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The Social Determinants of Depression through Structural Factors among Adolescents in Low- and Middle-Income Countries: A Scoping Review

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Abstract

In low- and middle-income countries (LMICs), adolescent depression is one of the leading mental health problems with serious implications. The development of effective intervention strategies requires not only an examination of its biological and psychological determinants but also a critical analysis of the social factors influencing its prevalence and pattern. Methods- Guided by Arksey and O'Malley's framework, this scoping review examined the social factors influencing adolescent depression. A total of 48 primary studies were included, identified through searches across five databases and manual searches. Results- This review identified structural factors such as gender, socioeconomic status, ethnicity, and family structure as key risk factors for adolescent depression. In addition, stressors within the family, school, and neighborhood, including family conflict, harsh parenting, maltreatment, academic pressure, peer rejection, bullying, and exposure to neighborhood violence, were also found to contribute to depressive symptoms. In contrast, social support from family, peers, and teachers was identified as a significant protective factor. Conclusions- The review suggests that most existing studies rely on atomization which does not fully capture how structural factors contribute to cumulative stress by shaping the social settings of adolescents and leading to depressive symptoms. This review highlights critical gaps, particularly the under exploration of neighborhood influences and out-of-school adolescents as well.

Key words- Adolescent depression, protective factors, risk factors, social determinants, stressors

1. Introduction

Adolescence, spanning ages 10 to 19, is a critical developmental stage marked by significant biological, psychological, and social changes (1, 2, 3). These transitions expose adolescents to various social stressors ((Petersen et al., 1991, as cited in 4), making this period particularly sensitive, vulnerable, and highly stressful (5, 6). Failure to effectively manage this increased sensitivity can lead to heightened vulnerability to a range of internalized and externalized behavioral responses (7, 8).

Depression, one of the most prevalent adolescent mental health disorders, is marked by several symptoms—affective, motivational, physical, and social. These symptoms may be chronic or recurring and include loss of interest or pleasure, sadness, guilt or low self-worth, poor concentration, and thoughts of death (8, 9). Often, depression is recognized and treated only when physical symptoms such as weight loss and poor appetite become apparent (10). In addition to psychological and physical symptoms, depression leads to social withdrawal, reduced social engagement, and negative interactions (11). Depression is frequently

misidentified as an adult-specific condition (5), causing it to go unnoticed by parents, teachers, and caregivers, which delays diagnosis and treatment (8).

The global burden of depression is considerable. Approximately 970 million people worldwide live with a mental disorder, and depression ranks as the third leading burden of disease (12). The number of individuals living with depression increased by 18.4% from 2005 to 2015 (13), reaching 300 million in 2018 (12). Excluding the COVID-19 pandemic's impact, depression is projected to become the second most common cause of disability by 2030 (14, 15). Depression affects healthy functioning and is associated with symptoms such as tiredness, low mood, sadness, guilt, and feelings of inferiority (16, 17, 18, 19). When persistent, these symptoms diminish interest in everyday activities and impair daily functioning (8).

Depressive symptoms can emerge early in life (20, 21, 22). Adolescents face heightened risks during this stage due to biological, emotional, and social transformations (23, 24, 25). Adolescence is also a period marked by uncertainty, vulnerability, responsibility, and relational difficulties (4, 26, 27). WHO (28) reported that depression accounts for 16% of the global mental disorder burden in adolescents and contributes to 40–60% of premature mortality (29). Shefaly, Esperanza Debby Ng (30) found that 34% of adolescents are vulnerable to depression, surpassing even the rates for young adults aged 18–25.

In LMICs, where 90% of the world's 1.2 billion adolescents live (UN as cited in 31), depression is a major concern. In African and Asian countries, where communicable diseases are already prevalent, depression often goes underrecognized and undertreated. A study in sub-Saharan Africa reported a depression prevalence of 26.9% among adolescents (32).

Ethiopia reflects these broader patterns. Over one-fifth of its population consists of adolescents (33). Estimates from the Federal Ministry of Health place mental health disorder rates in this group at 12% to 25%, with depression more prevalent than HIV/AIDS (34). A systematic review by Kalkidan, Eniyew (35) reported a 27.7% prevalence of mental illness among adolescents in Addis Ababa. Furthermore, WHO (36) reported an age-standardized suicide rate of 11.4% in Ethiopia.

