



# A LITERATURE REVIEW OF CAREGIVER RISK FACTORS FOR ADOLESCENT SUBSTANCE USE

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## ABSTRACT

**Background:** Adolescent substance use is a significant public health concern in Canada, with rates of alcohol use reaching 75%, and both cannabis and tobacco use reaching 26%, in Ontario schools. This behaviour poses serious health risks, including dependence, neurocognitive deficits, and mental health challenges. Caregiver influence plays a critical role in shaping adolescent substance use. Currently, there remains a gap in the literature regarding prevention and intervention strategies tailored to at-risk youth that specifically consider caregiver-related risk factors.

**Objective:** To identify evidence-based parental risk factors for adolescent substance use, to inform future prevention and intervention strategies.

**Methods:** 420 studies were identified from an initial search for studies related to adolescent (defined as aged 10-19) substance use and parents.

**Results:** 11 unique parental risk factors for adolescent substance use were identified. Low parental monitoring (24) and prenatal substance exposure (20) had the greatest number of studies and the largest compiled study populations. Seven risk factors were related to the parent-child relationship, such as low parental support and high parental permissiveness. Interparental conflict and parental substance use were also identified as significant risk factors. Three parent-child relationship factors, low parental punishment, low parental communication, and harsh parenting, had few but recent studies, indicating they may be emerging research topics in parent-child dynamics.

**Conclusion:** This review identified several caregiver-related factors commonly associated with adolescent substance use, including prenatal

substance exposure, low parental monitoring, and poor parent-child communication. While findings suggest these factors may interact in complex ways, further research is needed to clarify how they contribute to risk and how they might inform the development of supportive, family-centered prevention efforts.

## INTRODUCTION

The use of substances such as alcohol and cannabis among adolescents in Canada remains prominent, despite gradual declines in areas such as tobacco. Responses from the province-wide Ontario Student Drug Use and Health Survey indicated that up to 60% of students in grades 7–9 reported using various substances at some point in their lives [1]. In Ontario specifically, 75% of grade 12 students reported lifetime alcohol use, 26% reported lifetime cannabis use, and 26% reported lifetime nicotine use [1]. These patterns highlight the continued relevance of addressing substance use during adolescence, a critical period for physical, socioemotional, and cognitive development [2]. Early initiation of substance use (which we defined as any consumption of a substance regardless of duration) is associated with an increased likelihood of dependence and long-term health consequences [3]. Substance-abusing youth are at higher risk than nonusers for mental health issues, including major depressive disorders, anxiety disorders, and personality disorders [4]. Additionally, early substance use can lead to neurocognitive deficits, such as impaired memory, hindered academic performance, and decreased cognitive control [3]. These risks underscore the importance of identifying and mitigating factors that contribute to substance use during this vulnerable stage of development.

Parental influence is widely recognized as a key factor in

adolescent substance use. Research has consistently shown that caregiver behaviors, attitudes, and styles can shape an adolescent's risk of substance use [5]. For example, parental substance use is strongly linked to higher rates of adolescent substance use. Contrastingly, authoritative parenting, marked by high involvement and communication, is associated with a lower risk of adolescent substance use [6][7]. Despite this substantial body of research, there is a lack of standardization in how parental influence is measured. Studies vary in their focus, examining an array of factors such as parental monitoring (which we defined as the process by which parental knowledge may be enhanced), communication, and attitudes toward substances. This variability in research focus underscores the need for more unified approaches to studying parental influences.

Given the critical role caregivers—including parents, guardians, or anyone who has a primary role in looking after the child—play in shaping adolescent behavior and the complex interplay of factors involved, this review seeks to compile existing research on the primary risk factors related to the caregivers of at-risk children. By exploring the available literature, we aim to provide a clearer understanding of the pathways through which caregivers' parenting styles, genetic factors, and substance use contribute to adolescent substance use, offering insights to inform prevention and intervention strategies.

