

How Mental Health Challenges During Adolescent Development Influence Risk-Taking Behaviours: A Literature Review

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ABSTRACT

Background: Adolescents are becoming more susceptible to mental health problems and risk-taking behaviours, profoundly impact their development and general well-being. Approximately 14% of adolescents worldwide encounter mental health problems. Risk-taking behaviours such as drug abuse, delinquency, and unprotected sexual activity are also linked to mental health problems. While numerous studies have explored adolescent mental health or risk-taking behaviour independently, few have systematically examined the relationship between these two variables. Thus, this literature review aims to synthesize recent evidence on the patterns, associations, and underlying mechanisms linking adolescent mental health problems with risk-taking behaviours, to inform prevention strategies and support adolescent development.

Methods: A systematic literature review was carried out using PubMed, Scopus, ScienceDirect, and Taylor & Francis Online. Boolean operators and set inclusion criteria were used to identify relevant English-language, open-access studies published between 2014 and 2025. Following the PRISMA framework, 34 studies were included in the review.

Results: The findings reveal a strong connection between adolescent mental health problems and involvement in risk-taking behaviours. Individuals with poor mental health are more likely to abuse drugs, have unsafe sex, and become aggressive. These behaviours harmed their physical health, education, and relationships with other individuals.

Conclusion: Understanding the relationship between risk-taking behaviours and mental health problems in adolescents is essential for implementation of effective preventative measures. Early mental health interventions, family involvement, and educational programmes are essential for mitigating risks and fostering optimum adolescent development.

Keywords: Mental health; Risk-taking behaviour; Adolescents

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INTRODUCTION

Adolescent mental health problems are a growing global concern. Approximately 14% of adolescents worldwide experience mental health challenges (1). In Malaysia, recent findings indicate that 19% of adolescents report depressive symptoms, with suicide attempt rates ranging from 6.2% to 8.7% (2). Similar trends have been observed globally; for instance, German studies have highlighted increasing cases of anorexia, bulimia, and self-harm among adolescents (3). The COVID-19 pandemic has further exacerbated mental health issues, triggering a significant increase in psychiatric emergencies such as suicide attempts and self-harm (4). Despite the growing prevalence, many adolescents remain untreated due to stigma and lack of access to mental health service (5,6).

Mental health well-being is essential for the healthy development of children and adolescents, facilitating their ability to learn, cultivate meaningful connections, and regulate emotions and stresses (7). Anxiety, depression, bipolar disorder, eating disorders, attention-deficit/hyperactivity disorder (ADHD), and conduct disorders are all examples of mental health diseases that fall on a continuum that ranges from mild suffering to severe disorders. Mood disorders, behavioural disorders, and anxiety disorders were the three categories that previous study used to categorise issues related to the mental health of adolescents (8). These issues can manifest themselves as internalising problems (such as anxiety and depression) or externalising problems (such as aggression and hyperactivity), with notable gender differences. Girls are more likely to exhibit internalising symptoms, whereas boys are more likely to display externalising disorders (9,10).

There is also a rise in risk-taking behaviours that are associated with adolescence. These behaviours include engaging in hazardous sexual practices, using substances, and engaging in aggressive activities, all of which have the potential to cause both bodily and psychologically harm (11). As a result of the considerable physical, cognitive, and socio-emotional changes that occur during this period of development, adolescents also acquire a sense of curiosity regarding their identity and the environment in which they find their self (13). As adolescents strive for independence, they often make decisions that can impact their future, including engaging in risk-taking behaviours. While these behaviours are typically associated with negative outcomes, recent study suggest that

risk-taking can also serve adaptive function and positive aspects, such as advocating for social causes and help adolescents to explore new environments and learn from experiences. Nonetheless, risky behaviours such as substance abuse and school absenteeism often correlate with negative outcomes, but they may be mitigated by thoughtful decision-making. Research by Kann et al. (2018) identified risk-taking behaviours such as unintentional injury, tobacco and drug use, and risky sexual practices, which contribute to morbidity and mortality (15). The frequency of these behaviours may also be influenced by gender. For instance, (17) found that male students in Malaysia exhibit a greater tendency towards risk-taking behaviours compared to their female peers (17). Young individuals experiencing mental health challenges exhibit a markedly higher propensity for engaging in risky behaviours, such as skipping school, using substances, and displaying aggression (18,19).

