complex relationship between family environment, differentiation of self, emotional regulation, coping strategies, and mental health outcomes among adolescents in Pakistan. While the interplay of social and psychological processes in family systems has been extensively studied, existing literature is predominantly grounded in

individualistic societies, restricting its relevance to Pakistan due to profound differences in cultural values, religious practices, spiritual beliefs and socioeconomic conditions. Pakistan's distinct sociocultural context, marked by collectivistic, spiritual, and regional dynamics, highlights the necessity for localized research on adolescent development. Therefore, the aim of the current study is to examine the association between study variables to obtain culturally-accurate information about impact of psycho-social factors on adolescent mental health. In addition, it is also the aim of the study to evaluate the mediating role of intra-personal factors in association between family environment and adolescent mental health.

Method

Participants

This study was conducted in six government higher secondary schools in Lahore, Pakistan, employing a purposive sampling strategy to select participants. The sample consisted of 289 students, divided between boys (163, 56%) and girls (126, 44%), aged 14-20 years ($M = 16.21$, $SD = 1.30$). The sample size was determined via *g* power analysis. The participants were distributed across grades 9-12, i.e., 40%, 38%, 16%, and 12% in grade 9, 10, 11 and 12 respectively. Inclusion criteria included adolescents in grades 9 through 12, studying in government schools. Exclusion criteria encompassed of students belonging to single-parent households. 24 response forms were discarded due to missing information.

Measures

Differentiation of Self Scale (DSS)

Differentiation of Self Scale (DSS) was used to evaluate differentiation of self and identity in adolescents (Irfan et al., 2024). It is an indigenous scale consisting of 48 items. DSS has three factors, Interpersonal differentiation (18 items), Maladaptive differentiation (11 items) and Emotional diffusion (6 items). A 4-point Likert scale is used to score the items with 0 indicating

Not at all, to 3 indicating *always*. In the present study, the subscale Interpersonal Differentiation was used. The obtained score in this subscale ranged from 0- 54. Cronbach's alpha of the scale in the present study for Interpersonal Differentiation ($\alpha=.86$) indicates high internal consistency.

Family Satisfaction Scale (FSS)

Family Satisfaction Scale developed by Olsen (1985) was used to measure the participants' satisfaction with their family relationships and dynamics. It is a 10 item self-report measure with a 5-point Likert rating scale ranging from 0= *Not at all*, to 4 = *always*, and obtained scores can range from 0-40. The FSS evaluates individual's satisfaction from various aspects of family life, including communication, emotional support, conflict resolution and adaptability, and higher scores indicate greater family satisfaction. The Cronbach alpha for FSS in present study is .87 indicating high internal consistency. For the purpose of current study, Urdu translated version of FSS scale was used.

Family Communication Scale (FCS)

The Family Communication Scale (FCS) is a self-report measure developed by Olsen (1986) to assess the emotional bonding and closeness among family members. Originally part of the Family Adaptability and Cohesion Evaluation Scales (FACES), a shortened 10-item version of the FCS was translated into Urdu and used in the current study to evaluate family cohesion of participants. The items are scored on a 5-point Likert rating scale with 0 indicating *Not at all*, to 4 indicating *always*, and total score is obtained by calculating each item. Higher scores indicate better communication within family. The obtained scores can range between 0-40. The internal consistency of FCS in current study was adequate at $\alpha=.85$. The cumulative scores of FSS and FCS were computed together to obtain Family Environment index.

Depression, Anxiety and Stress Scale (DASS-21)

The Depression Anxiety Stress Scales-21 (DASS-21) is a self-report instrument developed by Lovibond and Lovibond (1995) to assess the symptoms of depression, anxiety, and stress. The scale consists of 21 items, divided into three subscales namely Depression, Anxiety and Stress, with each subscale having 7 items. Each item is rated on a 4-point Likert scale with 0 indicating *Not at all*, to 3 indicating *Very frequently*. The internal consistency of DASS-21 in current study was .80, which is adequate. For the purpose of this study, Anxiety subscale of DASS-21 was used. The range of scores was 0-21, with higher score indicating higher levels of anxiety in respondents.