Understanding depression requires attention to more than individual biological or psychological factors. The WHO (36)defines social determinants as "the conditions in which people are born, grow, work, live and the wider set of forces and systems shaping the conditions of daily life." While biomedical and psychological models focus on individual-level factors, social approaches highlight the significance of social integration, inequality, and cultural influences (37, 38, 39). The stress process theory (40) and Bronfenbrenner's ecological systems theory emphasize how social environments—family, school, and neighborhood—shape adolescents' mental well-being (41).

The family offers essential emotional and social support (17, 42, 43). Schools are primary environments where adolescents experience academic pressure, bullying, and teacher-student interactions (11, 44). Neighborhoods also play a growing role during adolescence by offering or limiting opportunities for social interaction and community support (45, 46).

Studies show that adolescents from low-income families, single-parent or divorced households are more exposed to family conflict, maltreatment, strained relationships, and school-based stressors (24, 47, 48, 49). Meanwhile, stable family environments, positive parental involvement, academic success, peer acceptance, and supportive school and neighborhood settings can buffer against depressive symptoms (50, 51, 52, 53).

1. Statement of the Problem

Children and adolescents (CA) are the foundation of a nation's future, and their development directly influences national progress. According to the UN (54), nearly 30% of the global population is under the age of 18. This period of life is pivotal for shaping long-term physical and mental well-being (1, 52, 55). Despite this, adolescent mental health, particularly depression, is often underrecognized and inadequately addressed in LMICs.

Traditionally, the causes of depression have been explained through biological and psychological frameworks (49, 56). However, such approaches overlook the complex social contexts in which adolescents grow and function. Adolescents spend their lives embedded within families, schools, and neighborhood settings that form an interconnected social network that shapes their daily experiences (11, 44). Attempting

to understand adolescent depression without considering these environments is akin to detaching the soul from the body.

Social stress theory posits that external stressors in these environments—such as poverty, family instability, academic pressure, or neighborhood violence—can lead to depressive symptoms (45). However, it is also evident that not all adolescents exposed to such stressors develop depression (43, 46). Many exhibits resilience, particularly when they benefit from strong social capital and support from parents, peers, teachers, and community members (37, 42).

This scoping review, grounded in Pearlin's stress process theory, seeks to synthesize research from LMICs that examines how social contexts—particularly family, school, and neighborhood environments—influence adolescents' experiences of depression. The aim is to identify knowledge gaps, strengthen contextual understanding, and inform public health strategies for prevention and early intervention in resource-constrained settings like Ethiopia and beyond.

The primary objective of this review was to examine the social determinants of depression among adolescents in low- and middle-income countries (LMICs). Specifically, it aimed to explore how social factors—mediated through contexts such as family, school, and neighborhood environments—contribute to stress and, in turn, lead to depression. Additionally, the review sought to identify gaps in the existing literature to guide future research in this area.

