

Psychobiological Approach to Single Parenting Strategies in Adolescent Emotional Regulation: A Case Study

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Abstract: This research is motivated by the high incidence of emotional disorders among adolescents in Ramba Village, Sosa Julu, Padang Lawas, who are raised by single parents with limited supervision and attention. This study aims to identify the types of emotional disorders experienced by adolescents, the parenting styles applied by single parents, and the supporting and inhibiting factors involved. This qualitative descriptive study was conducted in Ramba Village. Data were collected through purposive sampling from six single parents, ten adolescents aged 17 to 21 years, as well as neighbors, peers, and the village head. Data collection methods included non-participant observation, unstructured interviews, and documentation. Data validity was ensured through methodological triangulation. The results reveal from a psychobiological perspective that emotional disorders experienced by adolescents include anger, anxiety, and stress. Single parents apply both authoritarian and democratic parenting styles, with democratic parenting proven to be more effective in managing emotions. Supporting factors include family support and a positive social environment, while inhibiting factors include low parental education, limited time, and economic constraints. This study concludes that from a psychobiological approach, appropriate parenting styles, especially democratic parenting and environmental support, are very important for improving adolescents' emotional well-being.

Keywords: Adolescent emotional; Case study; Parenting strategy; Single parent

Introduction

The family is the smallest and most fundamental institution within a society's social system, serving as the primary environment for a child's growth and development (X. Lin et al., 2024; Nasution et al., 2024). A positive and nurturing family atmosphere is essential for optimal child development, whereas unfavorable conditions can hinder this process (X. Lin et al., 2024; Nasution et al., 2023). In an ideal family, both the mother's role as caregiver and household manager and the father's role as leader and provider are vital for achieving harmony and happiness (Adawiyah & Suaedah, 2022; Cahayatiningsih et al., 2022; Wang et al., 2025). Parents have a responsibility to prepare their children for life, which includes physical, emotional, and mental readiness, enabling them to grow and develop holistically, physically, psychologically, and socially

(Dzakiyyah et al., 2025; Ilham, Agus, et al., 2024; Jasmanedi et al., 2025; Rinaldi et al., 2025; Sari, Kurniawan, et al., 2023). However, this responsibility becomes more challenging and burdensome for single parents (Ayala et al., 2021; Kelly et al., 2022). The phenomenon of single parenthood, where an individual raises and cares for children without the presence or support of a spouse, has become increasingly common in society (Musetti et al., 2024; Thomasen et al., 2023). This situation may involve either fathers (widowers) or mothers (widows) and is often the result of divorce or the death of a partner (Firman et al., 2019; Muharam & Firman, 2022). Being a single parent is not an easy choice, as it frequently entails bearing the educational and emotional responsibilities that are ideally shared between two partners (Nasution & Karneli, 2024). Single parents are often required to fulfill dual roles, such as being both a nurturing parent and a breadwinner

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(Jocson et al., 2023; Kim et al., 2024). Any imbalance or gap in fulfilling one of these roles can lead to psychological and psychomotor issues in children (Hidayat et al., 2025; Ilham et al., 2024; Indika et al., 2023; Padli et al., 2024; Prasetyo et al., 2024; Sari et al., 2023).

Divorce, especially when marked by hostility, often brings profound suffering, similar to the emotional toll caused by the death of a spouse (Neville et al., 2025; Prasetyo et al., 2024; Restoy et al., 2024). Separation, whether due to divorce or death, leaves a significant psychological burden on both the surviving parent and the children (De Luca et al., 2024; Li et al., 2024; Miller-Slough & Dunsmore, 2020). Common issues that arise in single-parent households include economic hardship, educational challenges, psychosexual concerns, disruption of religious routines, shifts in parenting styles, and most prominently, emotional instability in children (Adawiyah & Suaedah, 2022; Deviyanti et al., 2022). Emotional disturbances in adolescents often manifest in various problematic behaviors, such as defying parental authority, unexplained anger, physical fights with peers, lack of respect toward family members, reluctance to study, disobedience, and even stealing (Hidayat et al., 2025; Nyoman et al., 2024; Sari et al., 2025; Sari et al., 2025).

