

RESEARCH ARTICLE

Family environment, self-esteem, and personal growth initiative: A systematic review of adolescent emotional health

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ABSTRACT

Although numerous studies have examined individual predictors of adolescent emotional health, there is a lack of integrative reviews that synthesize both personal and environmental factors within a coherent theoretical framework. This review addresses this gap by systematically synthesizing existing literature on the role of family environment, self-esteem, and personal growth initiative in shaping adolescents' emotional health. Following PRISMA guidelines, relevant peer-reviewed articles published between 2000 and 2024 were identified through structured searches across major databases including PsycINFO, PubMed, Web of Science, and CNKI. Inclusion and exclusion criteria were applied, and a total of 68 studies were reviewed. This review is grounded in Lazarus' Cognitive Motivational Relational Theory and Bronfenbrenner's Ecological Systems Theory, which together inform a conceptual framework illustrating the mediating role of self-esteem and the moderating role of PGI. The findings highlight how supportive family dynamics and proactive psychological traits interact to influence emotional well-being, offering valuable insights for intervention design and youth mental health policy.

Keywords: family environment; negative emotion; self-esteem; personal growth initiative; adolescent emotional health

1. Introduction

Adolescent emotional health has garnered significant attention in psychological research due to its far-reaching implications for academic achievement, interpersonal relationships, and long-term well-being [1-2]. Global data from organizations such as the World Health Organization reports that an estimated 1 in 7 children and adolescents aged 10 to 19 are affected by mental health conditions, with anxiety, depression, and behavioural disorders among the most common [3]. In China, recent national surveys reveal that approximately 30% of middle and high school students report experiencing significant levels of stress and sadness, and nearly 25% exhibit symptoms consistent with clinical depression or anxiety disorders [4-5]. The increasing prevalence of these emotional challenges reveal that the situation of teenagers' emotional problems is serious. Recently, the factors, such as family environment, self-esteem, and personal growth initiative, which have emerged as

ARTICLE INFO

Received: 29 March 2025 | Accepted: 10 April 2025 | Available online: 5 June 2025

CITATION

Li YY, Daud MN, Kahar R, Burhan NAS. Family environment, self-esteem, and personal growth initiative: A systematic review of adolescent emotional health. *Environment and Social Psychology* 2025; 10(6): 3591 doi:10.59429/esp.v10i6.3591

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critical factors that shape adolescents' emotional experiences^[6-7]. Analyzing these reasons will be helpful to the effective implementation of the strategies.

Although prior studies have explored these variables independently^[8-11], these interconnected dynamics and collective influence on adolescent emotional health remain underexplored^[12]. Gaps in this current study exist in figure out how supportive family environments interact with personal traits like self-esteem and personal growth initiative to influence emotional outcomes. There is a lack of integrative frameworks that consider both environmental and individual factors within a unified model^[13]. Based on these research problems, this review aims to synthesize prior literature to clarify these gaps and provide a more comprehensive framework integrated Lazarus' Cognitive Motivational Relational Theory of Emotion^[14] and Bronfenbrenner's Ecological Systems Theory^[15-16]. Further to provide suggestions to enhance our understanding of the dynamic interplay between family environment, self-esteem, and personal growth initiative, offering actionable insights for research, policy, and interventions aimed at promoting adolescent emotional well-being.

This review aims to examine the relationships among family environment, self-esteem, personal growth initiative, and adolescent emotional health through a systematic literature review approach.

2. Literature review

2.1. Family environment, negative emotion, and adolescent emotional health

Family environment is the physical, emotional, and relational environment in which the individual is raised including parental support, cohesion, and conflict^[17,8]. The home is a major complex, consisting of several interlocking subsystems^[18]. The multifaceted construct determines the adolescents' immediate welfare and has implications for their longer-term emotional welfare and social growth^[19]. Evidence shows that adolescents raised in an environment that is supportive, warm, has low levels of conflict, and communicates openly perform better at regulating emotions while dealing with stress^[20]. Conversely, emotional disturbances, for instance, anxieties and depression find risk in perception environments including no care, hostility, and high conflict, and show the crucial role of family in their events^[10]. This stage is a critical developmental period for middle school students in which family interactions are especially potent predictors of emotional and academic outcomes, suggesting the need for focused research attention and interventions within the educational context addressing these relationships^[21].