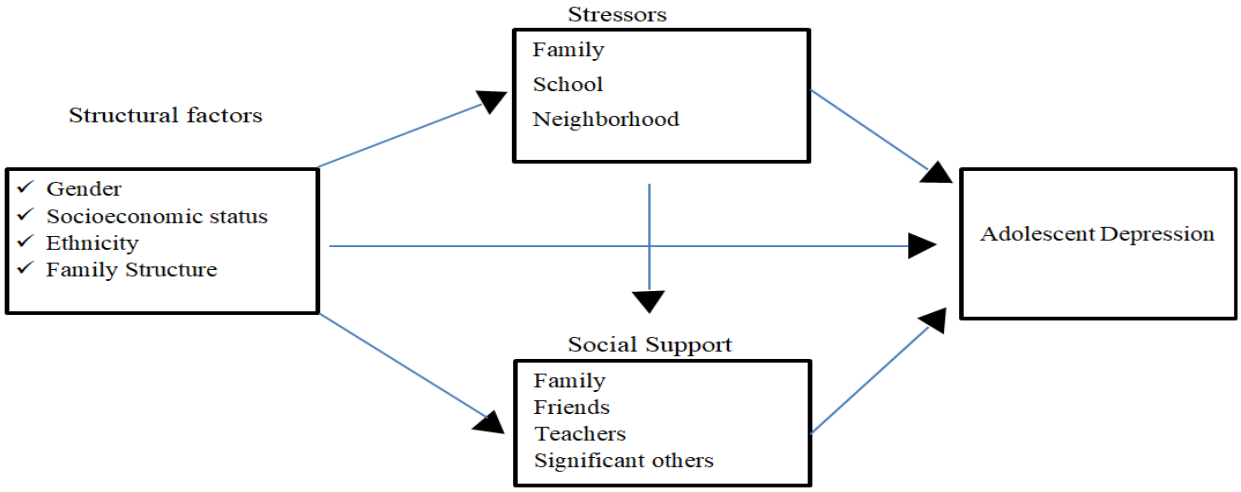

Fig 1- Conceptual framework of the study (based on Pearlin's stress process theory)

Research Question

The primary objective of this review was to examine the social determinants of depression among adolescents in low- and middle-income countries (LMICs). Specifically, it aimed to explore how social factors—mediated through contexts such as family, school, and neighborhood environments—contribute to stress and, in turn, lead to depression. Additionally, the review sought to identify gaps in the existing literature to guide future research in this area

2. Method

The purpose of this study was to systematically map research investigating the social determinants of adolescent depression within the context of LMICs. A detailed protocol for this scoping review was pre-printed on medrixiv (57). The review process was conducted using Covidence, and a summary of the key modifications made to the protocol is provided below.

2.1 Eligibility Criteria

This review included empirical studies published in English between January 2010 and December 2023 that examined the social factors of depression among adolescents residing in LMICs. Studies using any research methodology were considered, provided they included a general sample (excluding adolescents with diagnosed biological or psychological conditions) and examined risk/protective social factors influencing adolescent depression.

2.2 Data Source and Search Strategy

The primary databases searched included Google Scholar, PsychINFO (via Ovid), Web of Science, PubMed, Sociological Abstracts (via ProQuest), and Embase (via Ovid). A set of search terms was employed to encompass all potential terminology related to adolescent depression, with the full list detailed in the protocol. Search results were organized using EndNote reference management software.

2.3 Screening and Data Extraction

An initial search using terms approved by BB, AA, and DD retrieved 48,468 records. After removing 42,045 duplicates with Covidence, 6,417 records remained for title and abstract screening. AA and DD excluded 5,964 irrelevant records, leaving 453 for full-text review. Additionally, 16 studies were identified through manual searches using backward citation and a Google search of the review's title, and were directly included in the full-text assessment.

Before the full-text review, AA and DD independently screened a sample of retrieved records to ensure consistent application of eligibility criteria, achieving a 94% inter-rater agreement, which exceeded the 80% threshold (58). Discrepancies were resolved through discussion. Of the 453 potentially relevant articles, 48 were included in the review. All the included studies had been peer reviewed.

Key data, including study design, sampling method, data collection, and findings, were extracted by AA and verified by DD, CC, and EE. The article selection process, following PRISMA guidelines, is presented in Figure 2.

