

Review

Psychosocial Adjustment During Adolescence: The Role of Individual Differences

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Abstract

Adolescence, one of the most crucial developmental phases in life, was previously commonly considered a vulnerable period, characterized especially by risk factors that can lead to a variety of internalizing or externalizing problems. The present work goes beyond the classical view of adolescence as a vulnerable stage by supporting a more recent conceptualization of adolescence as a “window of opportunities”, driven by the interplay and influences between individual and environmental factors. The authors considered individual differences related to temperament and personality to account for individual factors, and school, family, and peer support as social factors. Moreover, the authors specified the contexts in which individual differences are particularly relevant for youths’ adjustment and psychological well-being, considering the main adaptive and maladaptive facets that adolescent development can assume. Lastly, the authors also considered the main intervention approaches to prevent risks and foster positive development in youths over time, especially accounting for social and environmental resources accessible to adolescents.

Keywords: adolescence; adjustment; psychological well-being; individual differences; temperament; personality; social support



Academic Editor: Kum Fai Yuen

Received: 26 July 2025

Revised: 6 October 2025

Accepted: 13 October 2025

Published: 14 October 2025

Citation: Favini, A.; Lunetti, C.; Tommaselli, M.C.; Quarto, T. Psychosocial Adjustment During Adolescence: The Role of Individual Differences. *Encyclopedia* **2025**, *5*, 166. <https://doi.org/10.3390/encyclopedia5040166>

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1. Potentialities and Challenges of Adolescence

Adolescence is one of the most complex and layered developmental periods in life, which current research situates between the ages of ten and nineteen years old (e.g., [1]) and is characterized by profound and rapid changes in biological, cognitive, emotional, and relational areas [2]. This phase is not a homogeneous period, as the kind of developmental trajectories can vary according to individual characteristics and environmental influences [3,4]. Thus, according to a positive view of individual development and socio-cognitive approaches (e.g., [5]), individuals, as adolescents, do not passively change in their lives; instead, they can actively model and influence them, contributing to restructuring identity and socio-relational aspects in response to environmental and situational demands [6]. The way through which these transactions happen, and the valence of individual developmental pathways, can affect concurrent and longitudinal well-being and adjustment [1,6].

At a descriptive level, research on adolescence evidenced the presence of several specific stages through which adolescence can be divided, such as puberty (9–10 years old), early adolescence (11–13 years old), middle adolescence (14–17 years old), and late adolescence (17–19 years old), and each of them is characterized by specific transactions in

terms of relational, emotional, and cognitive development [2]. During these stages, youths undergo a profound cerebral reorganization, particularly in the prefrontal and limbic areas, which modulate decision-making abilities, self-regulation, emotional regulation, and social functioning [7,8]. In particular, the first stage is characterized especially by changes in emotional-cognitive domain, and in biological transformation; during early adolescence, temperamental bases for emotionality started to stabilize; during middle adolescence, changes in self-regulation and social functioning are predominant; while during late adolescence all the changes and modifications of the previous stages have to integrate in a stable and unified trajectory [2,3,8].

At the neurobiological level, adolescence is characterized by a significant reorganization of the Central Nervous System, which leads to the maturation of the prefrontal cortex—the hub of executive functions—and occurs at a slower rate than the limbic system—the hub of emotionality and emotion regulation [9]. During puberty, there is a significant activation of the HPG system (i.e., Hypothalamic–Pituitary–Gonadal system), leading to an increase in the production of sexual hormones that influence behavioral and physical changes [10]. Recent studies have demonstrated that cerebral maturation follows a distinct pathway from psycho-physical development, as the impulsivity and reward sensitivity systems are activated earlier, while the cognitive control system, related to the prefrontal cortex, fully develops during late adolescence and early adulthood [11]. This temporary imbalance leads to an increase in impulsivity, emotional vulnerability, and sensitivity to environmental cues, especially among those who receive emotional and relational information (e.g., [8]). As such, emotional and self-regulation development are closely connected to this neurological reorganization, which influences not only temperamental characteristics but also more fine-grained abilities, such as decision-making, risk-taking, perceptual sensitivity, and social-information processing [11].

Contextually, youth develop more complex and novel cognitive strategies, as thoughts become more abstract and reflective, although these aspects do not always align with emotional developmental pathways, serving as a further imbalance factor [8,12]. Self-awareness, as well as awareness of personal identity conflicts and dissonances between the Self and the environment, can influence these cognitive processes, leading adolescents to develop internal tensions due to a lack of self-regulation and integration abilities [13]. At the identity level, during adolescence, there is a consolidation of future adult identity formation [13]. Abilities such as autonomy, development of a stable self-image, empathy, and emotional and affective regulation are crucial, and they are influenced by individual differences and significant socio-relational contexts, including family, school, and peer contexts [13,14].

At a psychological level, youths are engaged in a crucial process of exploration and identity consolidation, which involves the reorganization of their relational behaviors with family and peer relations [14,15]. The relational reorganization is interlinked with the development of autonomy-granting and perspective-taking [7]. The social dimension becomes crucial because peer groups serve as a reference for self-evaluation and behavioral experimentation, significantly influencing individual choices and behaviors, especially in risky situations (e.g., [16]). Emotional functioning is another crucial aspect, as it can significantly influence decision-making [11]. In addition, peers may serve as a vehicle for emotion regulation, and the presence of peers may influence the tendency to engage in both pleasing and risky experiences, thereby inhibiting the evaluation of consequences [17,18].

Thus, individual differences play a fundamental role in adolescent changes and transformation over time, especially those related to personality and temperamental characteristics (e.g., [3,19]). Temperamental dimensions, observable from the very beginning of life, reflect neurobiological dispositions that are predominantly stable during infancy and

childhood, helping children regulate their responses to environmental stimulation [20,21]. On the other hand, personality is a more complex construct that develops from the interaction between temperamental dispositions and relational or experiential situations, and progressively expands over the life course [3]. Research has firmly demonstrated that temperamental characteristics, such as effortful control (i.e., the voluntary self-regulatory abilities), emotional reactivity, and individual orientation toward social approach, play a fundamental role in psychological well-being, also affecting the quality of interpersonal relationships and academic achievement (e.g., [3,22,23]). In this sense, temperament and personality can act as protective or vulnerability factors, depending on the context and individual differences encountered in dealing with specific situations [3,23].

Therefore, the study of individual differences throughout adolescence is not only a theoretical issue, but also a practical need, as a vehicle to promote more effective clinical, preventive, and educational programs [23,24]. Moving research strengths in this direction, individual differences may serve as a starting point to enhance and sustain individual development from childhood through adulthood [1,2,19]. These strengths may facilitate considering adolescence as a phase of plasticity, not only a vulnerable developmental period, in which adopting a systemic and integrated approach is crucial to sustain individual potentiality and specific life contexts [2,11]. In this view, the promotion of socio-emotional competences in adolescents is the key, supporting the idea that adolescence may serve as a “window of opportunities” for individuals, in which clinicians and researchers may operate to prevent the development of maladaptive pathways over time [1,25].

Novel Approaches to Individual Differences

The person-oriented approach represents a crucial turning point in personality and developmental research, as this view focuses not on single traits, but on configurations of characteristics over the life course [26]. Unlike variable-centered methods, which analyze each dimension separately, person-oriented methods identify patterns of psychological profiles, emphasizing the complexity of trait interactions and their manifestation [27]. During adolescence, this perspective enables the examination of individual pattern development, offering more specific information on the likelihood of experiencing maladjustment (e.g., [28,29]). Starting from the pioneering works by Block and Block [30], in developmental studies, research identified three main patterns (e.g., [31,32]):

- (a) An adjusted pattern, characterized by high self-regulation, low negative emotionality, adequate extraversion and activity levels, and optimal affiliation toward others.
- (b) An overcontrolled pattern, characterized by a tendency for inhibition and social withdrawal, very high controlling levels, and relationships and emotional issues, which is mainly associated with internalizing problems, such as anxiety, panic disorders, depressive symptoms, and isolation.
- (c) An undercontrolled pattern, characterized by significant issues in self-regulation, high reactivity and motor activation, attention deficit, and negative reactive emotions, associated with impulsive and potentially risky behavioral responses, which mainly manifest externalizing problems, such as aggressive or antisocial conduct, excessive or addictive behaviors, disruptive behaviors, and academic maladjustment.