Negative emotions have always been related to adolescents' mental health^[22-23]. As an unpleasant affective state that interferes with cognitive and social functioning, anxiety, depression, and anger are definitions in the field of mental health and act as important reference indicators of individual mental health^[24-26]. This can easily disrupt our attention, decision-making, and interpersonal interactions in ways that are particularly disruptive during adolescence. According to research, we know that adolescents are becoming more and more susceptible to negative emotions because developmentally they are becoming more rapidly changed and they have more academic presentations and social pressures than other age groups^[2]. This finding is aligned with the escalating emotional health concerns in adolescents, signaling the need for systemic and targeted interventions to address this in global and local settings.

The emotional health of adolescents includes having the capacity to maintain psychological well and to appropriately balance positive and negative emotions for general well-adjusted well-being^[27]. A supportive family environment is a bedrock for building emotional resilience, offering safety, facilitating communication, and encouraging good coping strategies. Having high conflict or neglectful family contexts amplifies adolescents' susceptibility to chronic negative emotions such as anxiety and depression, which can be much

more detrimental to teens' mental health outcomes^[10]. This viewpoint highlights the importance of a family dynamic environment in shaping adolescents' emotions, and there is a need to treat family-related factors in emotional health interventions.

Theoretical perspective to the family environment and emotional well-being can be understood. Lazarus^[14] proposes his cognitive-motivational-relational theory that adolescents tend to interpret and appraise their environments as supportive or as a threat, which influences the emotions of the adolescents and forms their ways of coping. Miller-Graff and Cummings^[28] found that structured family-based programs that targeted fostering positive appraisals and emotional communication reduced the adolescents' anxiety levels over the six months.

This situates these appraisals within Bronfenbrenner's^[29] Ecological Systems Theory from the perspective of the family microsystem, where it is argued that close and consistent interactions within this system powerfully shape adolescents' developmental trajectories. According to De Looze^[20] enhanced parent-adolescent communication was associated with emotional well-being among adolescents, indicating that supportive family relationships may play a protective role in emotional health. These theories combined highlight the role that supportive family interactions play in easing or offsetting negative emotional experiences and promoting emotional resilience.

Previous research has documented extensively the influence of family environment on adolescent emotional health; however, the mechanisms by which these relationships occur are complex.

2.2. Self-esteem

Self-esteem, an overall evaluation by an individual of his or her worthiness is a key determinant of emotional health^[30-32]. High self-esteem is associated with emotional stability, and low self-esteem inclines one to anxiety and depression^[27]. Self-esteem is of particular importance in family education because this component is highly dependent on parents' support, communication, and recognition. Meanwhile, self-esteem not only involves self-evaluation but also reflects an individual's perceived competence and worthiness across meaningful life domains. Mruk's^[33] functional model of self-esteem posits that both competence and worthiness must be supported to promote stable emotional health, especially during adolescence when identity and emotional regulation are developing in tandem. According to recent research, adolescents who receive strong emotional support from their families tend to exhibit higher levels of self-esteem, which in turn acts as a buffer against emotional distress^[34-37]. Moreover, promoting positive reinforcement and constructive feedback within targeted family-based interventions has been demonstrated to bolster self-esteem, progressing toward higher levels of adolescents' emotional and psychological outcomes^[38-39]. The importance of considering the integration of self-esteem-focused strategies in a family education practice aimed at fostering the healthier emotional development of adolescents was emphasized.

The consistent finding from research is that self-esteem mediates the relationship between family environment and adolescent emotional health^[40-41]. Adolescents who are raised in supportive family environments are proven to have increased self-esteem because these types of family environments foster feelings of validation, security; as well as competence^[37,32]. In alignment with what Mohammadzadeh^[10] found, adults with high levels of self-esteem during adolescence if they had been raised in a nurturing family environment, adolescents in nurturing family settings have high levels of self-esteem and therefore will be able to tackle emotional challenges well. Self-esteem acts as a protective mechanism against negative emotions by shaping cognitive appraisals of stressors. According to Lazarus' Cognitive Motivational Relational Theory, higher self-esteem promotes positive interpretations of environmental stressors, thereby reducing emotional distress^[14]. Supportive family environments can improve self-esteem and facilitate its role in mitigating

negative emotional states, creating a reinforcing cycle of emotional resilience. By contrast, family environments characterized by neglect or conflict can erode self-esteem, exacerbating emotional vulnerabilities and highlighting the need for interventions targeting family dynamics and self-esteem development.