This condition not only occurs in urban areas but is also a common problem in rural areas, including Ramba Village in Sosa Julu District, Padang Lawas Regency. In this village, many teenagers experience emotional disturbances due to the situation of single parents. Early observations suggest that single parents often face mental stress, life demands, and economic limitations, resulting in a lack of attention to communication with children (Braet et al., 2025). Good communication between parents and children significantly impacts children's emotions and mental health, and proper parenting can support the management of emotional disorders (van Driessche et al., 2025). The results of interviews in Ramba Village also indicate that many single parents have difficulty coping with their teens' emotional disorders due to a lack of control, attention, and time to build positive communication and relationships (Casellas et al., 2024). A concrete example can be seen in Susilawati Hasibuan's mother's son, Nur Zakiah Hasibuan, who, since her father's death, has often fought, yelled at her parents, is stubborn, violates the rules, is lazy, and lacks empathy for her mother, who struggles to make a living (Adawiyah & Suaedah, 2022). This corroborates that the loss of attention and mental, moral, and material support from parents significantly affects the emotional stability of adolescents, considering that their emotional state is still labile and explosive. The novelty of this study lies in its integration of a psychobiological perspective with the exploration of single parenting strategies, highlighting how

neurobiological stress responses interact with parenting styles to influence adolescent emotional regulation. This approach bridges behavioral observations with underlying physiological mechanisms, offering a deeper understanding of emotional disorders in single-parent households.

Seeing these problems, this study aims to examine emotional disorders in adolescents raised by single parents, particularly tendencies toward anger when their desires are unmet, often expressed through aggressive behavior. Viewed from a psychobiological perspective, such emotional responses are linked to brain development and stress regulation systems shaped by parenting quality. This qualitative study focuses on: (1) identifying emotional disorders in adolescents with single parents; (2) analyzing parenting styles used to manage these disorders; and (3) exploring supporting and inhibiting factors in the parenting process in Ramba Village, Sosa Julu District, Padang Lawas Regency.

Method

Research Methods

This research employs a qualitative method focused on gaining an in-depth understanding of specific phenomena through diverse perspectives, experiences, and perceptions. It uses descriptive analysis to produce rich and critical data for problem-solving. The approach is descriptive, involving the collection and interpretation of facts. Since the study explores adolescent emotional disorders in Ramba Village, Sosa Julu District, Padang Lawas Regency, it takes the form of a case study—chosen due to the prevalence of emotional disturbances in the area. A psychobiological approach is integrated to explore how parenting practices influence adolescents' emotional regulation mechanisms, particularly through biological stress responses and neural-emotional development. The researcher focuses on the most dominant impacts and selects the site for accessibility and contextual relevance. Data was obtained from informants who could describe the research setting. Primary data came from six single parents (five mothers and one father) with adolescents aged 17–21 experiencing emotional disorders, selected through purposive sampling. Secondly, data included input from adolescents, neighbors, peers, and the village head, to support and enrich the primary data. Most single-parent informants were the result of divorce or separation.

Research Instruments

The data collection techniques used include observation, interviews, and documentation. Observations were conducted directly at the research location to gather information about the problems that

occurred, using non-participant observation methods. In non-participant observations, the researcher was not directly involved in the observed activities but acted as an observer related to the parenting style of single parents in overcoming adolescent emotional disorders. Interviews are a form of direct communication between researchers and respondents, typically conducted in a face-to-face setting, where questions and answers are exchanged. This type of interaction not only captures understandings or ideas, but also feelings, experiences, and emotions. The interview technique used is an unstructured interview, in which the researcher does not use systematic interview guidelines. However, only an outline of questions is provided, thus allowing the interviewer's creativity and producing more in-depth data from adolescents, single parents, close neighbors, community members, peers, and village heads.