## METHODS

### 1.1 OVID Medline Search

This literature review was conducted via a search of the Ovid MEDLINE. The search string in Ovid MEDLINE are listed on Appendix 1.

### 1.2 Inclusion/Exclusion Criteria

The search process and the inclusions/exclusions at each stage are detailed in Figure 1. The initial search was conducted on January, 2025. 421 search results were imported into the software Covidence, with duplicates automatically identified and removed.

Studies were eligible if they:

- Reported on caregiver for factors that the study defined as risks for adolescent substance use, to assess relationship between caregiver-related behaviours/factors and adolescent substance use.
- Any form of adolescent substance use.
- Included Adolescents (aged 10-19).
- Were a prospective observational study.
- Set in North America to control for cultural similarity.

The exclusion criteria included:

- $n > 50$ , to ensure sufficient sample size for study.
- Systematic reviews.
- Articles published prior to 1980, due to vast

differences in substance use prior to 1980, specifically pertaining to marketing and general impression of smoking [45].

### 1.3 Study Selection & Exclusion Process

After screening 420 articles by title and abstract, 94 studies remained for full-text screening. Of these, 63 were excluded for the following the following eight reasons: outdatedness (1 article); abstract-only paper (12 articles); conducted outside of North America (10 articles); focusing on outcomes unrelated to research question (8 articles); wrong comparator (5 articles); wrong intervention (6 studies); wrong study design (12 articles); sample size ( $n < 50$ ) (1 article). Ultimately, 31 articles were included in this review (appendix 2).

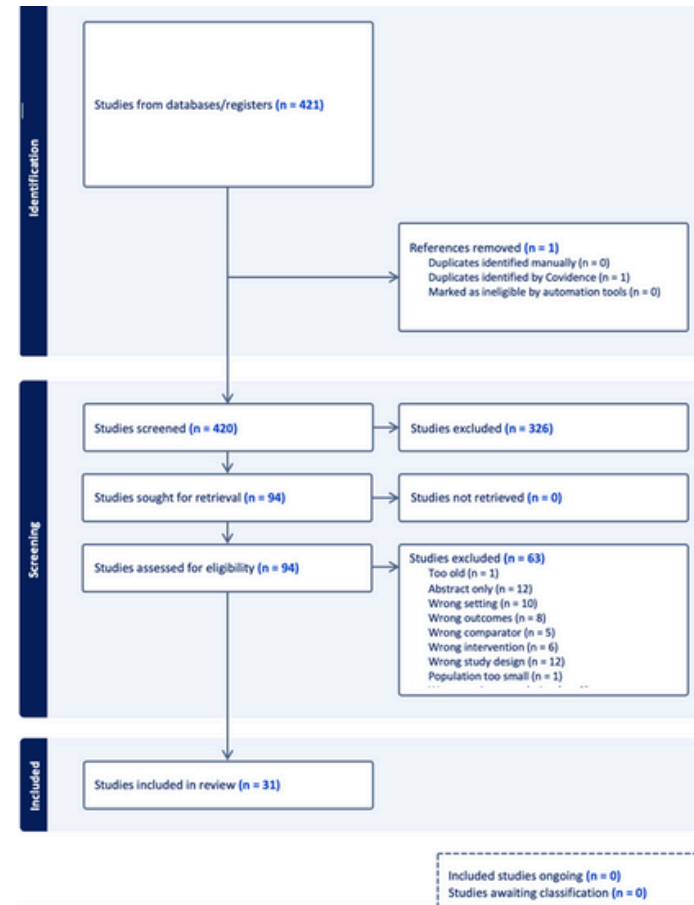


Figure 1. PRISMA Flow Diagram

## RESULTS

The literature review revealed variance in both the number of studies and the number of participants associated with parental risk factors. We identified 11 unique variables. Prenatal substance exposure and low parental monitoring were the most extensively researched risk factors, with 24 and 20 studies, respectively, and were associated with the largest participant samples (44,633 and 45,307 participants). There was also significant evidence connecting parental substance use, poor parent-child relationships, low parental knowledge, low parental support, interparental

conflict, and high parental permissiveness to adolescent substance use, though to a lesser extent. In contrast, low parental punishment, low parental communication, and harsh parenting were each examined in only one study and involved similarly small participant samples of less than 1,000. These patterns suggest a robust background of evidence and research interest in parental risk factors with a few emerging topics—the three least researched factors were all published within the last seven years.