These patterns are especially sensitive to individual experiences and environmental influences, and their early identification may serve as a starting point for implementing tailored preventive interventions that can support individual resources in containing and monitoring vulnerabilities [28,32,33].

The study of individual differences using this lens represents a fundamental aspect for adequately understanding the variety of feasible individual pathways and distinguishing between adaptive and maladaptive trajectories [19,28,32]. Adolescents are navigating the

interplay between their predispositions and environmental influences, including family, school, and peers, that shape their development [3]. The identification of personality patterns enables researchers to describe individual differences in developmental trajectories, design tailored educational, preventive, or promotive interventions, and support youths' resilience and the expression of their potential [19,23,34]. The integration of a person-centered approach with a lifespan perspective can provide significant tools for observing, understanding, and supporting adolescents, thereby enhancing the uniqueness of individual trajectories [11,19,23,35].

2. The Development of Individual Differences During Adolescence

As stated above, the study of individual differences, in terms of temperamental and personality characteristics during adolescence, is not only a theoretical requirement but fundamental for practical interventions in clinical, preventive, and educational contexts (e.g., [26,33]). Understanding individual differences throughout the life course, which can follow complex developmental trajectories, is crucial for designing and implementing effective interventions and programs that empower individual resources and promote developmental processes (e.g., [15,36]). The joint analysis of temperament and personality during development enables researchers and clinicians to understand the complex interplay between individual dispositions and environmental factors, which inform models of pathways of functioning [23,34].

Considering individual differences related to temperament, this dimension is traditionally considered as the set of individual dispositions that are biologically and genetically determined, regulating parameters of emotional reactivity and behavioral responses [20]. These dispositions emerge earlier, during the first months of life, and evidence great relative stability over the lifespan [21,23]. Additionally, individual dispositions interact with environmental and educational experiences, affecting developmental pathways [15,19]. These basic dispositions provide the neurobiological coordinates through which personality develops [8,19].

Personality represents a more complex and broader dimension, organized into traits, motivations, beliefs, emotions, and behaviors, which orient perception, thoughts, and social interactions [34,37]. However, personality is not merely an extension of temperament, but a complex system integrated in a continuous developmental process, shaped by significant relationships and individual narratives, through processes of assimilation and social accommodation [3,34]. In this sense, temperament conceives the automatic, innate, and neurobiological aspects of human functioning [19,21], while personality is the result of a psychosocial, cognitive, and narrative process that can be reorganized, especially during crucial developmental periods, such as adolescence [23,38]. During adolescence, emotional and behavioral reactions tended to intensify in their manifestations due to the new affective and relational challenges [3,23]. At the same time, personality maturation leads to the organization of more complex traits, such as self-monitoring, planning abilities, and identity coherence [14,23]. Longitudinal evidence suggests that issues in self-regulation or high emotional reactivity, especially when shown at earlier stages, can predispose youth to manifest later maladaptive personality patterns [19,22,39].

2.1. Theoretical Models of Individual Differences

The literature has evidenced three main approaches to studying individual differences [40]: the temperamental model by Rothbart and colleagues (e.g., [20,21]), the psychobiological model by Cloninger (e.g., [41]), and the factorial approach of the Five-Factor Model (e.g., [42]). Although these three approaches originated from very different epistemic

premises, all three demonstrated the fundamental role of emotional-behavioral dimensions and self-regulatory abilities in the development of personality [40].

The model proposed by Rothbart conceives temperament as a synthesis of innate dispositions related to reactivity and self-regulation, which emerge earlier in infancy [20,39]. In this sense, three basic and interconnected dimensions of temperament define how the child explores the environment, reacts to internal and external stimulation, and regulates individual impulses [21]. The first dimension refers to Extraversion/Surgency, which reflects the tendency for novelty seeking and engaging in intense social interactions [21]. At the neurobiological level, an active dopaminergic system can sustain higher motor activity and predispose individuals to positive affectivity, which is characterized by being more enthusiastic, more prone to engaging in novel situations, and easily establishing new friendships [21,43]. The dimension of Negative Affectivity reflects the tendency to be susceptible to negative and/or intense stimuli [21]. Neurobiologically, this trait is associated with the overactivation of limbic structures, which influences the intensity of negative emotions such as anger, anxiety, or frustration, and requires the mediation of the external environment, acting as a containment mechanism [8,9,21,43]. Lastly, Effortful Control reflects the ability to inhibit impulse responses, as well as to sustain attentional efforts on selected tasks [21]. At the neurobiological level, this trait reflects the mature development of prefrontal areas, which enables children to critically reflect before acting, persevere despite distractions, and adapt effortfully to cognitive and social challenges and demands [21,43]. The presence of these three basic temperamental facets across cultures and times was firmly supported by longitudinal and cross-cultural studies [44].

The model proposed by Cloninger and colleagues, from a different perspective, evidenced the differences between temperament and character [45]. In this sense, temperament is automatic and biologically determined, while character develops later and interacts with individual experiences and self-reflective mechanisms [40,41]. The fundamental temperamental dimensions of this model are Novelty Seeking, Harm Avoidance, Reward Dependence, and Persistence [45]. In addition, the character dimensions of Self-directedness, Cooperativeness, and Self-transcendence reflect the ability to define and achieve personal goals (i.e., Self-directedness), with empathy and trust in others (i.e., Cooperativeness), and with openness to wider moral values (i.e., Self-transcendence) [45]. These dimensions develop and stabilize through experience and self-reflection, as they involve the frontal and limbic areas that pertain to the construction of the Self and the moral regulation of behaviors [9,41].

The Five-Factor Model (i.e., FFM) demonstrates the centrality of personality factors in individual development and functioning across various contexts and situations [34]. This model considered five basic dimensions of personality, which were identified through psycho-lexical approaches and factor analysis [42,46]. The domain of Openness reflects predisposition toward non-conventional exploration and the use of flexible reasoning mechanisms; these individuals exhibit high curiosity about arts and cultures, the ability to tolerate ambiguity, and a tendency to discuss solid principles and paradigms [38,40]. Conscientiousness reflects the tendency to organize behaviors in pursuit of long-term goals and to translate personal intentions into effective actions toward active planning, attention to detail, and perseverance against adversities [38,46]. Extraversion describes an orientation toward social and emotional stimulations with high intensity, as these individuals frequently engage in social interactions, show high communicative skills, and prefer dynamic and crowded contexts [38,40]. Agreeableness concerns interpersonal relationships, especially those characterized by cooperation and reciprocal trust: these individuals possess higher empathy, tend to seek social harmony and altruism, and are easily able to establish collaborative and stable relationships [40,46]. Lastly, Neuroticism conceives the tendency to

manifest persistent negative emotional responses, such as anxiety, frustration, and frequent mood changes; on one hand, this trait leads to high emotional and stress susceptibility, increasing maladjustment, but on the other hand, neuroticism offers the possibility to deeply understand internal emotional functioning, and eventually, predispose specific coping strategies [38,40]. Developmental and personality research benefits significantly from the FFM, due to its exhaustiveness in describing personality structure and its developmental pathways, and because a variety of studies have confirmed the presence of these traits from a very early stage, despite cross-cultural studies sometimes failing to identify all five personality dimensions in collectivistic cultures (e.g., [28,31,46]). Thus, numerous studies have demonstrated a strong link and predictive power of the FFM with indicators of adjustment and maladjustment, both cross-sectionally and longitudinally (e.g., [47]).

In sum, despite the conceptual and theoretical differences in the above-described models of individual differences, all three models evidenced the importance of regulatory dimensions (such as effortful control, conscientiousness, or persistence), emotional dimensions (such as neuroticism or emotionality), and motivational dimensions (such as novelty seeking, surgency, or self-directedness) longitudinally and cross-culturally [40,44]. These constructs during adolescence are crucial for understanding the plasticity of personality, as well as its interactions with environment, and to evidence specific patterns that can increase or decrease vulnerability for maladjustment [11,23,24]. Table 1 summarizes the connections among the temperamental and personality theoretical models mentioned above.

Table 1. Basic individual differences and common foundations: Summary of different models.