Research Stages

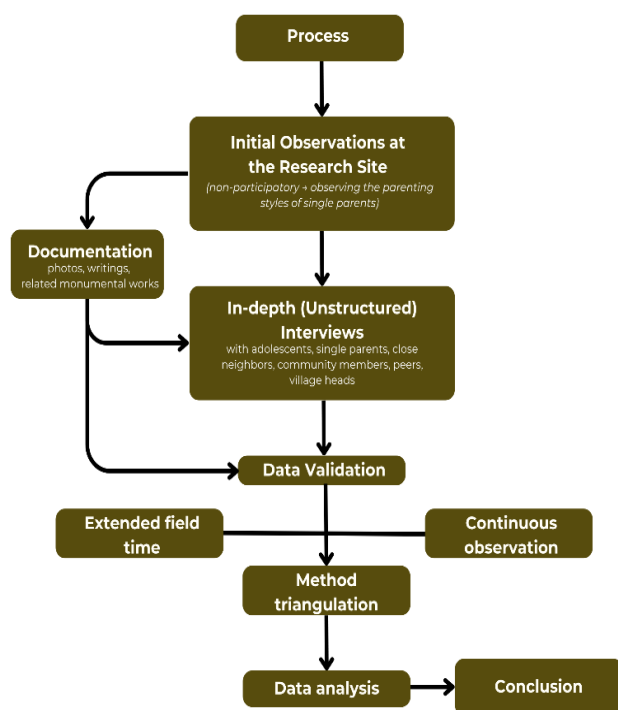


Figure 1. Triangulation Process Flow

In addition, documentation is used to complete the research process, both in the form of images (photos), writings, and relevant monumental works. To ensure the validity of the data, this study employed several techniques, including extending the researcher's participation in the field until data saturation was achieved, as well as diligent observation for careful and continuous analysis. Most importantly, triangulation techniques are used, specifically triangulation methods. The triangulation method involves comparing information or data obtained through different

strategies. This is achieved by adjusting the observation data to align with the results of interviews from primary and secondary data sources, and by integrating the research results with the concepts and theories presented. It also involves comparing observational data with interviews, as well as what informants say in both public and private settings. For more details on the flow of this research, it will be shown in Figure 1.

Data Analysis

The data analysis technique employed in this study is inductive qualitative data analysis. This analysis process involves compiling, searching, and arranging the sequence of data from interviews, observations, and documentation, and then categorizing them accordingly (Holmbom et al., 2025). The main steps in data analysis include data reduction, which involves summarizing and selecting the main things and focusing on important information. Next is the presentation of data, where the reduced data is displayed in the form of a brief description or chart to facilitate understanding. The final step is drawing conclusions, which involves summarizing descriptions to convey a concise understanding.

Result and Discussion

Informant Selection Strategy in Qualitative Research

The context of qualitative research, the success of primary and secondary data collection is highly dependent on the selection of relevant and representative informants. As Suharmini Arikunto stated, research informants are not limited to individuals but also include all forms of responses and interactions appropriate to the study's background. Thus, the selection of informants must consider their capacity to provide in-depth insights into the phenomenon being studied. In this study, primary data sources were focused on ten adolescents aged 17 to 21, who were the main subjects in understanding their psychological dynamics. In addition, the perspectives of six single parents (five single mothers and one single father) are crucial to delve into the context of parenting (Goldberg et al., 2025; Shahdan & Sidek, 2025). To complement and validate this information, secondary data sources were obtained from close neighbors, adolescent peers, and village heads, who are expected to provide a holistic picture of the situation and conditions in Ramba Village, Sosa Julu District, Padang Lawas Regency. The integration of these various sources is crucial to achieve data triangulation, which reinforces the validity of the research findings.

*Emotional Data of Adolescents from Single Parent Families***Table 1.** Data on Single Parents and Adolescent Emotional Disorders

Parents' Names	Divorce	Teen's Name	Age	Emotional Disorders	Long Abandoned
Rosdliyah	Die	Nur Zakiah Hasibuan	21	Angry, Anxious	9 Years
		Mahmud Hasibuan	20	-	9 Years
		Mhd. Fuadi Hasibuan	17	Angry, Anxious	9 Years
Rosmala Dly	Die	Mhd. Rian Hasibuan	18	Angry	7 Years
		Mhd. Habib Hasibuan	17	Stress	7 Years
Haposan Hsb.	Die	Mardiah Hasibuan	20	Anxious	5 Years
		Nur Hidayah Hasibuan	18	Angry, Anxious	5 Years
Sidar Hsb.	Die	Mutharram Nasution	18	Angry, Stressed	7 Years
Risna Hsb.	Die	Sinta	17	Angry, Anxious	5 Years
Rista Nasution	Live	Intan Permata	18	Angry	6 Years

Based on the data on table 1 from interviews and documentation, it was found that six single parents in Ramba Village, Sosa Julu District, Padang Lawas Regency, were the primary informants in this study. Most of them are widows due to divorce or death, while one person is a widow due to a living divorce. The single parents have one to three teenage children who experience various forms of emotional disorders. The age range of adolescents studied was between 17 and 21 years. The most common emotional disorders experienced by adolescents in this study included excessive anger, anxiety, and stress. One of the most prominent examples of cases is Nur Zakiah Hasibuan, a 21-year-old who, since the death of her father, has shown emotional behaviors such as anger and anxiety. The same thing happened to his two brothers, Mahmud and Fuadi, who were both raised by his mother, Rosdliyah, as single parents for the past nine years. This condition indicates that the longer a teenager is left by one of his parents, the greater the potential for emotional instability, especially if it is not balanced with adequate communication and attention. The same phenomenon is also seen in the family of Rosmala Dly, a teacher who is a single parent to her two teenagers, Rian and Habib, who each experience emotional disorders in the form of anger and stress. Although the parents' educational and work backgrounds are pretty good, emotional distress in children arises due to weak control and emotional closeness after losing their father.