However, despite the growing body of literature, few studies holistically synthesise findings across the various forms of risk-taking behaviour and mental health challenges experienced by adolescents. Existing research often focuses on isolated behaviours or specific mental health conditions, limiting a comprehensive understanding of their interrelationship (20,21). Furthermore, inconsistencies in study designs hinder the comparability and generalisability of findings across different contexts. Thus, this systematic review aims to address these gaps by consolidating recent evidence to provide a clearer picture of how adolescent mental health problems are associated with engagement in risk-taking behaviours.

METHODS

This review adopts a systematic literature review design using PRISMA guidelines to ensure a transparent, rigorous, and replicable process for identifying, screening, and synthesizing relevant studies. A comprehensive literature search was conducted utilising four academic databases: PubMed, Scopus, ScienceDirect and Taylor Francis Online (**Figure 1**). The selection of these databases is based on their ability to offer a wide range of academic sources, peer-reviewed publications and robust search functionalities, facilitating the efficient and systematic retrieval of high-quality academic materials. The SPIDER framework was employed to refine and consolidate search terms pertinent to adolescent mental health problems and risk-taking behaviours. We employed the Boolean search

operators “AND” and “OR”. **Table 1** presents the complete list of search terms. The selection of this keyword was based on their relevance to the topic and alignment with the study’s objectives. The following were the criteria for studies that might be included; 1) peer-reviewed journal papers, 2) open access publications, 3) research published from 2014 to 2025, and 4) articles written in English. Studies were removed if they 1) did not have full text available, 2) had low methodological quality, or 3) were duplicate publications that used the same dataset. A 10-year range was selected to capture the most current and relevant research trends in adolescent mental health and risk behaviour. The procedure of choosing studies follows the PRISMA standards for systematic reviews and meta-analyses (22). The PRISMA flow diagram as in **Figure 1** shows the number of studies that were found, reviewed, checked for eligibility and finally included in the review. It also shows an overview of the screening and selection steps.

RESULT

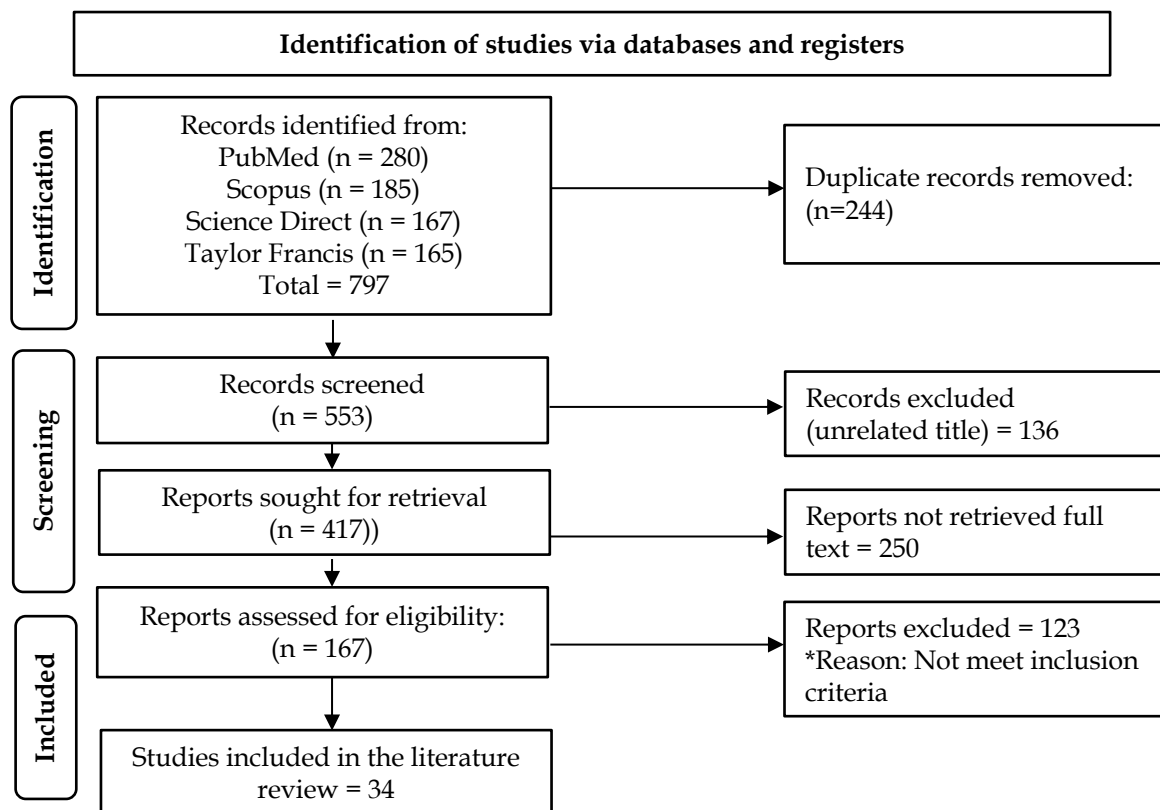
A total of 34 studies were included in the final analysis, as summarized in **Table 2**. Of these, 17 were cross-sectional studies, 4 were longitudinal studies, 4 were systematic reviews or meta-analyses, 2 were experimental studies, and 7 were perspective or literature reviews. The literature search yielded a broad selection of articles, which