Procedure

Ethical approval was secured from the Institute's ethical review committee. Permission for data collection was obtained from the school authorities. For this study, data was gathered from April 2024 to May, 2024. Data collection was conducted through group administration in classroom settings, with the researcher introduced by the class instructor and coordinator. A package containing a demographic information sheet and study instruments, all translated into Urdu, was distributed among the students, accompanied by clear instructions. No incentives were offered for participation. Following completion, participants of the study were debriefed about the aim and purpose, and their questions were addressed. Finally, they were thanked for their participation.

Ethical Considerations

Ethical guidelines were followed in the current study. First, the participants gave informed consent before participating in the research. Second, the participants were assured that their identifying information will not be shared. Third, the participants were informed that their responses will be kept confidential from their teachers, family and other authorities. Fourth, the participants were made aware of their right

to withdraw at any stage during the data collection. Fifth, the participants were debriefed about the current study.

Results

Table 1

Inter-correlations among Family Environment, Differentiation of Self, and Mental Health Problems (N = 289)

Variables	<i>M</i>	<i>SD</i>	FE	DOS	MHP
FE	47.16	14.15	-	.35***	-.21***
DOS	46.40	9.61	-	-	-.20**
MHP	7.66	4.72	-	-	-

Note. FE= Family environment, DOS= Differentiation of Self, MHP= Mental Health Problems
** $p < .01$, *** $p < .001$

Table 1 shows the inter correlation between family environment, differentiation of self, and mental health problems. The relationship among the variables was explained using Pearson Product-Moment Correlation. The results indicate that there is highly significant positive correlation between family environment and differentiation of self ($r = .35$, $p < .001$),

and a significant negative association between FE and MHP ($r = -.21$, $p < .001$), and DOS and MHP ($r = -.20$, $p < .01$). Hence, it can be concluded that positive family environment is associated with higher differentiation of self in adolescents, and negative family environment is associated with increased mental health problems in adolescents.

Figure 1

Simple Mediation Model of Differentiation of Self between Family Environment and Mental Health Problems in Adolescents (N=289)

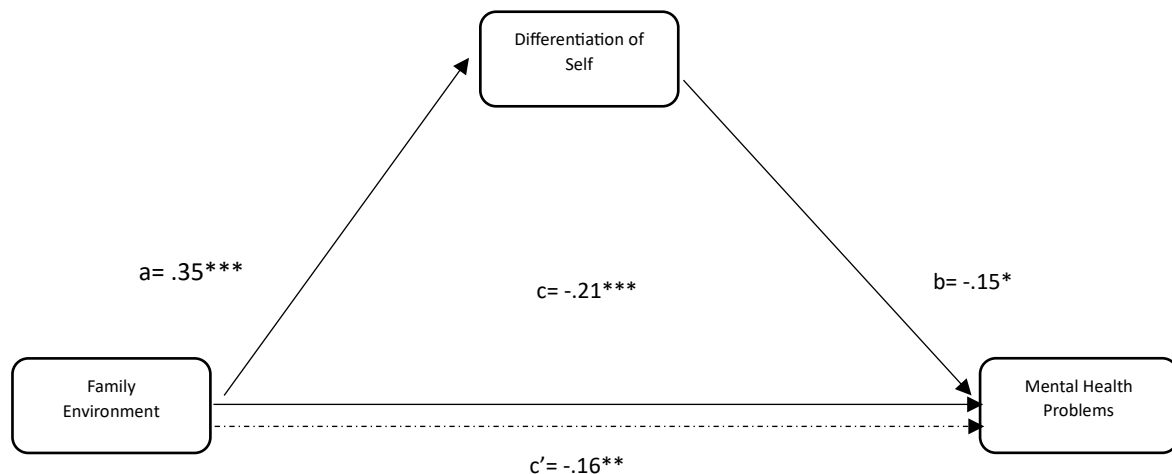


Figure 1 shows the mediating effect of differentiation of self in association between family environment and mental health problems. Path *a* depicting direct effect of Family environment on Differentiation of Self (*M*) was found to be highly significant ($\beta = .35$, $SE = .04$, $p < .001$ ***). Path *b* depicting the direct effect