Pola Gangguan Emosional pada Remaja dalam Asuhan Orang Tua Tunggal

In general, the pattern of emotional disturbances that occur in adolescents shows a tendency to increase the intensity of negative emotions when they are raised by single parents facing economic and time pressures. Disorders that manifest as attitudes against parents, irritability, laziness in learning, and deviant behavior, such as yelling, are also accompanied by a lack of empathy for the parents' condition. The triggering factor is not only the absence of a father or mother figure, but also weak attention, communication, and inconsistent

parenting patterns. This data indicates that the presence of a complete parental figure and proper parenting have a significant impact on the emotional stability of adolescents. In the context of single parents, the burden of dual roles that must be carried out without the support of a partner is a big challenge in creating a healthy emotional environment for children. Therefore, single parents need to receive social support and mentoring in fostering warm and stable communication and emotional relationships with their children.

Departing from an in-depth picture of the emotional turmoil experienced by adolescents in Ramba Village, Sosa Julu District, which is heavily influenced by the dynamics of single parenting and lack of attention, we need to understand the demographic context that surrounds it. Therefore, Table 1: Population Status Seen from the Number of Population in Ramba Village, Sosa Julu District, Padang Lawas Regency, provides an additional perspective on these emotional findings.

*Demographic Context Population and Gender Inequality***Table 2.** The condition of the population is seen from the number of residents in Ramba Village, Sosa Julu District, Padang Lawas Regency

No.	Gender	Sum
1	Man	87
2	Woman	133
Sum		220

Based on data from Table 2, which presents the population status in Ramba Village, Sosa Julu District, Padang Lawas Regency, it can be seen that the total number of residents in the village is 220 people. Of these, there is a striking gender imbalance, where the female population (133 people) is significantly larger than the male population (87 people). The dominance of this number of women can have various implications, both in the social, economic, and demographic structure of the village. For example, it can affect labor force ratios, family dynamics, or even the availability of mates for certain age groups. For a more comprehensive

understanding, it would be interesting to examine the age distribution and marital status of the population in this village, which can provide a more detailed picture of the demographic structure of Ramba Village as a whole.

After analyzing the demographic distribution of the population by gender in Ramba Village, Sosa Julu District, Padang Lawas Regency, as presented in Table 1, it is essential to deepen our understanding of the community's socio-economic structure. Therefore, the next section will focus on Table 2. The State of Livelihood in Ramba Village, Sosa Julu District, Padang Lawas Regency, will describe the variety of professions and dominant economic activities that support the residents' lives.

Livelihood Structure of the Population

Table 3. Livelihood Situation in Ramba Village, Sosa Julu District, Padang Lawas Regency

No.	Job Type	Sum
1	Farmer/Planter	102
2	Merchant	12
3	Civil Servants and Honorary Employees	18
4	Odd Jobs	88
Sum		220

Table 3 presents an overview of the livelihoods of the people in Ramba Village, Sosa Julu District, Padang Lawas Regency, which collectively include 220 individuals. This data clearly shows that the agriculture and plantation sectors are the backbone of the village economy, with 102 residents, or almost half of the total population, working as farmers or planters. This figure illustrates the high dependence of the community on the primary sector, likely due to the village's geographical conditions, which are well-suited for agricultural activities. Additionally, odd jobs occupy the second position, with 88 individuals. This significant proportion can hint at several things. There may be flexibility in the rural labor market, or, on the other hand, the limited availability of stable formal employment may lead many residents to rely on non-permanent jobs. The presence of 18 civil servants and honorary employees demonstrates the community's participation in the public sector, which may provide a source of income stability. Lastly, the trade sector only involves 12 people, indicating that commercial activities may not yet be a highly developed or dominant sector in Ramba Village. Overall, this livelihood data supports the suspicion that Ramba Village is an agrarian community with diverse economic dynamics yet remains dominated by the traditional and informal sectors.

After analyzing the distribution of livelihoods that support the economy of Ramba Village residents, ranging from the agricultural sector to odd jobs, we now

turn to another fundamental aspect that contributes to shaping the quality of human resources in the region: the level of education. Awareness of the importance of formal education for 9 years in shaping the nation's life is the basis for understanding the data that will be presented next. Therefore, let us review Table 3. The level of education in Ramba Village, Sosa Julu District, Padang Lawas Regency, will outline the educational profile of the residents in this village.