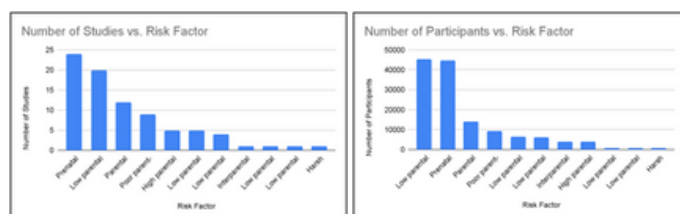


Figure 2. Study & Participant Distribution Across Parental Risk Factors

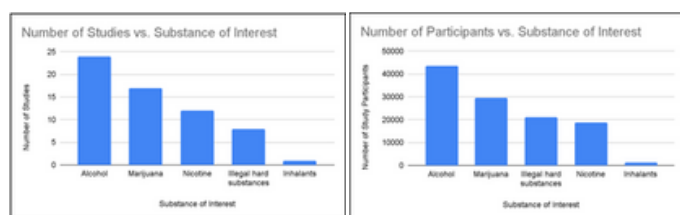


Figure 3. Study & Participant Distribution Across Various Substance Classifications

Findings from the literature review identify alcohol and marijuana as the most studied substances, included in 24 and 17 studies respectively, with the largest participant samples at 43,424 and 29,703. In contrast, nicotine was included in 12 studies and had a smaller pooled participant sample size of 18,649 when compared to alcohol and marijuana.

## DISCUSSION

This literature review identified prenatal substance exposure and low parental monitoring as leading contributors to adolescent substance use risk. Prenatal substance (alcohol, cocaine, cigarette) exposure is consistently associated with adolescent externalizing behaviors, such as fighting, bullying, or vandalism, and impulsivity [41]. These behaviors lead to an increased likelihood of initiating substance use [40].

Parental monitoring, the actions taken by a caregiver to determine their child's whereabouts, also plays a key role in mediating adolescent substance engagement [41]. Low parental monitoring is connected to a greater association with deviant peers and risk-taking behaviors [42]. It is also positively associated with other parental risk factors identified in this study [43]. Our research found that this process can be impaired by parental substance use, poor parent-child relationships, and limited parental communication [17,19,23,36,38]. This interconnectedness highlights the cumulative nature of these risk factors, where one vulnerability in the parent-child dynamic may amplify the effects of others. Other

major risk factors were related to the nature of the parent-child relationship, with the exception of interparental conflict. Although not directly related to the child, interparental conflict likely interferes with many typical processes that improve the parent-child relationship and lead to increased parental support and knowledge [34]. For instance, heightened conflict between parents can reduce the time and emotional resources available to engage with the child, potentially leaving them more susceptible to external influences such as peer pressure.

It also aimed to identify major research interests and developing topics within parent-child dynamics. Prenatal substance exposure is likely the most researched due to the simplicity of exposure measurement and extensive hospital records. Conversely, we believe low parental monitoring to be so commonly associated with adolescent substance use due to its comorbidity with other risk factors, acting as a pathway for increased risky behavior and peer deviance. This review also identified three emerging topics of research in parent-child dynamics. Low parental punishment, low parental communication, and harsh parenting all produced p-values lower than 0.05 in their respective studies and were all conducted within the last seven years. These emerging topics suggest growing research interest in more nuanced parenting behaviours and their influence on adolescent substance use. Identifying low parental punishment as a risk factor challenges growing notions that reduced discipline is inherently protective by avoiding harsh parenting [25][33]. Cox et al. identified that it may fail to establish clear boundaries and expectations, leading to an increase in adolescent autonomy without adequate guidance [25]. Conversely, over-disciplining through harsh parenting is also a potential risk factor as it may contribute to externalizing behaviours and rebellion, increasing susceptibility to substance use [44]. Parental communication is another emerging topic, representing a growing emphasis on a bilateral relationship between parents and their children [25]. This process may empower adolescents and increase their autonomy without diminishing parental knowledge or monitoring [25].