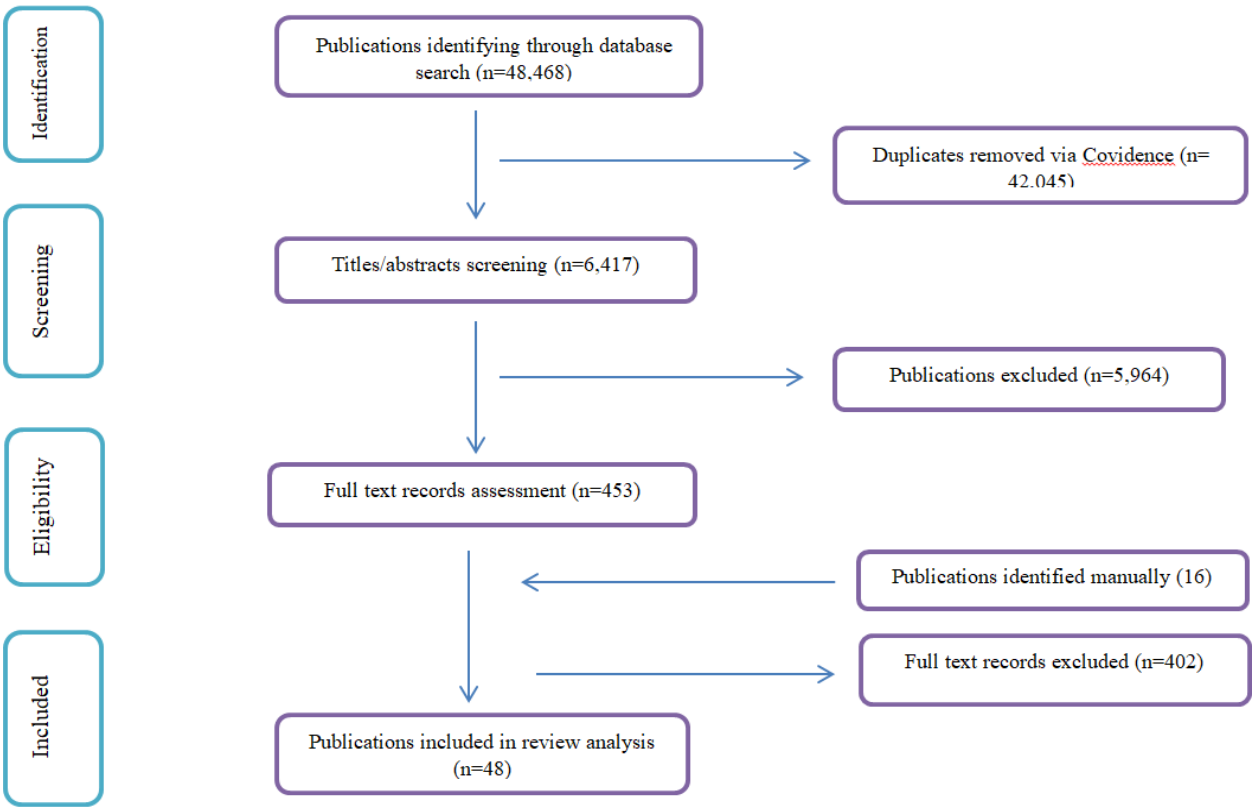

Fig 2 The PRISMA flow diagram

The selected records were uploaded into ATLASt.ti Version 9, where AA and DD independently coded a randomly selected 10% sample. Following feedback from BB and CC, AA and DD proceeded to independently code the remaining records. To ensure consistency and reliability, regular discussions were held to address any coding discrepancies and review the content of the codebook. These meetings facilitated the alignment of coding approaches and the comparison of results.

1.4 Characteristics of Included Studies

Out of the 48 studies included in this review, more than half, 25 studies (52.1%), were conducted in China. Five studies (10.4%) were from India, three from Malaysia, and two each from Ethiopia, Kenya, Nepal, and Pakistan. The remaining seven studies were from seven different countries: Albania, Brazil, Cambodia, Indonesia, Jamaica, Macedonia, and South Africa. When considering the publication dates, 33 studies were published in 2020 or later, while the remaining 9 studies were published between 2015 and 2019 and the remaining 6 studies were published between 2010-2014.

The majority of the studies (40) reviewed were cross-sectional, with only a few (8) adopting longitudinal or panel designs. Only one employed a qualitative research approach (59). Of the remaining 47 quantitative studies, 46 relied on probability sampling techniques to select respondents, with only two (60, 61) using non-probability sampling methods.

Although all the studies focused on adolescents, three also included other groups: parents (59, 62), siblings (63), as well as teachers and professionals (59). Except two studies (59, 64) which involved adolescents with a history of depression being treated in psychiatric clinics, all the remaining studies examined school-going adolescents. This review included data from over 108,000 participants, with individual study sizes varying from 72 to 14,500 people. Nearly all participants, 99.9%, or roughly 108,350, were adolescents

The Center for Epidemiologic Studies Depression (CES-D) Scale (62, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74) and the Children's Depression Inventory (CDI) (60, 75, 76, 77, 78, 79, 80, 81, 82) were used to screen adolescent depression in twelve and nine studies, respectively. The Patient Health Questionnaire-9 (PHQ-9) (3, 72, 83, 84, 85, 86) and the Beck Depression Inventory (BDI) (23, 63, 87, 88, 89, 90) were each used in six studies. The Depression Self-Rating Scale for Children (DSRSC) (61, 91) and the Four-Item Feeling Scale for the Past Seven Days (92, 93) were each used in two studies. The remaining eleven studies used other psychometric instruments to screen for depression.