Community Education Level

Table 4. Education level in Ramba Village, Sosa Julu District, Padang Lawas Regency

No.	Education Level	Man	Woman
1	Not yet in school	20	40
2	Primary school	17	25
3	Junior High School	20	28
4	High School/High School	18	20
5	Bachelor's/Diploma	12	20

Table 4 presents data on the education level of residents in Ramba Village, Sosa Julu District, Padang Lawas Regency, categorized by gender. Several interesting patterns are evident from the data. Overall, the number of out-of-school residents is the highest, with 20 males and 40 females, indicating that a total of 60 people in the village have never received formal education. This figure is a significant concern because it can significantly impact access to information, job opportunities, and overall quality of life. At the primary education level, 17 boys and 25 girls completed elementary school, indicating a relatively high participation rate at the initial level. However, when moving to the junior high school/junior high school level, there was a slight increase in women (28 people) compared to men (20 people). This trend continues to the high school/high school level, with 20 girls and 18 boys. This could indicate that women in Ramba Village have a slightly greater motivation or opportunity to pursue secondary education than men, or that other demographic factors are at play. At the Bachelor's/Diploma level, there are 12 males and 20 females. This figure, although smaller than the previous level, indicates that some members of the population are accessing higher education. Interestingly, the number of women who reach the Bachelor's or diploma level is higher than that of men, reflecting the potential to improve the quality of female human resources in the village. In general, this pattern highlights that although schools at the middle and high levels are aware of the importance of education, many residents have not completed formal education at all. Additionally, there is a tendency for women in Ramba Village to pursue higher education beyond that of men.

Forms of Emotional Disorders Experienced by Teenagers

This study found that adolescents in Ramba Village, Sosa Julu District, Padang Lawas Regency, who were cared for by single parents, experienced various major emotional disorders, which included anger, anxiety, and stress. Of the ten adolescents from whom the primary data were sourced, five showed anger mood disorders, three experienced anxiety, and two adolescents experienced stress, with mild depression that had lasted for seven years after their father's abandonment (Bai et al., 2025; Malmström et al., 2024; Romano & Heron, 2021; Sari, Rahmadhanti, et al., 2025; Selviani et al., 2023). Unfulfilled desires, feelings of neglect, and responses to hurtful words or actions from others often trigger this emotional anger disorder in adolescents. This anger can also be an innate trait of parents. Teenage boys usually vent their anger by shouting until they are heard by their neighbors, even hitting people they dislike (Ding et al., 2022). Meanwhile, adolescent girls tend to vent their anger by being silent, going on strike, passing away, being alone, and showing a high sensitivity to what others say. Single parents' preoccupation with making a living often reduces the time for attention to the child, which contributes to feelings of neglect and emotional instability in adolescents.

Causal Factors of Adolescent Emotional Disorder in Single Parent Families

Anxiety disorder in single-parent adolescents manifests as excessive worry, a tendency to be silent when having problems, and a fear of disappointing or losing a parent again, especially related to education and living needs (Holmbom et al., 2025; Lee et al., 2024). This anxiety is also caused by feelings of inferiority and feeling small compared to peers who have complete parents. Stress disorders are experienced by adolescents when the demands placed on them exceed their available personal and social resources (Katz et al., 2025). The loss of a father figure in their lives becomes a trigger for deep stress, causing a loss of enthusiasm for learning and low motivation for the future. This stress even encourages some teens to engage in negative behaviors such as smoking secretly, in an attempt to reduce the burden on the mind.

Supporting and Hindering Factors of Single Parent Parenting

The factors that affect the ability of single parents to cope with adolescent emotional disorders are divided into supporting factors and inhibiting factors (Iwanski et al., 2025). Supporting factors include the role of extended family members, such as uncles and grandmothers, who provide support, financial assistance, advice, and a place for children to share stories. A conducive social environment is also a necessary support, as it provides

opportunities for children to interact, channel their talents, and develop good social values (Sadoughi, 2024). The inhibiting factors include a low level of parental education, which can limit their understanding of children's emotional problems and lead them to entrust children's education to other institutions (K. Q. Lin et al., 2024). The unscheduled busyness of single parents is also a significant obstacle, as they must work hard to meet the family's economic needs, resulting in limited time and attention for their children, which impacts a lack of supervision and education. Finally, financial constraints are a significant hindrance, forcing single parents to work harder, which can drain the energy and time that should be allocated to educating and nurturing their children.