Therefore, self-esteem plays an important mediating role in this article, and the family environment further influences the emotional health of adolescents through self-esteem, and in a supportive family environment, we believe that this influence should be positive.

2.3. Personal growth initiative (PGI)

PGI defined as proactive engagement in self-improvement, represents an individual's intentional efforts to enhance their skills, abilities, and personal development ^[42]. In the context of family and school environments, PGI plays a critical role in fostering adolescents' resilience and emotional adaptability ^[43]. Research found family environments that promote open communication and opportunities for self-reflection are positively associated with the development of PGI, which further enhances adolescents' capacity to navigate emotional challenges ^[11]. This finding indicated that the key role of integrating PGI-focused strategies is in the area of both educational practices and family interactions to support adolescents' long-term emotional and psychological well-being.

In this article PGI is investigated as a moderator of the link between self-esteem and emotional health outcomes. Those adolescents with high PGI are more likely to harness self-esteem to cope with stress and recover from emotional challenges ^[11]. PGI is related to adolescents' use of proactive coping strategies in stressful situations such as setting personal goals or finding ways to potentially get better, that enhance their resilience to negative emotions. According to Bronfenbrenner's framework, PGI develops through the interaction of individual and environmental factors and an exploration of a supportive family environment where a PGI is developed which serves to mitigate adverse conditions. Such results imply that interventions aimed at PGIs, whether through school programs designed to increase personal growth or family practices promoting reflection and autonomy, may enhance self-esteem's protective role against negative emotional experiences. PGI as such a tool provides adolescents with a means of actively engaging in shaping their emotional trajectories, and as such contributes to long-term psychological well-being.

2.4. Lazarus' cognitive motivational relational theory of emotion

According to Lazarus ^[14] (1991), emotions represent the outcome of the cognitive appraisal of the person-environment interaction such that individuals assess situations in terms of possible harm, benefit, or threat. In this core view of theory, emotional responses are understood as shaped by subjective evaluations and coping mechanisms instead of automatic reactions to external stimuli. Within this framework, self-esteem and PGI are conceptualized as personality variables that mediate these appraisals. Having high self-esteem helps adolescents perceive difficult situations as opportunities to pull up a feeling of competency and emotional steadiness.

This article proposed based on this theory that PGI moderates the effects of self-esteem on emotional outcomes by amplifying the positive impact of self-esteem on emotional outcomes. There are several reasonable inferences: High PGI adolescents have positively utilized self-esteem to handle stressors, and those with low PGI lack the appropriate skills to utilize self-esteem to cope with stressors ^[44]. This difference supports the idea that PGI is a very important enhancer, especially in environments in which adolescents are at a disadvantage emotionally. The benefits of PGI depend largely on supportive family dynamics, which help nurture both self-esteem and adolescents' capacity for proactive development. The interactions between PGI and self-esteem and their potential protective effects are complicated, as they may be either undermined or

have no protective effects in contexts of high conflict or neglect. The theoretical perspective presented here provides a richer understanding of family environment and individual traits and how together they influence emotional outcomes.

2.5. Bronfenbrenner's ecological systems theory

According to Ecological Systems Theory, it is important to realize that individual outcomes are influenced by multiple ecological systems, specifically five (the microsystem, mesosystem, exosystem, macrosystem, and chronosystem) levels of ecological systems [8,29,15]. Adolescent development is subject to the greatest direct and most profound influence of the microsystem consisting of the immediate contexts such as family. It was developed in an attempt to explain how the genetic predispositions of teenagers and their home environments combine to shape growth and development.

The adolescent microsystem consists of immediate interactions and relationships that adolescents have with family, peers, and school environments [45]. This framework discerns that the family environment is the key structure of emotional health because it is a major source of feeling support, communication, and cohesion. Emotional stability is promoted by a nurtured and harmonious family microsystem that helps adolescents form resilience and well-built coping mechanisms [46]. By contrast, family environments characterized by conflict and neglect increase the risk of emotional instability and promote susceptibility to anxiety, depression, and other negative emotional outcomes [47].