Individual Characteristic	Rothbart's Model	Cloninger's Model	Five-Factor Model
<i>Emotionality (negative emotions)</i>	Negative Affect	Harm Avoidance	Emotional Stability/Neuroticism
<i>Activation</i>	Extraversion/Surgency	Novelty Seeking Reward Dependence	Energy/Extraversion
<i>Self-regulation</i>	Effortful Control	Self-directedness Persistence Self-transcendence	Conscientiousness
<i>Relations</i>	Surgency/Affiliation	Cooperation	Agreeableness
<i>Openness and Intellect</i>	Extraversion/Surgency	Novelty Seeking Self-transcendence	Openness Conscientiousness

2.2. Individual Differences and Adolescence

Adolescence is a developmental phase characterized by a significant temperamental reorganization, which depends on interactions between neurobiological modifications and changing life contexts [8,11,48]. During this period, the prefrontal cortex—the core of executive functions and self-regulation—develops more slowly than the limbic system, which is the core of emotion processing and experiencing [9,11]. As the authors stated in the introduction, this imbalance may lead to an increase in impulsivity and emotional lability and can affect bio-psycho-social vulnerability [11]. Temperament, more anchored to biological predispositions, tends to increase in its permeability to the context during the early stages of adolescence [49]. Negative affectivity tends to increase normatively due to hormone fluctuations and social pressures [11,19]. Adolescents with high emotional reactivity are more prone to dysregulated responses in psychosocially stressful situations [43]. At the same time, this period is characterized by an increase in effortful control [19,24]. These developmental changes are closely associated with the maturation of the prefrontal cortex, as the increase in frontal-limbic connections leads to improvements in executive functions [9,50,51]. In this scenario, Effortful Control can act as a compensatory mech-

anism, mitigating maladaptive manifestations related to negative affectivity [19,24]. As demonstrated by empirical evidence, adolescents with high effortful control can handle emotion regulation tasks more efficiently and exhibit lower risks of engaging in risky behaviors (e.g., [52,53]). As regards personality traits, although they tended to maintain a relative inter-individual coherence, they are also sensitive and modeled by experiences: a great body of longitudinal studies have demonstrated that, on average, adolescents show increases in conscientiousness as their increase in planning skills and moral orientation and decreases in neuroticism as their increase in emotional stability [54].

During adolescence, a phase of identity formation and reorganization, personality characteristics must deal with complex challenges, including achieving autonomy from the family of origin, the development and the experience of peer relationships, the definition of a personal life plan, and the integration between the ideal Self and the actual Self [14,55]. These challenges represent personality maturation and reflect both cerebral maturation—especially in the frontal-limbic areas—, and social maturation—especially regarding the assumption of complex social roles [9,11,56]. However, the maturation of personality is not a linear or homogeneous pathway, as significant life events (i.e., griefs, family conflicts, divorce, academic failures) can facilitate adjustment, or, on the contrary, act as vulnerability factors which may increase the likelihood of manifesting maladaptive patterns of functioning [19,56]. Youth are dealing with the interplay between stability trends and transformations of personality, which are influenced by identity and social demands [2,48,56]. In this sense, transactional mechanisms are crucial [3]: personality traits orient choices, which, at the same time, are influenced and re-modeled by life experiences. These mechanisms are especially evident considering the regulatory characteristics of individual functioning, such as conscientiousness, effortful control, and neuroticism, which are directly influenced by family climate, peer relationships, and academic adjustment [23,57]. The autobiographical narration is crucial in this sense, as it can enhance the sense of personal coherence, contributing to the effective integration of personality traits with identity, and making personality not only a set of predetermined, measurable characteristics, but also a real narrative aspect in an ongoing developmental process [37].

This vision of individual differences aligns with the lifespan approach (e.g., [3,35,55]). This approach highlights the dynamic nature of personality, which is influenced and modifiable throughout life, particularly during transitional periods, such as adolescence [19,55]. The lifespan perspective goes beyond the conceptualization of personality as a rigid and immutable aspect of human functioning, focusing on its plasticity and evolutionary aspects, which lead to a broader understanding of individual differences as sets of potentialities that may predispose or protect individuals from developing maladaptive patterns [15,35]. According to this approach, individual agency plays a crucial role, as subjective perceptions of experiences, coping strategies, and self-reflection abilities contribute to actively modeling individual responses to developmental demands [34]. Autobiographical narration and mentalization can influence individual conceptualization of temperamental characteristics, according to a coherent and stable sense of the Self [37].

Considering adolescence as a “developmental window” means that clinicians and researchers can tailor their interventions to properly consider individual differences [33,48]. Accordingly, the empowerment of self-regulatory abilities may include family support, school climate, and relational adjustment, which are important protective factors for maladjustment [23,54]. In addition, there is a pressing need to consider and understand the complex connections between biological predisposition and the impact of psychosocial contexts, to promote the adaptive development of individual differences throughout adolescence [11,23,55].

2.3. Individual Differences and Environment

Although personality and temperamental individual differences represent dispositional systems that exhibit a certain level of stability across time and contexts, their expression is continually shaped by environmental influences (e.g., [3,19,56]). In this sense, if we consider adolescence as a phase of developmental plasticity and potential vulnerability, this assumption requires the adoption of an integrated and systematic approach that considers both individual dispositions and environmental influences [3,23]. The transactional perspective [58] suggests that the ongoing interaction between individual traits and the contexts of family, school, and peers may affect psychosocial adjustment during adolescence. Additionally, the “goodness-of-fit” assumption [59] posits that individual well-being and adjustment depend on the quality of synchrony between temperamental characteristics and environmental demands. A social context that identifies and supports individual differences can positively impact the development of self-regulatory and socio-emotional competencies; in contrast, a maladaptive context that does not validate individual coherence can amplify vulnerabilities and lead to negative outcomes [6,60].

Longitudinal evidence has shown that high levels of negative emotionality, when managed in coherent and supportive family contexts, are associated with better adjustment in early and middle adolescence, whereas intrusive families can lead to emotional and behavioral problems in youths (e.g., [61,62]). As previously mentioned, during adolescence, the social context becomes crucial, making youth more sensitive to peer influences; relationships with peers assume the role of regulating mirrors, contributing to the construction of identity and the social Self [14,63,64]. Youths interpret and select environments actively, adopting mainly three types of environmental transactions (e.g., [65]): (a) reactive, through which youths activate responses to environments that are in line with their traits; (b) evocative, through which personality traits elicit environmental responses that are coherent with the trait itself; (c) proactive, through which youths actively select environment that are in line with their traits. Across time, these environmental transactions may cause modifications of personality dispositions, increasing their stability, or, oppositely, supporting their change [19,56,65].

Adolescents with at-risk temperamental patterns (e.g., low effortful control and high negative emotionality) are more sensitive to their environment; for all these cases, tailored interventions and protective social contexts can positively impact their developmental pathways, according to the differential susceptibility hypothesis [52,66]. This effect can be observed not only in offline contexts but also online: youths with high impulsivity and low self-regulation tend to be more vulnerable to addictive or excessive use of social networks and online gaming, which may cause maladjustment in other significant areas, such as academic performance or the quality of friendship [67,68]. Several findings evidenced how warm family relationships, positive school climates, and prosocial peer context can enhance the development of self-regulation and reduce aggressive behaviors [61,69]. Conversely, in chronic stress conditions, impairments in self-regulatory abilities can occur, which may exacerbate temperamental issues [69,70].

Several social contexts are fundamental during adolescence [63,71,72]: family and familiar relationships, school environment, peer relationships, and intimate relationships.