Parenting Dynamics: Authoritarian VS Democratic

The results of this study directly answer the problem of the type of emotional disorder in single-parent adolescents, the parenting style applied, and the supporting and inhibiting factors they experience (Cahayatiningsih et al., 2022). The findings suggest that single-parent family dynamics strongly influence adolescent emotional stability, which often manifests itself in the form of anger, anxiety, and stress (Lim et al., 2023). The interpretation of these findings is that the absence of a single parent figure, coupled with the double burden borne by single parents, creates an environment that is prone to emotional problems in adolescents. Feelings of being neglected because parents are busy making a living, worries about the future, and comparisons with peers who have complete families all contribute to the observed emotional symptoms. In the context of discipline approaches and emotional communication, this study highlights the use of authoritarian and democratic parenting (Miller-Slough & Dunsmore, 2023). Authoritarian parenting, which is described as an approach in which parents make almost all decisions and children are forced to obey without question, appears to be implemented by some single parents as an attempt to control and protect children from negative influences. However, these findings critically reflect that despite good intentions, this approach is often ineffective in addressing anger disorders in adolescents and can even trigger resistance and non-compliance. Adolescents, during the transition to adulthood, require understanding and space for expression, which is often lacking in authoritarian parenting (He et al., 2025). This can exacerbate emotional tension and hinder the development of healthy communication.

The Role of External Social Support in Adolescent Emotional Well-Being

In contrast, democratic parenting, which emphasizes open communication, discussion, and the involvement of children in decision-making, is more successful in managing adolescent emotions. This pattern aligns with the principle that children who feel listened to and valued tend to exhibit better self-control, responsibility, and openness towards their parents (Restoy et al., 2024). The application of democratic parenting by single parents, even in limited time due to busyness, can foster confidence and comfort in children, making them more emotionally stable (Xavier et al., 2024). It integrates the findings with the understanding that effective communication and emotional support are key to adolescent psychological well-being, even in unconventional family structures (Thomassen et al., 2023). Social support, especially from extended family and the environment, plays a crucial role as a supporting factor. These findings suggest that the presence of caring uncles, grandmothers, and communities can ease the burden of single parents and provide an emotional and practical support network for adolescents. This is consistent with the literature, which states that external social support is crucial for single parents in addressing existing challenges, instilling social values, and facilitating positive interactions among children in society (Neville et al., 2025; Shahdan & Sidek, 2025).

Psychosocial and Neurobiological Challenges in Single Adolescent Foster Care

However, the study also highlights the significant barriers faced by single parents. Low levels of education and economic limitations are often intertwined, forcing parents to prioritize earning a living, which reduces the time and energy available to nurture their children—especially in the area of emotional development (Braet et al., 2025). This unscheduled busyness directly impacts the quality of care and supervision, potentially contributing to negative emotional and behavioral outcomes in adolescents (Bai et al., 2025). From a psychobiological perspective, chronic stress and lack of emotional attunement from parents can disrupt the adolescent's neurobiological systems related to emotion regulation, such as heightened cortisol levels and imbalances in the limbic system. These findings reinforce that socioeconomic constraints not only affect parenting behavior but may also shape the child's biological vulnerability to emotional dysregulation. Moreover, parents with higher educational backgrounds may have better access to emotional knowledge and coping strategies.

Conclusion

From a psychobiological perspective, the emotional disturbances experienced by adolescents—such as anger, anxiety, and stress—are closely linked to neurobiological mechanisms influenced by parenting quality, emotional responsiveness, and environmental stability. In this study, adolescents raised by single parents in Ramba Village were found to be particularly vulnerable due to disruptions in attachment, inconsistent caregiving, and high parental stress, all of which affect the brain's stress-regulation systems and emotional control circuits. Among the parenting styles observed, democratic parenting—characterized by open communication and adolescent involvement in decision-making—proved more supportive of emotional regulation and resilience compared to authoritarian approaches. While this parenting style can buffer psychobiological stress responses, its effectiveness is often supported by family and social networks, and hindered by low parental education, economic constraints, and limited time. Therefore, it is essential for single parents to adopt democratic parenting strategies that nurture emotional security and reduce chronic stress in adolescents. Future research should prioritize interventions grounded in psychobiological principles to better address emotional and neurological development in adolescents from single-parent households across varying cultural and socioeconomic backgrounds.

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Conflicts of Interest

The authors declare no conflict of interest.

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