Bronfenbrenner's model helps to support the use of the family microsystem as a central factor in shaping adolescent emotional well-being within the context of this article. Lazarus's theory highlights that personal appraisals and coping mechanisms shape emotional responses, with traits like self-esteem and PGI playing a role. Both of these family–environment interactions emphasize the family's impact and also give a theory for determining how family relations interact with personality traits, such as self-esteem or PGI. This article attempts to clarify what interactions with the microsystem involving supportive family environments do to emotional health and attenuate negative emotional experiences by understanding these interactions.

Although a growing body of research has examined the individual effects of family environment, self-esteem, and PGI on adolescent emotional health, existing findings remain fragmented and theoretically inconsistent. Most studies focus on isolated variables or lack integration across ecological and cognitive-emotional domains. In particular, few reviews have systematically synthesized empirical evidence on how these factors interact to shape emotional outcomes in adolescents. Moreover, the mediating role of self-esteem and the moderating role of PGI have been understudied within a unified theoretical framework.

To address this gap, the present study adopts a systematic literature review approach to explore:

- (1) How the family environment influences adolescent emotional health.
- (2) Whether self-esteem mediates this relationship.
- (3) Whether PGI (PGI) moderates the effect of self-esteem on emotional outcomes.
- (4) How does the theory support the relationship between variables family environment, self-esteem, and PGI on adolescent emotional health.

3. Method

3.1. Search strategy

This article adopts a systematic literature review methodology inspired by the PRISMA framework [48] to systematically identify, screen, and synthesize relevant studies on adolescent emotional health, family environment, self-esteem, and PGI. The search was conducted across multiple academic databases including

Web of Science, Scopus, PsycINFO, and CNKI. Keywords used were “adolescent emotional health,” “family environment,” “self-esteem,” “PGI,” and “cognitive appraisal.” The final search was completed in late December 2024. Articles published between 2000 and 2024 were considered. The inclusion criteria were peer-reviewed articles in English or Chinese, empirical or theoretical, and directly related to the constructs of interest. A total of 68 articles were included in the final analysis after duplicate removal and abstract screening (see **Figure 1**).

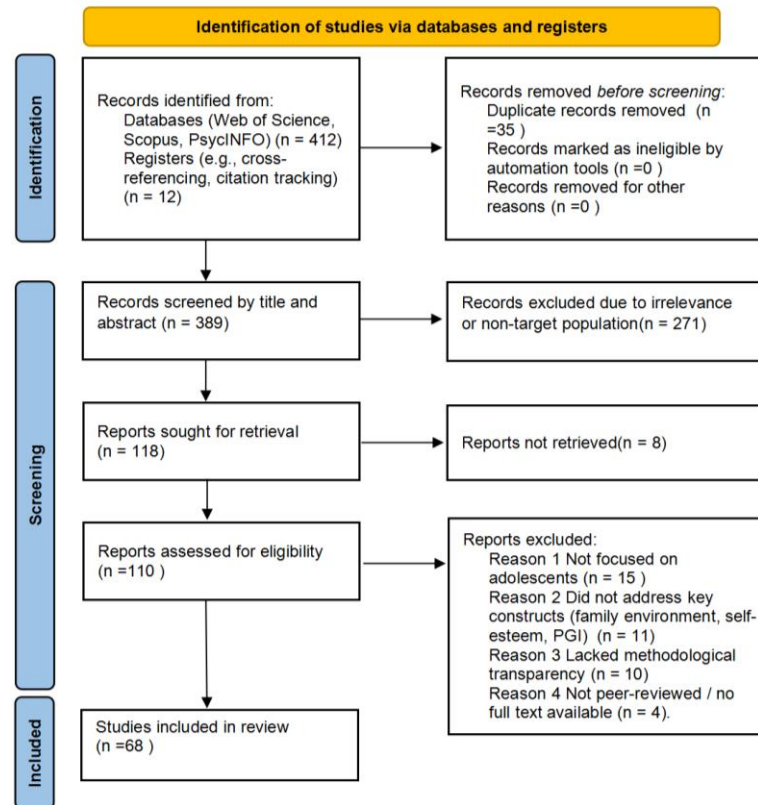


Figure 1. PRISMA 2020 flow diagram illustrating the study selection process.