2.3.1. Family Context

Family represents the primary social context for the early development of temperamental dispositions, in which children and adolescents may seek models and norms for emotion regulation and can learn mechanisms for emotional understanding and expression [59,72,73]. Although during adolescence the process of autonomy becomes crucial, the family maintains its fundamental role as an external regulator for the development

of emerging personality traits and emotional stability [21]. Research has supported the differential role of parenting styles in youths' adjustment, even in cross-cultural studies, which have focused on the distinct effects of specific parenting strategies across different cultural contexts [73,74]. For example, authoritative parenting practices showed different effectiveness levels in collectivistic and individualistic cultures [73]. However, it is essential to consider not only parenting styles but also the temperamental characteristics of parents, as a large body of studies has attested to how parental temperament can crucially affect offspring personality development (e.g., [69,75]). Interactions between parental and filial temperament can be viewed as a co-regulation mechanism that facilitates the exacerbation or minimization of personality expression [62]. When there is coherence among temperamental dispositions of family members, family relationships are characterized by reciprocal comprehension, emotional containment, and support, which can facilitate the development of secure attachment styles, as well as the development of behavioral and socio-emotional abilities [61]. This relational coherence enhances adequate levels of emotional self-efficacy, as children and youth feel validated and understood [76]. In contrast, when there is a dissonance between parental and filial temperament, communicative distortions and conflicts may arise: youths with high reactivity who face non-empathetic parents can perceive feelings of discomfort and invalidation, which leads to an increased risk for internalizing problems [73,75]. Similarly, impulsive parents with impairments in self-regulation represent dysfunctional behavioral models, especially for the development of effective emotion-regulation strategies, which may exacerbate emotional difficulties [75,77,78]. Family climate, viewed as the set of values, implicit rules, conflict management strategies, and emotional cohesion, can be a protective or a vulnerability factor [63,79]. Families characterized by open communication, reciprocal support, and joint emotion regulation can facilitate the development of effective and flexible coping strategies in children across cultures, even in the presence of temperamental issues [73,80]. On the other hand, families characterized by maladaptive organization and rigid parenting practices can limit the expression of temperament and decrease the effectiveness of effortful control in regulating negative emotionality [79–81]. Family can also significantly impact social development in children [60,73]. Within the family context, children learn social behaviors—which are also culturally mediated, relational styles, emotional management, and conflict resolution strategies, which are later incorporated into their personality disposition during adolescence [63,73,76,77]. This modeling process makes the family climate an interpretative lens of environments, which persistently and continuously influence adolescent developmental pathways [58,63].

2.3.2. School Context

Another crucial context is the school environment, which is not only responsible for formal education—especially in collectivistic cultures, but also a significant social context—especially in individualistic cultures [18,71]. Within the school context, children and youths test a variety of relationships, including vertical relationships (i.e., with teachers and school staff), horizontal relationships (i.e., with peers), and face daily challenges related to norms and performance [71,82]. Therefore, the school represents a pivotal point through which we can observe how temperament and personality are shaped by the social and emotional environment across cultures [82,83]. At-risk patterns of functioning, characterized by high emotionality and a lack of self-regulation, can exhibit lower social competencies, higher behavioral problems, and lower academic achievement, in both individualistic and collectivistic cultures (e.g., [22,82]). In these cases, impairments in frustration management, anger, and irritability may negatively affect learning processes and the quality of social relations [22,84]. School contexts that are not sensitive to individual differences or that do

not adopt inclusive learning strategies can exacerbate maladjustment in temperamental at-risk adolescents, who can manifest a behavioral and emotional vicious cycle characterized by emotional instability and perceived rejection [71,83]. In contrast, adolescents with high effortful control and adequate emotional regulatory abilities are less influenced by non-supportive school environments and tend to show better school adjustment and higher academic achievement [49,85]. Regarding motivation and emotional functioning, youths with high effortful control can easily manage and tolerate frustration, persevere better over complex tasks, and better orient their attention toward long-term goals across cultures [84,86]. These youths can efficiently modulate their emotional reactions, even in group situations, facilitating cooperation, negotiation, and group problem-solving [22,83]. The school, in this sense, can have a twofold effect: on one hand, it can reflect and support the expression of individual traits; on the other hand, it can actively contribute to their modulation through the effect of adaptive education and learning practices, positive emotional climate, discipline, and positive expectations (e.g., [58,85]). Schools that promote inclusion, student participation, and protect the expression of individual differences can positively impact youths' development, promoting the adoption of effective emotional regulation and preventing the perception of failure and unsuitability, which are particularly relevant in collectivistic cultures that attribute to school performance a pivotal role for future work adjustment [83,85].

2.3.3. Peer Context

Peer groups become the primary socialization and identity environment, surpassing the importance of family, especially in individualistic cultures [14,87]. During adolescence, youths search for comparison, validation, and social roles experimentation, all aspects that can affect individual behavior, emotions, and self-perception [16,18]. The quality of social relations with peers can buffer individual resources or exacerbate vulnerabilities (e.g., [16,86]). Friends show two possible and opposite effects on adolescents: (a) emotional support, positive reinforcement, and a sense of belonging; (b) possible risk factors, especially if they engage in deviant behaviors, social exclusions, and peer pressure [18,88,89]. Adolescents with high resilience, self-regulation, extraversion, and emotional stability can effectively resolve relational conflicts through positive management strategies, including the adoption of empathetic skills, emotion regulation, and negotiation abilities, which in turn enhance the cohesion and stability of their friendship networks [61,90]. In contrast, adolescents with high impulsivity, low effortful control, and low tolerance to frustration tend to behave aggressively, activating avoidant or reactive responses, which negatively influence the quality of their friendships, especially in those cultures that emphasize adherence to social norms [16,61,90]. The valence of peer influence depends on several factors, including the structure of relationships (i.e., intensity and security), the quality of communication (i.e., reciprocal respect and active listening), and temperamental synchrony among members of the peer group [89,91]. Adolescents who engage in functional networks show better psychosocial adjustment, whereas those who associate with deviant peer groups or experience isolation tend to exhibit increased maladjustment [87,89]. Peer influence operates through both imitation and conformism—in both individualistic and collectivistic cultures, as well as social reinforcement mechanisms, as the level of group acceptance affects the adaptiveness or maladaptiveness of individual behaviors [18,87]. Moreover, in collectivistic cultures, peers offer fundamental sources of information about popularity and peer acceptance, which is directly associated with the level of adherence to social and cultural norms of conduct [18,84].

3. Psychosocial Adjustment During Adolescence and Individual Differences

As evidenced in the previous sections, adolescence is a thrilling period of change in the biological, cognitive, emotional, and relational domains, during which the expression of change and continuity largely depends on the reorganization of individual differences and environmental influences [2,3,11]. In this sense, the imbalance between cerebral maturation (i.e., the prefrontal cortex and the limbic system) and the stabilization of individual patterns predisposes youths to high variability and vulnerability to maladjustment [9,11,19]. Individual patterns of functioning are, in fact, not rigid configurations: their adaptation depends on life experiences and the ability to respond efficiently to contextual challenges, while maladjustment depends on ineffective responses [92].

According to a variety of studies, during adolescence, oppositional and defiant conduct increases, as well as isolation and emotional symptoms (e.g., [1,36]). The distinction between adaptive and maladaptive outcomes is crucial for understanding protective and risk factors throughout the life course [54,92]. Many studies have evidenced the association between anxiety and harm avoidance—negative emotionality, depression with low cooperativeness, oppositional behaviors with low effortful control, and social withdrawal with low agreeableness—very high conscientiousness (e.g., [23,93,94]). These studies underlined the need for tailored and specific interventions during the early phase of adolescence [93,94]. In terms of gender differences, empirical evidence demonstrated that adolescent girls tend to show internalizing problems and social withdrawal, especially when they perceive low social support, while adolescent boys tend to show higher externalizing problems and impulsivity (e.g., [52,95]). Thus, previous findings also support the role of culture in the expression of individual differences and the manifestation of maladaptive outcomes: collectivistic cultures tend to promote prosociality and the inhibition of internalizing symptoms, while individualistic cultures tend to emphasize autonomy and emotional expression, even when emotions are inadequate for the context (e.g., [44,53,96]).

The combination of variable-centered and person-centered results, including longitudinal and cross-sectional approaches, enables researchers and clinicians to capture personality dynamics over time and their associations with adjustment [3,19,23]. Further analyses have evidenced and confirmed associations among temperamental and personality traits with several specific outcomes, such as bullying, self-regulated learning, prosocial behaviors, and addictive conduct, thereby enhancing the view of personality plasticity that interacts differently with environments (e.g., [97–99]). In addition, several studies have demonstrated that promoting temperamental self-regulation can further sustain psychological well-being and reduce internalizing and externalizing problems [61]. In this sense, examining personality and temperamental patterns can provide an operational lens to design preventive interventions that also consider background variables, such as gender or cultural norms and values, from person-oriented and lifespan perspectives (e.g., [27,35,55,57]).