Parental factors associated with adolescent substance use are deeply interwoven. As we identify key risk factors, it is important to maintain a holistic lens to design interventions and support at-risk families. No individual factor stands alone, and the parent-child relationship is defined by constantly changing interactions and dynamics as children grow and develop. For example, low parental monitoring may stem from broader issues such as parental stress or substance use. Similarly, poor parent-child relationships can exacerbate other risk factors, such as low parental communication or support, which creates a feedback loop that increases the risk of adolescent substance use.

The distribution of research across substances of interest also provided valuable insights into social trends



surrounding substance use in North America. Alcohol and marijuana were the most studied substances. The abundance of research surrounding these topics reflects significant public health concerns regarding their widespread use and impact among adolescents. The focus on marijuana is particularly notable given its recent legalization in Canada, while alcohol remains widely socially accepted. These findings indicate an abundance of statistically significant studies that connect adolescent substance use to parental risk factors, highlighting the need for further research investigating the roles parents can play in adolescent substance use and how they may be supported.

Further, nicotine was the third most researched substance. Its lower inclusion in research may reflect the decline in traditional tobacco use in Canada since the 1960s, as the dangers of smoking became more widely recognized [39]. However, despite this decline, nicotine use remains prevalent among adolescents due to the rise of new, popularized methods such as vaping and e-cigarettes [40]. These methods have gained significant traction among youth, which may explain the continued concern and need for research into their usage patterns and associated risks [40]. The shifting landscape of nicotine consumption underscores the importance of ongoing monitoring and the development of tailored prevention strategies to address these emerging trends.

## LIMITATIONS

Methodologically, some limitations include the extraction process and quality assessment for articles. Firstly, while every other stage of the screening phase required two author consensus in order to be included/excluded from the study, data extraction required only one reviewer. While data extraction is often more objective than the prior two phases, it could have been beneficial to include more reviewers during data extraction to come to a consensus on the data being withdrawn.

## FUTURE DIRECTIONS

This review demonstrated areas where there is potential for further research and analysis. For instance, there is a significant lack of studies originating from Canada, and many studies from the United States were highly regional. Nation-wide studies could be useful in collecting more data regarding the effects of caregiver risk factors in different areas of North America. Furthermore, there is limited study on inhalants, another area where potential for further research lies, especially with the growing usage of e-cigarette products in adolescent populations.

## CONCLUSION

The unique contribution of this review was as an open-ended, systematic data synthesis of parental risk factors associated with adolescent substance use. It compiled a list of key factors that may be targeted through caregiver-focused interventions and potential future topics of research. Caregivers should be included in future research on adolescent substance use, and their key role in mediating adolescent substance use risk should be reflected in national primary prevention strategies and family-based interventions.

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## APPENDIX

Search Number	Ovid MEDLINE Searches	Results
1	"Adolescent substance use".mp.	1581
2	"Adolescent alcohol use".mp.	829
3	"Teenage drug use".mp.	18
4	"Adolescent cannabis use".mp.	283
5	"Youth marijuana use".mp.	38
6	"Adolescent tobacco use".mp.	210
7	"Adolescent cigarette use".mp.	35
8	"Adolescent electronic cigarette use".mp.	14
9	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8	2941
10	"Parental identification and response".mp.	1
12	"Parental maltreatment".mp.	57
13	"Parental style".mp.	154

Appendix 1. OVID MEDLINE Search String

14	Parenting.mp.	38826
15	"Family Stress".mp.	1465
16	Maternal.mp.	402621
17	Paternal.mp	32149
18	"Parental drug use".mp.	85
19	"Parental practices".mp	315
20	"Parenting behaviors".mp.	215
21	"Family structure".mp.	4387
22	"Parent-child relationship".mp.	2258
23	Prenatal.mp	214200
24	10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23	595688
25	9 and 24	426