Note: This flow diagram summarizes the identification, screening, eligibility assessment, and inclusion of studies in accordance with PRISMA 2020 guidelines.

3.2. Inclusion and exclusion criteria

To ensure relevance and methodological adequacy, the following inclusion and exclusion criteria were applied:

Inclusion criteria: 1) Studies involving adolescents aged 10 – 19. 2) Focus on at least one of the following constructs: family environment, self-esteem, PGI, or adolescent emotional health. 3) Empirical studies (quantitative, qualitative, or mixed-methods), conceptual papers, or meta-analyses published in peer-reviewed journals. 4) Publications written in English between 2000 and 2024.

Exclusion criteria: 1) Studies focusing solely on adults, children under age 10, or specific clinical populations. 2) Articles without clear methodological frameworks or those not addressing the core variables. 3) Grey literature, including working papers, editorials, book reviews, etc. 4) Duplicated entries or inaccessible full texts.

After screening, 118 reports were sought for full-text retrieval, and none were excluded due to retrieval failure. Following full-text review and application of eligibility criteria, 68 studies were included in the final synthesis.

4. Results

4.1. Summary of included studies

A total of 68 studies were included in the final synthesis after applying the inclusion and quality assessment criteria. These studies varied in terms of geographical location, research design, theoretical framework, and methodological rigor. The majority of studies were conducted in Asia ($n = 29$), followed by North America ($n = 18$), Europe ($n = 14$), and other regions ($n = 7$), reflecting a growing global interest in adolescent emotional health.

Regarding research design, quantitative methods dominated the field, with cross-sectional survey studies comprising approximately 65% of the sample. A smaller number of studies employed longitudinal ($n = 11$), qualitative ($n = 9$), or mixed-method ($n = 4$) approaches. Most studies adopted established theoretical frameworks such as Bronfenbrenner's Ecological Systems Theory and Lazarus' Cognitive Motivational Relational Theory, while a few applied context-specific or culturally grounded models.

4.2. Synthesis of results

The synthesis of the included studies was organized around the three core themes of this review: (1) the role of family environment, (2) the mediating effect of self-esteem, and (3) the moderating function of PGI in adolescent emotional health.

4.2.1. Family environment and emotional health

Consistent evidence across studies has confirmed that a supportive family environment, characterized by warmth, open communication, and low conflict, is associated with lower levels of emotional distress and greater emotional resilience in adolescents [1,10,47,49-50]. In contrast, high-conflict or neglectful family environments consistently correlate with increased anxiety, depression symptoms, and inadequate emotion regulation abilities [51-53]. These relationships have also been confirmed within Chinese contexts, where studies indicate family cohesion and emotional expression significantly impact adolescents' emotional health [17,54-56]. Furthermore, recent research highlights the dynamic interactions between family cohesion and adolescents' emotional coping skills, proposing that emotional security within family settings fosters PGI and essential psychological resources for effectively managing stress [57-59]. These observations closely align with Bronfenbrenner's ecological theory, which identifies the family microsystem as a critical influence on psychosocial development.

4.2.2. Self-esteem as a mediator

Approximately 38 studies explicitly tested or discussed self-esteem as a mediating variable in the relationship between family environment and adolescent emotional health. Evidence consistently indicates that adolescents raised in emotionally supportive family contexts tend to report higher levels of self-esteem, which in turn contributes to reduced emotional distress [38,36]. Self-esteem functions as a psychological buffer, mitigating the negative impact of environmental stressors by enhancing adolescents' perceived competence, self-worth, and sense of belonging [32,34-35]. Several studies [27,12,37] provide robust empirical support for mediation models in which family variables, such as parenting style, family cohesion, and emotional expressiveness, exert indirect effects on depression, anxiety, or general emotional well-being through self-esteem. In addition to buffering internalizing symptoms, self-esteem is also inversely linked with externalizing

behaviors such as aggression, further confirming its mediating value in emotional and behavioral regulation [39]. This mechanism has shown particular relevance among adolescents navigating periods of high academic pressure or family disruption, where self-esteem serves as a key protective factor against emotional maladjustment [60].