were then screened based on titles and abstracts to assess relevance according to the inclusion criteria. Full-text articles were retrieved and independently reviewed by the authors. After applying the inclusion and exclusion criteria, 34 studies were selected for final inclusion in this review. Data extraction was conducted independently by the authors using a standardized data extraction form. Extracted information included authorship, year of publication, study design and methodology, key findings, as well as the strengths and limitations of each study. This process ensured consistency and reduced the risk of bias in data handling. To ensure methodological quality, all included studies were critically appraised using the Joanna Briggs Institute (JBI) checklist appropriate to each study design (23). All included studies were appraised using the Joanna Briggs Institute (JBI) checklists and were rated as good or excellent, ensuring that only high-quality studies were included in the final synthesis. This quality assurance step was essential to ensure the validity and reliability of the findings presented in this review. As outlined in the appendix 1, the analysis of the 34 included studies revealed five primary areas of focus whereas adolescent development and mental health, adolescent risk-taking behaviours, association between mental health problems and risk-taking behaviours, consequences of co-occurring mental health issues and risk-taking behaviours and mechanisms linking mental health problems and risk-taking behaviours.

Table 1: Keywords for Searching Literature Materials

Databases	Keywords used to base on the SPIDER framework	Number of articles
PubMed	<u>Sample/Population</u> adolescent*, teen*, youth* young people	280
SCOPUS	<u>Phenomena of Interest/</u>	185
Taylor Francis	mental health, psychological distress, depression, anxiety,	165
Science Direct	emotional problems, stress <u>Designs</u> questionnaire*, survey*, interview*focus group, case stud*, observ* <u>Evaluation/comparison</u> risky behaviour, reckless behaviour, delinquent behaviour substance use <u>Research Type</u> qualitative, quantitative, mixed methods, systematic reviews	167
	*Keywords in each category and in between categories were combined using Boolean ‘OR’ and ‘AND’	
	Total	797

Figure 1: PRISMA Flow Diagram



Based on the analysis and synthesis in **Table 2**, out of the 34 reviewed studies, 17 discussed adolescent development and mental health, while 14 focused on adolescent risk-taking behaviours. Twenty-one studies reported a clear association between mental health problems and risk-taking behaviours. In terms of mechanisms linking the two, five studies discussed biological factors, ten explored psychological mechanisms, and eight addressed social influences. Regarding the consequences of co-occurring mental health issues and risk-taking behaviours, six studies highlighted physical outcomes, five focused on mental consequences, four on social effects, and three on emotional impacts. Additionally, substance use was discussed in 11 studies, risky sexual practices in six, and delinquency in five studies.

DISCUSSION

Adolescent Development and Mental Health

The adolescent years, ranging from ages 10 to 19 years old, represent a critical phase of human development characterized by significant transitions in physical, mental, social, and emotional capabilities (1,24). During this stage, adolescents undergo puberty-related transformations that influence self-esteem, body

changes, and interpersonal relationships (24). Cognitive development is marked by the maturation of the prefrontal cortex around this age, which leads to complex thinking, planning, and decision-making (25). In the socio-emotional context, adolescents navigate identity formation, autonomy, and social integration through peer relationships (26).