3.1. Individual Differences and Adjustment

Among individual differences, several dimensions have been explicitly connected to adjustment during earlier developmental stages, including effortful control, adaptive coping strategies, and resilience (e.g., [3,19,52]). Effortful control—the ability to inhibit impulsive responses and direct attention—was significantly associated with adequate emotion regulation abilities, even in stressful conditions, which reduces internalizing problems [49,94]. Resilience—the overall tendency to adapt in the face of adverse situations—has been linked to higher psychological and emotional well-being [100,101]. This domain occurs when youths possess low negative emotionality and high self-regulation, and the interaction between individual resources and environmental support enhances resilience [94,102].

Prosociality—the overall orientation to engage in behaviors that benefit others—develops in tandem with empathetic skills, enhancing social inclusion and fostering friendly relationships [61,83]. The adoption of coping strategies focused on problem-solving and cognitive reorganization can reduce emotional distress associated with developmental challenges [70,103]. The association between adaptive coping strategies and adequate levels of effortful control promotes emotional well-being and prevents at-risk behaviors [104,105]. In terms of motivational aspects, self-efficacy and internal locus of control can strengthen intrinsic motivation and academic commitment, supporting the protective role of resilience in the face of interpersonal stressful situations [106–108]. Individual dispositions, such as gratitude and optimism, can foster the development of adaptive patterns of functioning, as gratitude can enhance life satisfaction and relational quality, whereas optimism facilitates the way youths face difficulties [109,110]. At the relational level, perceived social support derived from family, school, and peer groups can promote and facilitate the adoption of adaptive coping strategies, foster enduring psychosocial well-being, and encourage participation in prosocial activities [18,77,111].

3.1.1. Emotion Regulation

Emotion regulation is the ability to monitor, evaluate, and modulate affective responses to achieve individual goals and scopes [112]. The domain of effortful control is fundamental for emotion regulation because it encompasses the inhibition of impulsive responses and the voluntary orientation of attention, both of which are essential for monitoring and regulating relevant stimuli—the starting point of emotional experience [19,61]. Adolescents with high effortful control can adopt effective coping strategies in stressful situations, which can reduce the likelihood of engaging in impulsive responses and help manage emotional reactions more effectively [70,104]. These adolescents tended to use coping strategies of cognitive reappraisal and problem-solving rather than avoidance or rumination [103,113]. Longitudinal research has demonstrated a correlation between high effortful control and improved school adjustment, academic success, and lower dropout rates [99,105]. The ability to sustain attention on complex tasks and to inhibit emotional distractions can facilitate learning and school involvement [19,49]. Moreover, effortful control can promote cooperative interactions with peers, reducing conflicts and fostering the adoption of prosocial tendencies [114,115]. At the neurobiological level, a better integration between the prefrontal cortex and the amygdala supports more effective emotional regulation and activation in context, which increases arousal—an aspect associated with higher effortful control, located in the prefrontal area [11,51]. Therefore, effortful control represents a crucial protective factor during adolescence, as this domain can sustain the adoption of effective coping strategies, modulate impulsivity, and promote academic and social success [19,70].

3.1.2. Resilience

The domain of resilience represents the ability to maintain or reorient adaptive functioning, even in the presence of adversities and risk factors [40,100]. This protective domain is particularly evident in the presence of high effortful control and low negative emotionality, which enables effective emotional regulation [94,101]. Thus, high resilience is one of the major protective factors during adolescence, as a variety of studies have demonstrated its role in mitigating vulnerability to internalizing problems—such as anxiety or depression—even in the presence of highly stressful family contexts [102]. The ecological model suggests that family support, positive peer relations, and effective mentoring experiences can buffer the domain of resilience, according to a “dose-response” effect, based on individual resources available in each specific condition [108]. At the neurobiological

level, resilience is associated with integrated cerebral circuits of the prefrontal cortex and amygdala, which modulate emotional responses through top-down processes [11,116]. The integration between these areas can facilitate individual adjustment to stressful stimuli by balancing limbic activation [51]. In social and educational contexts, the reinforcement of resilience encompasses the development of socio-emotional competencies, as well as the establishment of integrated, supportive networks at the community level [102]. Thus, in this sense, the inclusion of teachers' and public health professionals' formation is crucial [117,118]. Therefore, a resilient pattern of functioning represents a potential foundation for psychosocial well-being during adolescence, as there is a concrete need to promote this pathway through an integrated and systemic approach that considers cultural and contextual differences [102,114,119].

3.1.3. Prosocial Behaviors

Prosocial behaviors encompass voluntary actions oriented to benefit others, such as sharing, cooperation, and emotional support [120]. This basic tendency reflects the ability to recognize and modulate both one's own and others' emotional expressions, which is closely related to empathy and effortful control [61]. In fact, adolescents with high effortful control can adopt effective regulatory strategies, which in turn allow them to sustain helping behaviors even in socially stressful situations [83,120]. The ability to inhibit impulses and voluntarily orient attention to peers' emotional states fosters the adoption of an empathetic approach and cooperation with others [115,120]. Empathy, which refers to sensitivity toward others' emotional life, can mediate the relation between self-regulation and prosociality, predicting social inclusion and group cohesion [114]. At the psychological level, prosociality is associated with high social and emotional self-efficacy, as well as high life satisfaction, through mechanisms of positive reinforcement [107,109]. This mechanism sustains the assumption that it is necessary to foster educational and family contexts that explicitly enhance altruistic and prosocial behaviors [114,115]. Neuropsychological evidence suggests that the reinforcement of effortful control modulates the activation of cerebral networks associated with empathy, including the medial prefrontal cortex and the upper temporal lobe [11,116]. Family support plays a modeling role, as parents who instill prosocial values in their offspring can promote a sharing climate, which in turn affects the development of prosocial tendencies in children and adolescents [62,72]. Prosociality represents a key adaptive factor during adolescence, despite its normative decrease, which can be sustained through self-regulation and empathy [61,120]. The promotion of educational, family, and social contexts that can enhance this ability is crucial in preventing isolation and social conflicts [114,119,120].

3.2. Individual Differences and Maladjustment

Individual differences also play a crucial role in maladjustment during adolescence [23,29]. Patterns of functioning characterized by an under-control of impulses, emotions, and behaviors are more likely to exhibit high impulsivity and low effortful control, which in turn can predispose these youths to oppositional and aggressive behaviors [23,84]. Impulsivity, which is related to impairments in delay gratification and inhibiting immediate responses, is associated with substance use, risky behaviors, and juvenile deviance, as longitudinal studies have evidenced increases in externalizing symptoms among impulsive adolescents [23,121]. Emotional instability and negative emotionality contribute to affective fluctuations, irritability, and low tolerance to frustration, and lead adolescents to anxious and depressive symptoms, especially when they show difficulties in emotion regulation [21,23,61]. Introversion is associated with patterns characterized by low agreeableness, affiliativeness, and extraversion, as well as very high conformism

and behavioral control, which in turn lead to social inhibition, shyness, and a preference for solitude over social interaction with peers [40]. When introversion is very high, this tendency can lead to pathological social withdrawal and isolation, increasing the likelihood of experiencing anxiety and depression [24]. Together, impulsivity and negative emotionality exacerbate oppositional behaviors, which, in the presence of low self-regulation, can also amplify disruptive responses [122]. Similarly, introversion and negative emotionality predispose to a vicious cycle characterized by rumination and internalizing symptoms [123]. Low self-directedness and cooperativeness are associated with overall maladjustment and depression [93,124]. Thus, impulsivity, negative emotionality, and introversion represent key vulnerability factors for maladjustment during adolescence, and understanding the interactions among these traits can be beneficial for identifying specific vulnerability patterns [4,23].

3.2.1. Impulsivity

Impulsivity is one of the key behaviors associated with maladaptive patterns, characterized by high reactivity, high energy, high sensation-seeking, and impairments in self-regulation and negative emotionality [29]. These patterns are characterized by high impulsive behaviors and low effortful control, which is related to rapid and immediate behavioral responses that are not cognitively mediated [23,32]. Adolescents with low control abilities exhibit difficulties in delaying gratification and modulating emotional intensity [29]. Overall, impulsivity refers to the tendency to act immediately, without considering the potential short- or long-term consequences, which is associated with aggressive and oppositional behaviors [121]. At the neurobiological level, impulsivity is associated with disinhibition of the orbitofrontal cortex and reduced connectivity with the dorsolateral prefrontal cortex [8,50].