4.2.3. Personal growth initiative as a moderator

Although relatively fewer in number, research addressing PGI has consistently underscored its potential role in moderating the link between self-esteem and emotional outcomes [61]. Adolescents with elevated PGI levels are more inclined toward adaptive coping mechanisms, positively reframing difficulties, and sustaining emotional stability under stressful conditions [27,59,62]. These results imply that PGI could enhance self-esteem's protective capacity, especially in contexts characterized by significant stress such as low family cohesion, heightened parental expectations, or academic pressures [53,57]. Drawing upon Lazarus' Cognitive Motivational Relational Theory, PGI likely encourages constructive cognitive evaluations and proactive coping behaviors, thus alleviating emotional distress and bolstering resilience. Consequently, PGI serves as an adaptive psychological resource that enables adolescents to effectively translate self-beliefs into robust emotional regulation and stress management strategies.

5. Discussion

The results of this study illustrate that family environment, self-esteem, and PGI significantly influence adolescent emotional health, with self-esteem mediating family support effects and PGI moderating the association between self-esteem and emotional outcomes. Nonetheless, these findings currently lack a unified theoretical perspective to thoroughly explain the underlying mechanisms involved. Consequently, this discussion will emphasize the theoretical foundations provided by Lazarus' Cognitive Motivational Relational Theory [14] and Bronfenbrenner's Ecological Systems Theory [29] to reinforce and expand the proposed framework. On one hand, integrating these theories will be justified regarding their relevance to this study's conceptual model. On the other hand, the implications of this newly proposed framework for adolescent emotional health will be examined, underscoring its potential contributions to future interventions and policies.

5.1. Why integrate theories?

This study found that the application of these theories to self-esteem and PGI in the context of family environment and adolescent emotional health has often been treated independently.

Self-esteem operates as a mediating variable in Bronfenbrenner's framework, suggesting psychological development arises from proximal interactions within the microsystem, particularly family dynamics. Emotionally supportive parenting, minimal family conflict, and warm communication enable adolescents to internalize positive self-perceptions [34,36]. These observations are consistent with research indicating that higher self-esteem translates supportive family environments into improved emotional adaptation [35,37]. These results correspond with Bronfenbrenner's viewpoint, where internal psychological resources developed in microsystems mediate the effects of environmental factors on emotional outcomes.

Consistent with Lazarus' cognitive-motivational-relational theory, PGI (PGI) serves as a moderating factor by shaping how adolescents appraise and respond to emotionally challenging situations. Rather than adopting a passive stance, individuals with high levels of PGI tend to engage in intentional goal-setting, proactive self-improvement, and constructive problem-solving [27,62]. This proactive orientation allows them to face difficulties not as fixed obstacles, but as opportunities for growth and adaptation. Notably, the present findings suggest that PGI strengthens the protective function of self-esteem, particularly under conditions of elevated stress, such as intense academic pressure or limited familial support [53,57]. In such contexts,

adolescents with higher PGI are more likely to maintain emotional stability, as they are better equipped to reframe stressors in a positive light and draw upon adaptive coping strategies. This observation resonates with Lazarus' proposition that individual differences in appraisal play a crucial role in moderating the effects of stress [63]. PGI, in this sense, appears to facilitate more resilient emotional responses by mobilizing internal psychological resources and promoting a sense of agency in the face of adversity [59,64].

However, examining these variables through isolated theoretical lenses may obscure the complexity of their interactions. For instance, while Bronfenbrenner's Ecological Systems Theory contextualizes the influence of the family environment, it does not fully account for the internal cognitive processes that shape how adolescents interpret and respond to stressors. Conversely, Lazarus' Cognitive-Motivational-Relational Theory explains emotional coping at the individual level but may overlook how such coping resources are cultivated through proximal social interactions.

Firstly, combining these two theoretical perspectives offers a more comprehensive explanation by linking adolescents' internal thought processes with the broader social environment in which they develop. Lazarus' framework highlights the role of cognitive appraisal in shaping how traits like self-esteem and PGI influence one's interpretation of stressors. For instance, adolescents with high levels of PGI are more inclined to view academic or interpersonal challenges as opportunities for growth rather than threats [59,62]. Empirical evidence from Chinese studies echoes this view, showing that PGI helps students reframe academic stress and adopt more adaptive coping mechanisms [53,57]. Moreover, PGI appears to enhance the protective impact of self-esteem by promoting constructive coping patterns and encouraging more positive appraisals, especially in environments marked by intense pressure or limited family support [27,64]. Taken together, these findings suggest that PGI plays a flexible and active role in turning emotional challenges into opportunities for resilience and psychological development.