Mental health problems are increasingly prevalent among adolescents, with 14% suffering from conditions such as depression and anxiety; even many cases remain undiagnosed due to stigma and lack of access to care (27). In 2021, Malaysia reported the highest age-standardised prevalence of mental disorders among ASEAN countries, with an estimated rate of 13.2%, reflecting a 12.6% increase since 1990 (28). Depression, in particular, has emerged as the most common mental health issue among adolescents, associated with increased suicide risk, impaired academic performance, and diminished quality of life (29). Notably, the prevalence of adolescent depression has surged in the post-COVID-19 era, with rates nearly doubling from 13% to 25%, highlighting the urgency for targeted mental health interventions (30). Anxiety, another common concern, is often characterized by unease and physiological symptoms, affects a significant proportion of adolescents, with social anxiety disorders

De Lijster et al., 2018					√		√			√								√	√
Duell et al., 2018	√														√				
Dumontheil, 2016		√							√						√				
Dyer et al, 2019				√			√												
Erhabor et al, 2023	√																	√	
Essau et al, 2014				√					√										
Folayan et al., 2021	√									√		√							
Graham & Kahn, 2019			√						√								√		
Grigsby et al., 2023					√													√	√
Kim et al, 2021	√						√												
Kim et al., 2020				√														√	√
Kok & Low, 2019	√								√								√		
Mohamed et al, 2023	√								√	√									
Murray et al., 2021			√									√							
Patel et al., 2018			√													√			
Peltzer & Pengpid, 2021	√											√							
Pozuelo et al., 2022					√													√	
Riehm et al., 2019				√						√	√	√							
Roy et al., 2023	√							√		√			√						

Smith et al., 2014				√																√
Smout et al., 2023	√									√	√	√								
Thept hien & Celyn, 2022	√										√							√		
Willo ughby et al., 2021		√														√				
Youn g et al., 2017		√								√	√	√								
Yusof f et al., 2014	√										√							√		

Mental health outcomes among adolescents are shaped by a complex interplay of genetic, familial, and environmental factors. Biological and hormonal influences contribute to gender disparities in mental health, with females exhibiting a higher predisposition to anxiety disorders (31). Family support plays a crucial protective role, while dysfunctional family environments may exacerbate genetic vulnerabilities, increasing the risk of developing mental health disorders (24,34). Additionally, socioeconomic status impacts mental health, with adolescents from lower-income backgrounds facing heightened risks due to exposure to stressors such as financial instability and violence (35). Cultural factors further shape misconceptions about mental health, affecting how adolescents seek and receive support (36).

Adolescent Risk-Taking Behaviours

Adolescents often engage in various risk-taking behaviours, including substance use, risky sexual practices, and delinquency activities, which carry significant health and social consequences (12,37,38). Smoking and vaping remain prevalent, with adolescent e-cigarette use rising from 9.8% in 2017 to 14.9% in 2022 in Malaysia (19). Early tobacco use is associated with subsequent addiction and increased susceptibility to risky behaviours such as alcohol and drug consumption (35). Drug use among adolescents is concerning, with 5.2% reporting lifetime drug use, often influenced by curiosity, peer pressure, and lack of self-worth (12). Similarly, alcohol use during adolescence has been linked to poor academic performance and heightened risk of mental health

disorders (32,39).

Risky sexual behaviours, including engaging in unprotected sex and having multiple partners, increase the likelihood of reproductive health issues (40). Adolescents with a history of childhood sexual abuse are particularly at higher risk of engaging in premature sexual activities (12). Although the overall reported prevalence of adolescent sexual activity in Malaysia remains relatively low, studies indicate that underlying psychosocial stressors and limited protective factors place many adolescents at substantial risk (4,39). Moreover, mental health conditions such as depression, anxiety, and suicidal ideation have been shown to significantly correlate with increased engagement in risky sexual behaviours (21,40,41). In addition to substance use and sexual behaviour, delinquent activities such as theft, and aggression are also common, stemming from developmental imbalances between sensation-seeking and impulse control (42). Delinquent behaviours are also often influenced by various psychosocial factors, including age, family dynamics, and experiences of abuse (43).

The Association Between Mental Health Problems and Risk-Taking Behaviours

A substantial body of evidence highlights the strong association between adolescent mental health problems and increased engagement in risk-taking behaviours, including substance use, risky sexual activity, and delinquency (12,18,44). Adolescents with poor mental health often engage in substance use as a form of self-medication to alleviate distress (35,45). For instance, tobacco use

among adolescents with depressive symptoms is associated with dopamine deficits, reinforcing smoking habits as a temporary coping mechanism (35). Similarly, alcohol and drug consumption are correlated with mental health struggles, worsening attention, memory, and executive functioning, leading to increased reliance on substances (39).