Longitudinal and cross-sectional studies evidenced higher levels of deviant behaviors, substance use, and delinquency among adolescents who possess personality patterns with low self-control and high impulsivity [29,32]. This impairment negatively affects cognitive control and behavioral planning, resulting in reduced emotional and behavioral inhibition [121]. The associations between impulsivity and negative emotionality amplify individual reactivity toward stressful stimuli and reduce the effectiveness of coping strategies [103,104]. In these conditions, when youths also exhibit difficulties in cognitive modulation, there is a high probability of triggering a vicious cycle that exacerbates emotional responses [23]. Within the school context, such patterns of functioning are frequently associated with poor academic achievement and behavioral problems, which, together with their low emotional regulation, increase the frequency of disciplinary sanctions and in-class isolation [71,105]. Moreover, these adolescents also show conflictual relations with peers and social withdrawal, which derive from their issues in containing and modulating aggressive impulses [23,61].

3.2.2. Emotional Instability

Emotional instability indicates a general disposition to frequently experience intense negative emotions, such as anger, sadness, or fear, which reflects higher emotional variability and lower tolerance to stressful stimulation [40]. High levels of negative emotionality and emotional instability are linked to the manifestation of internalizing problems, especially related to anxiety and depression, as well as behavioral maladjustment when there are also impairments in self-regulation [23,61]. At the neurobiological level, high emotional lability is associated with the hyperactivation of the amygdala and with issues in the prefrontal cortex control system, which amplify disruptive emotional reactions [8,125].

Longitudinal studies evidenced a stronger vulnerability to anxiety problems and depressive disorders in adolescents who manifest high negative emotionality, who also exhibit difficulties in the adoption of effective coping strategies [19,52,104]. Moreover, these adolescents tended to show higher risks for self-harm and suicidal ideation, especially when they were exposed to adverse childhood experiences [126,127]. Without supportive relational contexts, this pattern of functioning may manifest in rumination and social avoidance, and the combination of high negative emotionality with low emotional regulation can lead adolescents to experience difficulties in maintaining emotional balance in the face of stressful situations and daily challenges [104,111,123]. In the school context, this tendency leads to absenteeism, poor academic achievement, and relational difficulties with classmates, which further increase youths' emotional problems [19,118].

3.2.3. Social Withdrawal and Inhibition

The domain of introversion describes individuals who prefer solitary activities and have difficulties developing and maintaining interpersonal relationships, which can lead to increased isolation [40]. Although introversion is a neutral personality trait, it does not represent a psychopathological tendency in itself, but it can become problematic when individuals tend to avoid social contact and interactions systematically, and can lead to maladaptive isolation and social withdrawal, especially when its levels are very high and are associated with high neuroticism, low self-esteem, and low agreeableness [128]. This maladaptive functioning is particularly evident in the context of personality research, which identifies a pattern of functioning characterized by high introversion as the "overcontrolled" profile [28]. This pattern is characterized by significant social inhibition and a tendency to withdraw from social interactions due to high self-control levels and anticipatory anxiety [28,29]. The fear of social judgments and hyper-vigilance for social norms reinforce an avoidance cycle that reduces the frequency of interpersonal experiences [129]. These relational impairments lead youths to possess few social skills, which in turn contribute to the presence of communicative issues and difficulties in engaging in negotiation and conflict resolution behaviors [18,63]. Overcontrolled adolescents tend to interpret neutral interactions negatively, activating attributional biases related to rejection and neglect [129]. These youths tend to adopt coping strategies focused on cognitive and emotional avoidance, rather than problem-solving-oriented strategies [103]. At the neurobiological level, the overcontrolled functioning is associated with amygdala hyperactivation and suppression mechanisms driven by the prefrontal cortex, which influence cortisol levels—one of the leading indicators of prolonged stress [125].

Longitudinal evidence has shown that overcontrolled adolescents manifest high internalizing symptoms, such as social anxiety and depression [28,29,32]. In school contexts, isolation and withdrawal are evident in the low school engagement and in-group activities that characterize these youths [18,128]. The scarce frequency of positive feedback provided by peers and teachers reinforces the perception of low social efficacy, which in turn increases the likelihood of mood disorders [129]. Studies that focused on gender differences in the overcontrolled pattern evidenced that girls with this profile tended to exhibit anxiety and depression, while boys tended to experience covert anger [95]. Overprotective parents can reinforce the sense of isolation and withdrawal, promoting the perception of dependence on parental support [77,130]. Conversely, a secure attachment style can facilitate the gradual exposure to social contexts, reducing inhibition and promoting a positive development of socio-emotional skills [18,63].

3.2.4. Internalizing Problems and Withdrawal

Internalizing problems can be defined as mood and emotional issues, focusing on the emotional components of sadness, guilt, and worry [131]. Overall, internalizing problems stem from a pervasive dysregulation of emotions that leads individuals to “internalize” negative emotions, such as guilt or fear, and to overestimate the significance of those emotions, particularly in relational contexts [131]. Anxiety and Depression (also defined as Affective or Mood problems) [132] are two of the major problems in this area, and these problems tend to be frequently experienced and co-occur during adolescence (e.g., [133,134]). Overall, internalizing and emotional problems tend to jeopardize adolescents’ development over time because they are often associated with several other mental health problems, such as emotion regulation issues, sleep problems, or behavioral difficulties [135]. A large body of research focused on how temperament and personality can predict and influence internalizing problems (e.g., [52,136]). Negative emotionality—the tendency to experience anger, frustration, sadness, and anxiety—was firmly linked to internalizing symptoms, especially to anxiety problems, in adolescents (e.g., [49,137]). Longitudinal studies evidenced that youths with high negative emotionality show a prevalence of anxiety problems up to 30% more than their peers with low negative emotionality [24]. Functional neuroimaging has shown that in these youth, the amygdala is overactivated, and the prefrontal cortex exhibits reduced modulation of emotional information, contributing to difficulties in concentration and the manifestation of avoidant behaviors [11]. Moreover, low levels of effortful control have been linked with high rumination and social avoidance [52,74]. Adolescents with low self-directedness and high negative emotionality also show high suicidal ideation [127].

Another crucial internalizing problem during adolescence is withdrawal, which involves the avoidance of peer and adult relationships, a tendency that usually defines overcontrolled patterns—characterized by social inhibition and introversion [28,129]. Longitudinal studies have shown that these adolescents tend to spend more than 20–25% of their time alone compared to their counterparts, which increases their likelihood of experiencing chronic social isolation [138]. In these youth, the fear of social judgments and the perception of the Self as socially inadequate can reinforce an avoidance mechanism that further nourishes withdrawal [129]. Withdrawal is also reinforced by non-supportive school and family contexts, which limit the acquisition of socio-relational competencies [18,138]. Accordingly, recurring social isolation hinders youth from experimenting with prosocial and active relational models, which in turn hinders the formation of social supportive networks [129,138]. In school contexts, this is manifested as school absenteeism, poor academic achievement, and issues in school participation [83,129]. The lack of positive teachers’ feedback further worsens individual distress, increasing perception of being inadequate [138].

3.2.5. Oppositional and Aggressive Problems

Oppositional and aggressive problems are extremely common externalizing problems during adolescence and tap the broader domain of behavioral issues [121,139]. In this regard, patterns of functioning characterized by very low self-regulation together with high reactivity, impulsivity, and emotional issues, as the undercontrolled profile, are the most prone to these externalizing problems [29,31]. In fact, this personality pattern is characterized by very high impulsivity and impairments in effortful control, which can predispose to oppositional conduct and aggressive behaviors [23,121,135]. These adolescents tended to exhibit difficulties in inhibiting automatic responses and to react to frustrating and neutral stimuli with impulsivity [74,140]. Their low ability to modulate negative emotionality increases their tendency to hostility, especially in conflicts with peers or authorities [18,122]. Longitudinal studies have evidenced how impairments in effortful control can predict oppositional-defiant problems in both the short- and long-term over adolescence [105,141].