Furthermore, high-conflict family environments can obstruct the development of adaptive traits like self-esteem and PGI, increasing adolescents' emotional vulnerability [52,54]. This effect is particularly pronounced in adolescents exhibiting externalizing behaviors such as ADHD or ODD, where the absence of affirming family interactions further exacerbates emotional vulnerabilities [65]. In contrast, emotionally supportive families foster stable self-worth, promoting adaptive coping in stressful situations [34-35,66]. Bronfenbrenner's theory highlights these processes within the family microsystem, underscoring its central role in developing self-esteem and PGI. An effective microsystem provides the emotional support necessary for emotional regulation and psychological resilience [1,67].

Secondly, integrating these two theoretical frameworks highlights their complementary strengths: (1) Bronfenbrenner's ecological systems theory underscores the family environment as a critical, immediate setting that shapes adolescent development. Empirical studies consistently show that emotional support, open communication, and familial cohesion are positively linked with higher levels of self-esteem and PGI [1,37,54]. Evidence from both Western and Chinese research contexts supports the notion that nurturing family microsystems foster a sense of psychological safety, which in turn helps adolescents develop a stable sense of self and more proactive coping capacities [49,52,56,68]. (2) Complementing this, Lazarus' model sheds light on how environmental contexts shape internal cognitive responses. Specifically, self-esteem plays a regulatory role in how adolescents evaluate stressors, thereby aiding emotional balance under pressure [36,41]. Adolescents with high PGI are more likely to engage in adaptive coping, which reduces the likelihood of anxiety and depressive symptoms [27,59]. Supporting this, previous findings affirm PGI's contribution to enhanced resilience and emotionally self-regulated behavior [35,62]. Notably, Robitschek [11] demonstrated that PGI can also reinforce self-esteem's effectiveness in managing stress. This dynamic becomes particularly relevant in

situations involving family instability, where internal strengths can serve as protective buffers against adverse environmental pressures ^[53,57].

These evidence supports the integrated model's assertion that family-based environmental inputs and individual-level psychological resources interact to influence emotional development, which offering a more comprehensive and culturally adaptable framework.

5.2. Implications of adolescents in family education

The family environment is a critical factor influencing the quality and effectiveness of family education. Supportive families provide emotional support and a sense of security, helping adolescents develop positive self-identity and healthy personality traits ^[47] (Liu et al., 2022). The nature of supportive environment in families characterized by harmonious environments, strong intimate relationships, and democratic communication, play a crucial role in adolescent growth and education ^[69]. This study supports such a view: supportive families create a warm and inclusive environment that reduces the occurrence of negative emotions and equips adolescents with the adaptability to overcome challenges. Cultivating a supportive family environment should be a central goal of family education to foster adolescents' comprehensive development in academics, psychological well-being, and social skills, and the implications as following:

Addressing Family Conflict and Enhancing Emotional Communication:

Adolescent emotional health suffers in the context of high-conflict family environments, but communication and emotional support are protective factors that promote stability and resilience. Therefore, family education should aim to train children in conflict resolution and collaborative problem solving, and parents in improving their emotional communication skills ^[38,70]. Research shows that open emotional communication within families contributes significantly to adolescent self-esteem and emotional regulation. Family therapy, along with systematic training sessions, has been proven to reduce familial tensions, increase cohesion, and strengthen adolescents' self-esteem and emotional resilience ^[47,50]. In particular, family-based interventions that incorporate parental emotional support have been associated with improved coping strategies and reduced anxiety in adolescents ^[19,71].