Mental health disorders are also increasing the likelihood of risky sexual behaviour. Adolescents diagnosed with anxiety or depression are more likely to engage in unprotected sex and reported multiple sexual partners, thereby increasing their risk of contracting sexually transmitted infections (STIs) and unintended pregnancies (21,41). Moreover, delinquency and aggression are linked to mood disorders. Depression-related irritability contributes to confrontational and violent behaviour, while anxiety-induced frustrations heighten aggression (10,20).

Mechanisms Linking Mental Health Problems and Risk-Taking Behaviours

The intersection between mental health problems and adolescent risk-taking behaviours is shaped by an interplay of biological, psychological, and social mechanisms. Neurodevelopmental factors influence behaviour, with prefrontal cortex maturation affecting impulse control and decision-making (25). Dopaminergic sensitivity increases adolescents' attraction to novelty and risky behaviours, exacerbating mental health challenges (46,47). Psychological mechanisms such as impulsivity, peer pressure, and the need for social approval, further reinforce risk-taking behaviours (48,49).

Social influences play a key role in adolescent mental health. Peer relationships shape behaviour, with social validation driving engagement in risk behaviours (24). Supportive family environments mitigate risks, while dysfunctional family dynamics amplify susceptibility to mental health disorders (26). Cultural factors, particularly in collectivist societies like Malaysia serve as protective factors by fostering strong family bonds, yet social stigma may discourage help-seeking behaviours (36).

Consequences of Co-occurring Mental Health Issues and Risk-Taking Behaviours

The co-occurrence of mental health problems and risk-taking behaviours during adolescence may lead to adverse biological, psychological and social outcomes.

Biologically, engagement in substance use like drugs may contribute to chronic health conditions (50). Risky sexual behaviours increase the incidence of sexually-transmitted infections (STIs) and unintended pregnancies (40). Emerging evidence also suggests that smoking may alter brain structures, increasing susceptibility to depression (51). Over time, the cumulative effect of these risk-taking behaviours, compounded by untreated mental health issues like depression and anxiety, can lead to a deterioration of overall physical health, decreased life expectancy, and increased healthcare utilization (52).

Psychologically, adolescents frequently engage in risky behaviours as a coping method for emotional distress, which can exacerbate existing mental health problems. Such behaviours have been linked to increased emotional turmoil, including higher levels of stress, anxiety, and suicidal thoughts (53). Furthermore, mental health difficulties in adolescents typically impaired their concentration and motivation, making it difficult for them to deal with academic demands (32,54).

The social consequences of mental health problems and associated risk-taking behaviours are equally significant. Academically, affected adolescents are more likely to experience school disengagement, higher dropout rates, and limited career prospects (32,54). Their interpersonal relationships will also be negatively affected, with increased instances of isolation, bullying, and family conflict (55). Moreover, risk behaviours can lead to legal problems and other social setbacks, compounding their emotional and psychological burden (53).

Strengths of The Review

This review's strength lies in its systematic approach using PRISMA guidelines and the inclusion of diverse study designs, which enhances the robustness of the findings. The incorporation of both global and Southeast Asian studies improves its cultural relevance, while the use of a standardised quality appraisal ensures the reliability of included evidence.

CONCLUSION

The relationship between adolescent mental health and risk-taking behaviours is shaped by complex developmental, psychological, and social factors. To tackle these challenges effectively, it is essential to implement thorough strategies that encompass early intervention, family support, education, and community-based initiatives

aimed at reducing risks and promoting healthy development. Future research should focus on culturally sensitive interventions and the growing influence of digital media on adolescent wellbeing. By implementing integrated and context-specific measures, we can better support adolescents' mental health and reduce their engagement in harmful behaviours, promoting healthier developmental outcomes.

LIMITATIONS

Several limitations have been identified in this review that may influence the interpretation and generalisability of the findings. Although this review followed a systematic and rigorous approach, several limitations must be acknowledged. Firstly, restricting the review to English-language and open-access articles may have excluded relevant studies, introducing selection bias. Secondly, many of the included studies were cross-sectional, which limits the ability to draw conclusions about causality. Thirdly, there was notable variation in how mental health issues and risk-taking behaviours were defined and measured, making comparisons and synthesis more difficult.

CONFLICT OF INTEREST

The authors affirm that there are no conflicts of interest associated with this study.

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AUTHOR CONTRIBUTIONS

SZB: Drafted the manuscript and contributed to the conceptualization, design, data collection, analysis, and interpretation for the article.

SHAH, MKZHF, WHWM: Critically revised the manuscript, enhancing its intellectual content, proofreading and approved the final version.

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