2.5 Changes to the Pre-Published Protocol

There were some modifications made to this review compared to the pre-published protocol. First, the original protocol specified an age range of 10–18 years for included adolescents. As we reviewed the studies, we noticed that a few used average ages (like 63, 94), while others included people over 18 (such as 59, 91). Some didn’t even mention age ranges at all (for example, 23). Rather than sticking rigidly to defining adolescence as the age range 10-19, we decided to include any study that looked at children older than 10.

Second, the protocol was initially limited to studies conducted in urban areas, but this review was broadened to include studies conducted by making both urban and rural as their study settings. Third, the inclusion of gray literature was originally planned in the protocol, but the broad scope of the review, the challenges of integrating gray literature specific to individual countries, and concerns about potential biases pushed us to stick to peer-reviewed journal articles.

Finally, while the protocol emphasized searching specific databases, an initial assessment of titles and abstracts revealed that many studies originated from China and predominantly focused on the family domain. To address this imbalance and achieve a more comprehensive review, manual searches were conducted with other team members to identify additional studies, particularly those examining school and neighborhood domains, for full-text review.

2. Results

Age

Five studies directly measured the association between age and depressive symptoms, reporting a positive correlation that indicated older adolescents experienced higher levels of depression (3, 62, 64, 70, 75, 81, 84, 85, 86, 95, 96, 97, 98). Studies using grade level as a proxy for age found that high school students reported more depression than middle school students (67, 70), who in turn reported more than primary school students (99).

Gender

Studies indicated that girls tend to report higher levels of depression compared to boys (23, 64, 66, 69, 70, 71, 72, 73, 74, 75, 78, 79, 83, 84, 85, 92, 95, 96, 97, 98, 99, 100, 101). Girls from low socioeconomic backgrounds (64), with low parental education (82, 98, 101), or from single-parent households (98) are more likely to experience depression than boys. Family-related stressors, such as poor paternal and maternal relationships (69, 73, 96), family conflict or violence (64, 85, 95), high maternal control(70), and adverse childhood experiences like abuse, maltreatment, and negative life events (66, 92, 95), increase the risk of depression among girls. Adolescent girls frequently experience school-related stressors, including intense academic pressure (72, 97, 98), bullying (69, 102), insufficient peer support (64), and a lack of school connectedness (96). Beyond the school environment, neighborhood-related stressors, such as witnessing act of violence (85), also disproportionately affect girls.

Socioeconomic Status

Objective and subjective measures were used to assess whether socioeconomic status (SES) predicts depressive symptoms in adolescents. Objective indicators included family income (70, 75, 101), home ownership (101), material possessions (68), as well as parental education and employment status (66, 70). Subjective assessments, relying on adolescents' self-perceived SES rankings, were utilized in four Chinese studies two cross-sectional and two longitudinal (67, 72, 82, 92).

The majority demonstrated an inverse relationship between socioeconomic status (SES) and adolescent depression (66, 67, 68, 70, 72, 75, 92, 101). The predominant negative association may be explained by several protective factors associated with higher SES. These include improved maternal care (70), reduced academic stress (99), stronger parent-child bonds (92, 99), and greater access to social support networks (68).

However, two notable exceptions emerged: Qin (82) study of Chinese middle school students found no significant association, while Alex, Cynthia (94) reported a positive correlation between parental education levels and depression symptoms among girls attending both public and private schools.

Ethnicity

Two studies specifically examined ethnicity as a social determinant factor. A Chinese study established a significant correlation between ethnic background and depression (80). A South African study by Bach and Louw (78) concluded that exposure to violence and maltreatment predicted depressive symptoms more strongly than either ethnic background or gender.

Family Structure

Studies have shown that adolescents from nuclear (94, 98, 101) and smaller families (83) are more likely to suffer from depression, as those from larger families tend to have stronger social networks and greater emotional support, both of which serve as protective factors against stress and depression (83, 94). Although adolescents with siblings have been found to experience higher rates of depression than only children, this association is significantly weakened when there are positive parent-adolescent relationships (79).

Family Stressors

Adolescents exposed to life events such as parental illness, alcohol use, death, divorce, and related hardships, as well as stressful daily events, face a higher risk of developing depressive symptoms compared to their peers (60, 66, 72, 80, 84, 89, 90, 94, 95, 103). Negative parenting practices, including physical and emotional punishment by parents (101), maternal rejection or under protective behavior (75), high maternal control (70), lack of parental supervision (71, 83), and parenting through lying (104), were shown to significantly increase the risk of depressive symptoms.