of Differentiation of Self on Mental health problems emerged to be negatively significant ($\beta = -.15$, $SE = .02$, $p < .001$ *). The total effect (path *c*) shows a highly significant direct effect of Family environment on Mental health problems through mediator ($\beta = -.21$, $SE = .05$, $p < .001$ ***). Finally, *c'* depicting the direct

effect of Family environment on Mental health problems also significant ($\beta = -.16$, $SE = .02$, $p < .001^{**}$). On the basis of results, it can be concluded that the

association between family environment and mental health problems is partially mediated by differentiation of self.

Table 2

Indirect Effects of Family Environment on Mental Health Problems through Differentiation of Self (N=289)

Effects	β	SE	Bootstrap 95% BCa CI	
			LL	UL
Total Indirect Effect	-.05	.03	-.11	-.01

Note. BCa CI= bias corrected and accelerated confidence interval, LL= lower limit, UL=upper limit

Indirect effects with the current model were also investigated, by taking estimates at 95% confidence interval over 5000 bootstraps samples. The findings as depicted in Table 2 show that total indirect effect (the difference between total and direct effect) of family environment on mental health problems in adolescents through differentiation of self, is

statistically significant. Hence, all of the proposed assumptions of Baron and Kenny (1986) and Hayes and Preacher (2013) are fulfilled confirming the mediating role of differentiation of self in the association between family environment and mental health problems experienced by adolescents.

Discussion

Adolescence is a crucial stage in an individual's life, where they undergo a plethora of physical, hormonal, social and academic challenges, due to which adolescents are considered an at-risk population for developing mental health problems (Beckwith et al., 2024; Herd et al., 2020). A significant portion of Pakistani population is adolescents and young adults (United Nations Populations Fund, 2023); therefore, it is imperative that efforts be directed towards identifying and exploring underlying emotional, psychological and social factors which lead towards mental health problems in adolescents. The current study is also an endeavor to achieve this goal.

The findings of this study concur with both international and Pakistani literature, which consistently highlights the critical role of family environment in shaping adolescents' mental health outcomes (Hale et al., 2023; Maurer et al., 2025). Pakistani studies have shown that hostile, controlling, and conflict-laden family environments are significantly associated with higher levels

of depression, anxiety, and behavioral problems among adolescents (Zahra & Saleem, 2021). Similarly, supportive and emotionally warm family environments have been found to act as protective factors against psychological distress in Pakistani adolescents (Saleem et al., 2021). These findings align with the results of the present study, which underscore the importance of family dynamics in adolescent mental health. In the present study, correlation analysis revealed a significant association between family environment, mental health issues and differentiation of self. This result indicates that in the collectivistic culture of Pakistan, where family is given more importance over individuals, DOS plays a protective role against mental health problems in adolescents. Adolescence is the age of identity formation, where an individual starts breaking away from the family and starts developing his own moral values, personal principles and preferences (Gross & John, 2003). However, in the collectivistic culture of Pakistan, adolescents are held under tight reign of their parents and are expected to adhere to

the parental and familial traditions and values. In these circumstances, the result of the current study provides a very beneficial outlook on the efficacy of differentiation of self as a protective mechanism against mental health problems caused by family environment. This association was further elaborated by mediation analysis, which revealed that positive, supportive and warm family environment is associated with fewer mental health problems, and a negative and hostile family environment was positively linked with negative mental health consequences. This association was found to be affected by mediating role of differentiation of self. It was discovered that DOS has a high positive association with family environment, and in turn, DOS acts as mediator to influence the association between family environment and mental health problems. According to the results, high differentiation of self is linked to fewer MHPs in adolescents. These results indicate that inculcation of DOS can result in improved mental health for the adolescents by mitigating the effects of a negative and hostile family environment. The results of mediation analysis concur with earlier findings in several independent studies across different cultures, where differentiation of self was identified as a strong mediating factor in psychosocial problems and mental health issues experienced by adolescents and adults (Jankowski & Sandage, 2012; Rodríguez-González et al., 2019; Sandage & Harden, 2011; Sandage & Jankowski, 2010; Simon et al., 2019).