Moreover, clinical studies evidenced high prevalence rates of Oppositional-Defiant Disorders in undercontrolled adolescents rather than in adolescents with other personality patterns [32,139,142]. Undercontrolled adolescents tended to break social norms and exhibit provocative behaviors toward authority figures [29,31,142]. The joint effect of high negative emotionality and low cognitive control is particularly evident in reactive aggression, as opposed to planned aggression [84,143]. Functional neuroimaging studies have evidenced reduced activity in the prefrontal cortex when these individuals are involved in inhibition tasks, and this low activity level is associated with their aggressive and angry behaviors [50]. Within school contexts, the adoption of positive reinforcement can enhance the quality of undercontrolled behavioral responses, thereby sustaining behavioral regulation [119,144].

3.3. Intervention for Promoting Positive Development and Contrasting Individual Risks

As mentioned in the previous paragraphs, an early assessment of temperamental and personality characteristics enables the identification of potentially at-risk youths, thereby improving preventive interventions aimed at promoting individual differences and environmental resources [15,23,33,54].

Regarding individual differences that serve as protective factors, according to an integrated approach, enhancing both effortful control and individual and contextual resources in adolescence is crucial, as these elements can operate in concert to sustain general psychological well-being over time [70,145]. The inclusion of workshops focused on boosting emotional awareness in the school context is one of the most effective practical actions [117]. Structured playing-artistic activities foster self-regulation, which in turn improves the management of intense emotional stimuli [145]. Mindfulness-based exercises, including breathing and muscular relaxation, support body tension control, which is particularly linked to high emotional intensity, and their modulation helps enhance self-regulatory abilities [114,146]. Moreover, psycho-educational interventions can enhance self-regulation, emotional awareness, and cognitive flexibility, and the integration of peer support can further promote resilience and self-regulation [118,119]. Additionally, the empowerment of empathetic skills has a positive impact on resilience and emotion-related self-regulation, as confirmed by numerous studies that have established an association between prosociality, empathy, and resilience, although social and cultural norms may influence the expression of these behaviors and tendencies [108,114]. Clinical and neurobiological results suggest that fostering self-regulation can directly influence the neural structure associated with the expression of prosocial behaviors (e.g., [147]). Social and Emotional Learning (SEL) curricula, for example, propose role-playing and in-group reflective thinking activities, which support and sustain prosociality—a positive development of empathetic responses—and, in turn, also promote resilience and self-regulation [117,119]. Several meta-analyses have confirmed that SEL programs significantly increase the adoption of cooperative behaviors and the predisposition to help others [118,119].

Previous research also supports the role of tailored interventions to reduce the negative consequences of individual risks, such as impulsivity, negative emotionality, and internalizing and externalizing tendencies [118,119,146]. Programs that promote effortful control, support cognitive functioning, and mindfulness-based techniques can reduce impulsivity [118,146]. These programs can facilitate the recognition of impulses and emotions, leading adolescents to learn alternative coping strategies [119]. Emotional coaching, “stop-and-think” activities, and self-management training can be beneficial in this sense [148]. Additionally, the adoption of positive reinforcement in both school and family contexts can promote, especially in undercontrolled youths, the acquisition of adaptive and regulated behavioral responses, as structured environments can facilitate the development of self-regulation [28,32]. The empowerment of effortful control and the modulation of

negative emotionality with undercontrolled adolescents represent two crucial aspects that can reduce impulsivity and promote more adaptive behavioral responses [23,32]. When youths experience high levels of negative emotionality, the emotional support provided by family and mentoring programs can serve as important protective factors [23,117]. In these cases, perceiving the environment as sensitive and close can mitigate the negative impact of negative emotionality [23,117]. Research has shown that effective interventions for these youths should include training in emotion regulation, cognitive-behavioral-based protocols, and mindfulness-based activities, as they can enhance tolerance to stress and emotional flexibility [118,146,148]. These programs can reduce the intensity and frequency of emotional fluctuations, promoting the adoption of effective coping strategies [103].

The beneficial effects of tailored interventions have also been supported in the presence of internalizing and externalizing problems [118,119,124]. Mindfulness-based protocols have shown a significant effect in reducing maladjustment, while promoting self-regulation, especially when youths experience high anxiety symptoms [148]. As concerns depression, research has emphasized the role of self-directedness and cooperativeness, which, when low, can predispose youth to perceived helplessness and difficulties in sustaining goal-oriented behaviors, leading to depressive symptoms [93,124]. In this sense, cognitive-behavioral programs that focus on empowering individual resources, such as emotional self-efficacy and self-directedness, can reduce depressive symptomatology [144,149]. Peer-support protocols and self-help groups can improve a positive mood, which in turn can reduce self-harm tendencies and non-suicidal self-injurious behaviors [109,150]. SEL programs in school contexts can significantly reduce risk factors for both depressive and anxious feelings [118,119]. Social skills training, including role-play and structured feedback activities, can promote assertiveness and communication skills in youth with overcontrolled patterns [149]. Additionally, cognitive-behavioral interventions that focus on cognitive restructuring can help reduce anxiety and social isolation [144,149]. Supervised group activities, such as sports or creative labs, are also beneficial for youths with social withdrawal, as well as mentoring programs, which promote the development of self-esteem and specific self-efficacy beliefs on youths' competencies [117,144]. In this sense, systematic desensitization and step-by-step exposure have demonstrated their efficiency as techniques to reduce isolation and maladaptive introversion [151]. These trainings include role-play, behavioral modeling, structured feedback, and psychoeducation, which, together with cognitive-behavioral cognitive restructuring protocols, can diminish anticipatory anxiety [151]. Moreover, supervised group activities, such as creativity labs or group sports, can facilitate the acquisition of socio-emotional competencies in protected environments [117,118]. Thus, mindfulness-based programs can reduce emotional reactivity in overcontrolled youth, and parent training can provide a secure environment that supports and sustains their negative emotionality, thereby reducing their isolation [18,123,146].

When youths experience behavioral difficulties, the adoption of mindfulness-based protocols, especially in the presence of an undercontrolled personality pattern, aims to reduce reactive aggression and enhance self-regulation [146]. Programs that promote problem-solving skills aim to potentiate cognitive coping strategies, reducing oppositional conduct and aggressive responses, and to educate these youth in emotion recognition [148]. The participation of all the family members represents a key point for the long-term effectiveness of interventions, because trained parents who can promote positive parenting strategies and disciplines can reinforce youths' self-efficacy skills in modulating their maladaptive behaviors, which in turn can reduce oppositional and aggressive conduct [77,79]. In this sense, parental coaching can be beneficial in defining clear limits with parents and other significant adults, as well as in reinforcing youths' self-esteem and emotional understanding [149]. Cooperation between public mental health systems and the school

and family environment is fundamental for managing these issues, as in the most severe situations, pharmacological support may be necessary [142]. Lastly, the strategic use of information and communications technologies (ICTs) can enhance well-being in under-controlled adolescents by utilizing biofeedback apps, which promote the development of self-awareness and inhibition skills [40].

4. Conclusions and Prospects

Across the previous sections, the authors have evidenced how temperament and personality are central factors in understanding developmental adaptive and maladaptive pathways during adolescence, which are integrated within a complex system of family, school, social, and cultural aspects [3,23,57].

Regarding temperament, previous findings have evidenced the importance of effortful control, as well as other domains such as novelty seeking, harm avoidance, reward dependence, and persistence, each of which is supported in its functioning by complex neurobiological networks and modeled by experience (e.g., [8,11,52,136,137]). At the same time, the Five-Factor Model can offer a well-structured and cross-culturally sensitive view of personality, capable of describing stability and change over time of individual differences [19,23,38,54]. Accordingly, patterns of functioning, such as the Undercontrolled or the Overcontrolled, can increase individual vulnerability to, respectively, externalizing and internalizing problems [29,32]. In contrast, Resilient patterns can protect youths from maladaptive pathways, promoting self-esteem, empathetic skills, and adaptive coping strategies [23,31,32].

The ecological and socio-emotional perspective allowed us to understand how temperament and personality are not isolated dimensions, but they continuously interact with attachment functioning, family factors, peer relationships, and institutional environments [5,18,72,73,76]. Positive and secure relationships with family members can sustain the adoption of effective strategies to regulate emotions, as well as the development of emotional and behavioral self-efficacy beliefs [76,77,81,106]. Conversely, parenting practices characterized by overcontrol, or excessive indulgence, can promote the development of self-regulation difficulties, along with an increased likelihood of experiencing internalizing and/or externalizing problems [60,62,77,78].