Studies consistently demonstrated that conflict between adolescents and their parents (59, 74, 93, 96, 104), as well as conflict among other family members (85, 94, 99, 101) significantly increased the risk of depressive symptoms. Notably, girls appeared more susceptible to the negative impacts of parental quarrels and emotional punishment, particularly from mothers (96) and fathers (73).

Exposure to adverse childhood experiences (ACEs) increased vulnerability to depressive symptoms (95). Quantitative studies conducted in China (79), Kenya (95), South Africa (78), and Ethiopia (83), along with

a qualitative study conducted in Nepal (62), found that adolescents with a history of abuse and neglect were more likely to suffer from depression. A study in Indonesia reported that such adolescents were 6.5 times more likely to suffer from depression (76). Compared to physical or sexual abuse, psychological child abuse was found to be a more significant predictor of early-onset depression (69, 77), whereas maltreated or abused girls specifically had a significantly higher risk of depression than boys, with the risk more than doubling (66, 92).

School Stressors

Comparing to their peers with lower stress levels adolescents experiencing high levels of academic stress were two to four times more likely to exhibit depressive symptoms (23). Academic stress contributing factors include excessive test schedules (94), attending extracurricular tutoring sessions after school hours (72), and experiencing academic frustration (87).

On the other hand, high-achieving students report fewer depressive symptoms (82), poor academic performance increases the risk of depressive symptoms, especially in higher grade levels (101). Strong evidence also showed an increase of academic pressure from families and teachers and the development of depressive symptoms in adolescents (64, 72, 80, 87, 94).

Lack of peer acceptance, the absence of positive relationships, and a lack of supportive peers at schools significantly increase the risk of depression in adolescents (59, 94, 96, 99). Adolescents who have been bullied are 3.7 times more likely to experience depressive symptoms compared to their peers (71). Prolonged exposure to bullying victimization (65, 86), especially for those who frequently engage in bullying behaviors (3, 69, 71, 81, 86, 91), significantly increases the risk of developing depressive symptoms.

Research consistently demonstrates a strong association between bullying involvement and depressive symptoms. As Dervishi, Lala (81) and Ibrahim, Sherina Mohd Sidik (3) found, both victims and perpetrators of bullying show elevated risk for depression, with boys being particularly vulnerable to these effects (91). Beyond peer relationships, the quality of student-teacher interactions appears equally significant. Adolescents experiencing frequent conflicts with teachers, harsh disciplinary measures, or inadequate teacher support similarly show increased susceptibility to depression (64, 96).

An Indian longitudinal study by Alex, Cynthia (94) revealed notable differences in depressive symptoms between school types, with students in high-pressure private schools showing greater vulnerability to depression compared to their public school counterparts. However, this finding contrasts with research from China (67) and India (23), which identified government school attendance as a potential risk factor for depression. Interestingly, while many parents consider boarding schools beneficial for instilling discipline, evidence suggests that separation from family may heighten depression risk among boarding students (75).

Neighborhood Stressors

Research examining the link between neighborhood context and adolescent depression remains limited, with only two studies addressing this relationship directly. A Jamaican cross-sectional study explored how adolescents' perceptions of community violence influenced their depression risk, finding that positive neighborhood relationships served as a protective factor against depressive symptoms (100). Notably, public school students, who were more likely to reside in disadvantaged neighborhoods marked by crime, violence, and other adversities, exhibited higher depression rates compared to their private school peers. These findings align with research from Cambodia, where exposure to community violence, whether experienced or witnessed, was positively associated with adolescent depression (101).

Social Supports

Adolescents who receive strong social support from family and friends have a significantly lower risk of developing depression (60, 79, 80, 103). Compared to boys and children without siblings, girls and those with siblings who maintain strong relationships with their parents exhibit fewer depressive symptoms (79). Studies consistently showed that positive family atmosphere and parental behavior enables to improve improving coping mechanisms and reducing the risk of depressive symptoms (61, 63, 68, 69, 70, 74, 82, 85, 88, 90, 92, 96, 97, 99, 101, 104, 105).

Similarly, high levels of peer acceptance (90) and positive peer relationships (59) are associated with reduced depressive symptoms. Furthermore, adolescents who have positive relationships with their teachers and receive sufficient support are less likely to experience depression than their peers (68, 70, 88, 96, 99, 103).