The study's findings are aligned with parental Attachment Theory. A secure attachment style with parent is considered as one of the most significant indicators of supportive and positive family environment (Bowlby, 1988). The familial environment also plays a crucial role in personality development of an adolescent (Mueller et al., 2023). Cultivation of intrapersonal characteristics such as differentiation of self (Prioste et al., 2020) has been linked with parental practices, family dynamics and

environment in several independent studies. These positive characteristics create resilience against adversity, which in turn result in fewer mental health problems. The results of the current study are consistent with earlier findings, and thus contribute to a growing body of evidence from different cross-cultural studies by underscoring the significance of intrapersonal processes in shaping adolescent mental health. It also brings focus towards the role of support system and family environment, highlighting the need for family-centered and culturally sensitive support system in order to foster a facilitative and supportive environment as well as promoting intrapersonal development for the vulnerable and critical age of adolescence.

Strengths and Limitations

This study has several strengths and limitations which must be considered. There is no significant study on DOS and its mental health consequences in Pakistan. Therefore, the current study has made a significant contribution in the existing local body of research in understanding factors that identify risk and offer protective factors for adolescents' mental health problems. However, the present study has several limitations which should be considered. First, the sample was restricted to urban areas, which may not be representative of rural populations. Second, sample included government schools, omitting private schools. These factors may reduce the generalizability of the study. Additionally, using self-report measures may have introduced social desirability bias into the results, where participants provided answers that are deemed socially acceptable rather than their true experiences. To address these limitations, future research should focus on recruiting a more diverse participant pool, including both urban and rural populations, and include both government and private schools to ensure a more comprehensive representation. Furthermore, the biasness in responses due to social desirability can be

reduced by using a combination of self-report and objective measures, thus increasing the generalizability of findings and providing a more accurate understanding of the research topic.

Implications and Conclusion

The results of the current research have important implications for the development of culturally-sensitive interventions and prevention strategies crafted for the specific needs of Pakistani adolescents and their families. By addressing the challenges of differentiation of self, emotional regulation, and coping strategies, mental health professionals and policymakers can promote healthier family environments and reduce the risk of mental health issues experienced by adolescents in Pakistan. Furthermore, this study's focus on the Pakistani cultural context underscores the importance of considering cultural factors in the development of mental health interventions, underscoring the need for more exploration to ensure that interventions are effective and sustainable in diverse cultural contexts. Ultimately, this study will contribute to our understanding of the complex interplay between family environment and adolescent mental health, emphasizing the need for culturally specific as well as comprehensive approaches to promote the psychological well-being of adolescents in Pakistan. Understanding such mediating analysis will further help in understanding of underlying mechanism of the processes through which family functioning influence overall well-being. This research will also help in promoting healthy family interactions, remedial strategies to improve emotion regulation and coping to handle daily life challenges and serious mental health concerns in adolescents.

Ethics Statement

All the ethical standards of APA were met. Informed consent was taken in written form from all the respondents to participate in this study.

Contribution of Authors

Rabeea Irfan: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft
Sayed Taskeen Zahra: Methodology, Writing - Reviewing & Editing, Supervision

Sadia Saleem: Conceptualization, Methodology, Writing - Reviewing & Editing, Supervision

Conflict of Interest

There is no conflict of interest declared by the authors.

Source of Funding

The authors declared no source of funding.

Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [R.I.] upon the reasonable request.

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