Fostering Self-Esteem and Personal Growth Initiative:

Family-centered programs should prioritize improving emotional communication, warmth, and cohesion as foundational elements for enhancing adolescent self-esteem. Since self-esteem mediates the relationship between family environment and emotional health, interventions training parents in validation techniques, emotional expressiveness, and secure attachment-building can notably boost adolescents' self-concept and lower their susceptibility to anxiety and depression ^[35-36,66]. These programs also should integrate activities that build both perceived competence and relational worthiness, consistent with Mruk's ^[33] model of functional self-esteem in positive psychology for enduring emotional stability and resilience. Parenting workshops emphasizing consistent support, minimal conflict interactions, and structured family therapy methods such as EFFT are particularly effective in cultivating these relational aspects ^[47].

The moderating effect of PGI underscores the importance of incorporating proactive coping skill development into interventions targeting adolescents. Programs that foster PGI, through structured goal-setting activities, autonomy-supportive counseling approaches, and reflective exercises, can enhance adolescents' ability to reframe stress in a more constructive light and sustain emotional stability in the face of pressure ^[7,57,62]. These strategies become particularly crucial for youth growing up in environments marked by low family cohesion or frequent conflict, where external support may be limited. In such contexts, PGI serves as a

vital internal resource, equipping adolescents to navigate challenges with greater resilience and self-direction [44,59].

This study's theoretical integration suggests that interventions should avoid addressing self-esteem and PGI in isolation. Instead, a multilevel approach is recommended, one that simultaneously strengthens family relational environments and develops individual coping capacities. Schools, community centers, and mental health practitioners should collaborate to implement family-inclusive resilience-building programs, especially considering that adolescent depression requires multifaceted therapeutic strategies, including early psychoeducation, emotional regulation training, and supportive family involvement [72]. For instance, school-based interventions could include both parent-adolescent emotional literacy workshops and student PGI-focused personal development curricula. Ultimately, the proposed framework offers a culturally adaptable, theory-driven foundation for comprehensive interventions, particularly in settings where family structure and emotional norms vary. By addressing both proximal environmental determinants and internal cognitive resources, such interventions can more effectively support adolescents' long-term emotional well-being.

5.3. Limitation and future directions

Although this review followed a systematic approach to enhance methodological transparency and rigor, several limitations inherent to the review process must be acknowledged. First, the search strategy, while comprehensive, was limited to four major databases (Web of Science, Scopus, PsycINFO, and CNKI) and only included studies published in English and Chinese. This may have resulted in language and publication bias, potentially omitting relevant studies published in other languages or in grey literature sources. Second, despite clearly defined inclusion and exclusion criteria, the heterogeneity of study designs, measurements, and cultural contexts across the included studies posed challenges for data synthesis. The review did not employ meta-analytic techniques due to variability in outcome operationalization, which limits the ability to quantify effect sizes or assess statistical relationships across studies.

To advance this field, future research should employ longitudinal and cross-cultural designs to explore how the examined variables interact dynamically over time and across sociocultural contexts. Incorporating emerging models such as the biopsychosocial framework may enrich theoretical understanding. Practically, these findings highlight the need for multi-level interventions targeting both environmental and individual factors, including family education, school-based programs, and policy-level support. By addressing these methodological and conceptual gaps, future studies can build a more robust and generalizable framework for promoting adolescent emotional well-being.

Conclusion

This review undertook a systematic literature synthesis grounded in the PRISMA framework to examine empirical and theoretical studies exploring the interplay among family environment, self-esteem, PGI, and adolescent emotional health. By integrating Bronfenbrenner's Ecological Systems Theory with Lazarus' Cognitive Motivational Relational Theory, the review introduces a multidimensional perspective that captures both environmental and individual-level influences on adolescents' emotional well-being. The evidence consistently shows that a supportive family context strengthens emotional resilience, with self-esteem acting as a key mediator and PGI further reinforcing this protective pathway.

These findings underscore the importance of developing interventions that not only improve external conditions, such as family dynamics, but also cultivate internal resources like self-worth and proactive coping. Through a methodologically rigorous, transparent, and replicable approach, this review brings coherence to a body of research that is often fragmented, while also drawing attention to gaps in theory and limitations in

existing methodologies. In particular, it highlights the ongoing need for longitudinal, culturally contextualized, and methodologically diverse investigations to refine and substantiate the proposed framework. Ultimately, this study deepens the current understanding of adolescent emotional health and offers valuable guidance for educators, caregivers, and policymakers aiming to foster healthier developmental environments.

Conflict of interest

The authors declare no conflict of interest.

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