3. Discussion

This review aimed to examine the association between social factors and adolescent depression, with a particular focus on LMICs. It synthesized findings from 48 studies identified through both database and manual searches. Of these, 76% investigated family-related factors, 48.1% examined school-related factors, and only two studies explored neighborhood-related factors, highlighting it as the least studied area in the literature.

The review reveals significant regional and methodological gaps, with the majority of studies conducted in Asia, particularly China, and minimal representation from Africa, Europe, and South America. Most studies are cross-sectional, with few employing longitudinal designs, and only one qualitative study, highlighting the need for more diverse and robust study methodologies. Additionally, the exclusive focus on school-going adolescents leaves the experiences of out-of-school youth largely unexplored.

Consistent with prior research conducted both in high-income countries and low- and middle-income countries (24, 106, 107, 108), older adolescents were more likely to report higher levels of depressive symptoms**.** School grade, a common proxy for age, similarly correlated with increased depression risk. This trend is potentially explained by the heightened academic pressures, social transitions, and neurobiological changes during later adolescence (106, 109).

The consistent finding that girls report higher levels of depression than boys is also widely documented in adolescent mental health research. Over half of the studies included in the review found that girls report higher levels of depression than boys, a pattern well established in adolescent mental health literature (110) (83, 107, 108, 111, 112, 113, 114). This gender disparity is likely influenced by a confluence of factors, including differential exposure to stressors and varying coping mechanisms. The review highlights that the intersection of gender with socioeconomic adversity, parental education, and single-parent households disproportionately burdens girls (64), (82, 98, 101) (98). Notably, girls also face compounding risk factors within family (64, 69, 73, 85, 95, 96), (70) (66, 92, 95)., school(69, 72, 97, 98, 102), (64), and neighborhood (85, 96). .

The inverse relationship between socioeconomic status (SES) and adolescent depression was largely reaffirmed, indicating that lower SES is associated with a higher prevalence of depressive symptoms. This association is attributed to various interconnected factors, including increased likelihood of resource deprivation (115), disruptions in effective parenting (116), exposure to abuse and traumatic events (83, 101, 117), financial stress leading to family conflict (83, 118, 119), residence in disadvantaged neighborhoods (120), and exposure to harsh parenting practices (121)., . However, the exceptions noted—a Chinese study finding no significant association and an Indian study reporting a positive correlation between parental education and depression among girls in both public and private schools—underscore the complexity of SES as a determinant and suggest that its influence may be modulated by cultural context, school type and specific indicators used.

Research conducted in high-income countries (122, 123) has demonstrated that, beyond nuclear and small families, diverse family structures including stepfamilies, blended families, and extended families significantly influence adolescent depression. Furthermore, transitions within family structures, such as divorce or remarriage, have been shown to have substantial impacts on adolescent mental health. The review suggests that adolescents from smaller or nuclear families may face a higher risk of depression, though evidence on the impact of family structure changes is limited.

While only two studies explicitly analyzed ethnicity, their findings suggest that exposure to structural violence, discrimination, and historical marginalization may mediate the association between ethnicity and depression. This aligns with broader literature on cultural stressors and identity conflict in minority populations (124). However, the limited exploration of ethnicity highlights a major gap in current research that needs to be addressed through more intersectional and culturally sensitive approaches.

The majority of studies in this review examined the relationship between depression and social stressors that adolescents experience within their family, school, and neighborhood. Consistent with previous research (24, 88, 114, 118, 123, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138) the findings of this review indicate that ACEs, such as neglect, family conflict, and exposure to stressful life events, are consistently linked to an increased risk of depression. However, certain non-traditional family risk factors—such as parental migration, caregiving by non-parental guardians, intergenerational trauma, and parental mental health (99, 139, 140) remain underexplored in existing research.

Research has established a strong correlation between academic-related stress, academic pressure, and depressive symptoms among adolescents (4, 132, 141). Consistent with these findings, this review indicates that increased academic demands and heightened expectations from parents and teachers, particularly as adolescents advance to higher grade levels, are associated with a greater risk of depression. Furthermore, peer rejection, bullying, and negative interactions with teachers have been linked to a higher prevalence of depressive symptoms. Adolescents from low socioeconomic backgrounds and those exposed to highly stressful academic environments appear to be particularly vulnerable.