Beyond the effects of microsystem environments, cultural norms and social values can either exacerbate or mitigate individual vulnerability to internalizing or externalizing symptoms, also influencing the effectiveness of interventions [44]. In collectivistic cultures, socio-emotional learning approaches focus more on cooperation and joint emotion regulation, whereas in individualistic cultures, interventions are oriented toward promoting autonomy and emotional expression [33,44,91,130]. These differences affect the prevalence of specific symptoms across cultures: for example, in Asian countries, somatization rates are higher than in other countries [152]. Moreover, in several Asian communities, the stigmatization of mental health problems leads to delayed access to public health services, and emotional expression is massively discouraged due to rigid cultural norms [94]. For individual differences, cross-cultural studies have shown that effortful control and negative emotionality tend to be universally present, as supported by cross-cultural neuroimaging research, which has demonstrated similar activation of the amygdala and prefrontal cortex across countries (e.g., [11]). However, their manifestations and their associations with adaptation can vary according to the specific cultural norms and values [44,76,130,153]. In collectivistic cultures, such as those found in many areas of Western Asia, prosocial tendencies are strongly encouraged from the early stages of development, and the development of effortful control abilities is oriented to support group adjustment [96]. In these cultures, emotional expressiveness is discouraged, and suppression is a highly adopted coping

strategy [23,76,153]. Adolescents with high negative emotionality tended to adopt coping strategies focused on avoidance and social conformism, which reduce the behavioral expression of emotions and the effects that individual emotions can have on the group [36,76,153]. Conversely, in individualistic cultures, such as those in Western countries, autonomy is crucial, and the development of effortful control is particularly important for achieving personal success [36,96,153]. In these contexts, emotional expression, even negative ones, is well tolerated and frequently interpreted as an indicator of authenticity [23,112]. Adolescents in individualistic cultures that exhibit high negative emotionality can effectively socially negotiate their needs, thereby reducing the reliance on avoidance coping strategies [23]. Collectivistic cultures encourage altruism with social rewards, while in individualistic contexts, the adoption of altruistic behaviors can be perceived as an indicator of weakness [96]. Impulsivity is more commonly sanctioned in collectivistic cultures, whereas individualistic cultures tend to encourage juvenile exploration and novelty-seeking [23,96]. Cultural differences can also be observed by considering adaptive and maladaptive outcomes. The prevalence of depression varies according to its manifestation, as in several countries, internalizing problems tend to manifest through somatization rather than expression [152]. Moreover, in collectivistic cultures, there is a tendency to formally sustain and protect youths' development, while in individualistic cultures, significant indicators of social support are more informal, such as peer networks and family support [18]. In collectivistic cultures, the adoption of interpersonal coping strategies and the search for social support are widespread, whereas in individualistic contexts, cognitive coping strategies, especially those oriented toward problem-solving, are widely adopted [23,152]. These cultural differences underscore the need for cross-cultural adaptations of preventive and promotive interventions [114,130]. In collectivistic cultures, group cooperation can be sustained, whereas in individualistic cultures, individual self-regulation should be emphasized [118,152]. In this sense, longitudinal and cross-cultural studies have demonstrated that the effectiveness of resilience-building programs is linked to the degree of alignment between the intervention aims and the type of cultural values promoted within a specific country (e.g., [33,154]). Therefore, cultural differences are crucial for better understanding the associations between individual functioning and developmental pathways, as well as for designing context-sensitive interventions [4,23,57].

Considering aspects related to assessment, according to the literature, adopting a multi-method, multi-informant approach is fundamental for combining and interpreting data from various resources [132]. For example, the use of the Early-Adolescent Temperament Questionnaire (EATQ) [155], the Big Five Questionnaire (BFQ) [46], or the Positive and Negative Affect Scale (PANAS) [156] can provide important information about youths' self-perception of their temperamental and personality traits related to self-regulation, emotionality, affiliativeness, and daily approach [19]. The adoption of the Eysenck Personality Questionnaire (EPQ) [157], with both self- and others' reports, can provide different perspectives on adolescents' personality functioning [4]. For assessing adjustment, measures derived from the A.S.E.B.A. (i.e., Achenbach System for Empirically Based Assessment) [158] method can be used to collect different sources—such as parents' and teachers' views—of information on youths' internalizing and externalizing problems, as well as on social and school adjustment [29,36,82,132]. These instruments could be beneficial for the early identification of at-risk profiles and subjects, which can increase the effectiveness of designing and implementing tailored interventions [4,23,54,84,92].

Overall, temperamental and personality plasticity during adolescence suggests that this period could represent a significant phase for the adoption of early interventions [2,33,48,118]. Effortful control was evidenced as a core protective factor for adolescents, due to its significant effects on coping strategies, impulsivity, and social and

academic adjustment [19]. Thus, psycho-educational and preventive interventions focused on this dimension are fundamental for both short- and long-term adjustment, to enhance socio-emotional development and reduce vulnerability to internalizing and externalizing problems [3,17,53,88,92]. The inclusion of both teachers and parents in promoting youths' self-regulation abilities allows for the extension of the beneficial effects in all the significant contexts that adolescents experience daily, within a socio-cognitive perspective [107]. As we have seen, resilience is closely connected to effortful control; therefore, empowering self-regulation leads to an increase in resilience [25,39,61]. Moreover, effortful control represents a key factor in emotional regulation and a successful experience throughout adolescence, as well as prosocial peer networks, which serve as essential protective factors that can reinforce perceived social support and reduce aggressive behaviors [18,86,88,114].

In terms of interventions, previous research has supported the effectiveness of mindfulness-based protocols and cognitive-behavioral programs in promoting self-regulation and in reducing internalizing problems (e.g., [148,149,151]). Moreover, the inclusion of structured programs to promote self-regulation appeared crucial within school contexts, targeting not only students but also teachers and parents, to foster warmth and a sense of belonging in the most significant environments for youths [117]. Integrated approaches can enhance the effectiveness of interventions by maximizing collaboration among schools, families, and public health services, ensuring continuity across contexts and increasing stability over time [34,37,118].

Another crucial point is the empowerment of coping strategies in all at-risk patterns of functioning, such as in the case of overcontrolled or undercontrolled profiles [31,32,120]. In this sense, understanding neurobiological mechanisms and psychological dimensions of these specific patterns allows for better identification of at-risk situations before the emergence of severe problems and to reduce the negative consequences of individual vulnerabilities [54,92]. The central aim in these situations should be to transform vulnerabilities into opportunities, given individual plasticity and the beneficial effects of supportive environments [3,23]. In this sense, integrating tailored programs into wider interventions can reduce individual vulnerabilities and enhance environmental resources and opportunities [4,33,55]. An operative approach can positively sustain the development of individual and group resilience and a sense of competence, according to a positive view that emphasizes the proactive nature of this dimension, as not merely a stress response, but also a factor that is able to modulate the developmental process over adolescence [154].

Adopting an integrated approach that includes psychometric assessment, systematic observations, and longitudinal monitoring is necessary to accurately identify the longitudinal trajectories of each youth over time and detect early risky situations [19]. Creating a "preventive environment" is fundamental to promoting positive development, including among social networks, such as between schools and families, which should be able to capture the specific needs of adolescents [18,23]. In this review, the authors did not consider the impact of digital media on adolescents, a crucial contemporary context that warrants inclusion [68]. Still, future research should highlight this aspect in terms of its effects on adolescents' functioning, as well as its potential as a facilitator instrument for more effective interventions [68]. Moreover, the authors did not rely on specific empirical data to support our reasoning; instead, the authors refer to several previous empirical studies that align with the theoretical framework and the view of adolescence (e.g., [2,23,53,62,153]). Therefore, future contributions should further analyze these points, adopting a meta-analytic strategy or providing empirical data to support these conclusions.

In summary, in this view, adolescence should be considered not only a period of vulnerability, but also a time of opportunities, in which tailored interventions can enhance

self-regulation, bolster individual resources, and provide social support, thereby contributing to the construction of inclusive and supportive adaptive developmental pathways.

Author Contributions: Conceptualization, A.F. and C.L.; writing—original draft preparation, A.F. and M.C.T.; writing—review and editing, A.F. and T.Q.; supervision, T.Q. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: No new data were created or analyzed in this study. Data sharing is not applicable to this article.

Conflicts of Interest: The authors declare no conflicts of interest.

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