Systematic reviews highlight that neighborhood conditions, including safety, discrimination, and community violence, are significant predictors of depressive symptoms (142, 143). Findings from two studies included in this review suggest that adolescents living in neighborhoods characterized by negative social interactions, low socioeconomic status, and high levels of violence, whether experienced directly or witnessed, are at an increased risk of developing depressive symptoms. However, the limited number of studies in this area highlights the need for further research to examine a broader range of neighborhood factors influencing adolescent mental health.

Conversely, positive parent-adolescent relationships and robust social support systems have been identified as protective factors, significantly reducing the likelihood of depression. These findings are supported by extensive research conducted in both high-income and low- and middle-income countries (24, 88, 114, 118, 123, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138).

Understanding the social determinants of adolescent depression necessitates a nuanced examination of how various factors interact across different domains (144, 145). Yet, existing research has predominantly analyzed these influences separately, with limited attention to how family and school environments might jointly shape mental health outcomes. This limitation restricts the understanding of the intricate interactions between various social determinants and adolescent depression. Additionally, the exclusive focus on school-going adolescents overlooks the experiences of out-of-school adolescents, who may be at a heightened risk of depression, particularly in LMICs.

4. Conclusion

This review underscores the multifaceted nature of adolescent depression in low- and middle-income countries (LMICs), revealing a complex web of social factors that extend far beyond individual vulnerability. Depression in adolescence cannot be fully understood without considering the broader environments in which young people grow, particularly their families, schools, and neighborhoods. However, the current body of research is limited in several critical ways. Most studies rely on cross-sectional designs, and there is a lack of qualitative work that brings adolescents' voices to the forefront. Furthermore, much of the literature is concentrated in a few countries, particularly in Asia, leaving vast regions, especially Africa and Latin America, underrepresented. Adolescents who are not enrolled in school are also largely absent from existing research. These gaps limit our understanding and hinder efforts to develop inclusive, culturally sensitive, and effective responses to adolescent depression.

1.1 Recommendations

Studies are needed not only quantify patterns of adolescent depression but also explore the deeper stories behind them. Longitudinal and qualitative research is essential to capture the evolving and lived experiences of adolescents, and to uncover the ways in which family dynamics, school environments, and neighborhood conditions interact over time.

There is also a pressing need to expand the geographic and demographic reach of research. Adolescents in underrepresented regions, such as Africa and Latin America, and those who are not attending school must

be actively included in research and intervention efforts. Their perspectives are crucial for building mental health systems that leave no one behind.

Girls, in particular, often face multiple overlapping vulnerabilities related to family structure, parental education, and socioeconomic status. However, boys' experiences should not be overlooked. A balanced, sensitive approach is needed—one that recognizes how gender interacts with other forms of social disadvantage to shape mental health outcomes.

Addressing the social roots of adolescent depression also means investing in relationships. Programs that strengthen parenting practices, train teachers to support students emotionally, and promote positive peer networks can make a meaningful difference. These relationships are not just protective, they are the foundation for resilience.

Ultimately, tackling adolescent depression in LMICs requires more than clinical treatment, it demands collective action across families, schools, communities, and governments. Only by acknowledging and addressing the social determinants of mental health can we create environments where adolescents are not only protected from harm but also given the opportunity to thrive.

1.2 Limitation and Future Research

This study primarily emphasized risk and protective social factors with adolescent depression. However, this approach is not exhaustive, as factors such as ethnicity, religion, cultural influences, and specific neighborhood characteristics, in addition to bio-psychological factors, can also contribute to adolescent depression. Additionally, while this review provides a comprehensive examination of social factors and their association with adolescent depression, it does not establish causal explanations.

The review prioritizes the family domain over school and community factors, with the limited focus on neighborhood characteristics (only two studies) highlighting a gap in understanding their role in adolescent depression in LMICs. Furthermore, the predominant use of quantitative research methods limits the discussion of adolescents lived experiences and perspectives regarding their depressive experiences. The overrepresentation of studies from China may also introduce bias and limit the generalizability of findings to other LMICs.

Therefore, future research should employ diversified research methods, include studies from a wider range of LMICs to enhance generalizability, incorporate more research on the community domain, and utilize qualitative research to gain a deeper understanding of adolescents' experiences with depressio

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