### Appendix 1. OVID MEDLINE Search String (continued)

Study ID	Country	Study design	Unique Population Characteristics*	Total number of participants	Adolescent age at assessment**	Risk factors	Adolescent substance use measures
Brody 1993	United States	Cross sectional study		80	(11,15)	High parental permissiveness; Poor parent-child relationship; Prenatal substance exposure; Low parental monitoring	Illegal hard substances; Marijuana; Alcohol
Anderson 1994	United States	Cross sectional study		489	(13,20)	Prenatal substance exposure; Low parental support	Illegal hard substances; Marijuana; Alcohol
Bogensneider 1998	United States	Cross sectional study		1227	(13,19)	Prenatal substance exposure; Low parental monitoring	Illegal hard substances; Marijuana; Inhalants
Simons-Morton 2005	United States	Cohort study		2453	(11,16)	High parental permissiveness; Parental substance use; Prenatal substance exposure; Low parental monitoring	Alcohol
Walder 2007	United States	Cohort study		1,514	(10,13)	Parental substance use; Prenatal substance exposure	Nicotine; Illegal hard substances; Marijuana; Alcohol
Herman-Stahl 2008	United States	Cross sectional study		7910	(12,17)	Prenatal substance exposure; Low parental monitoring	Illegal hard substances; Marijuana; Alcohol
Branstetter 2009	United States	Cohort study		200	(14,17)	High parental permissiveness; Poor parent-child relationship; Low parental monitoring	Marijuana; Alcohol
Luk 2010	United States	Cross sectional study		1308	(15,17)	Poor parent-child relationship; Prenatal substance exposure; Low parental monitoring	Nicotine; Marijuana; Alcohol
Bahr 2010	United States	Cross sectional study	Race; Gender; Geography	4983	(12,19)	Parental substance use; Prenatal substance exposure; Low parental monitoring; Low parental support	Alcohol
Abar 2014	United States	Cross sectional study	Race	5419	(12,15)	Low parental knowledge; Poor parent-child relationship; Prenatal substance exposure	Marijuana; Alcohol
Minnes 2014	United States	Cohort study		358	(12,16)	Prenatal substance exposure	Nicotine; Illegal hard substances; Marijuana; Alcohol
Rioux 2016	Canada	Cohort study		209	(15,16)	Low parental monitoring	Alcohol
DeGenna 2016	United States	Cohort study		456	(16,17)	Low parental knowledge; High parental permissiveness; Parental substance use; Prenatal substance exposure; Low parental monitoring; Low parental support	Nicotine
Choi 2017	United States	Cohort study		784	(14,16)	Poor parent-child relationship; Prenatal substance exposure	Nicotine; Alcohol
Kelly 2017	United States	Cross sectional study		117	(13,18)	Prenatal substance exposure; Low parental monitoring	Alcohol
DeGenna 2017	United States	Cohort study		784	(16,17)	Parental substance use; Prenatal substance exposure	Nicotine
Diggs 2017	United States	Cohort study		215	(18,20)	Low parental knowledge; Poor parent-child relationship; Parental substance use; Prenatal substance exposure; Low parental monitoring	Alcohol
Rusby 2018	United States	Cohort study		400	(13,15)	Poor parent-child relationship; Parental substance use; Low parental monitoring	Marijuana; Alcohol

Yoon 2018	United States	Cross sectional study	Race; Gender; SES	685	(12,15)	Poor parent-child relationship; Prenatal substance exposure; Low parental monitoring	Nicotine; Illegal hard substances; Marijuana; Alcohol
Epperson 2018	United States	Cohort study	Race; Ethnicity	1536	(15,17)	Parental substance use; Prenatal substance exposure; Low parental monitoring	Nicotine
Cox 2018	United States	Cohort study		848	(15,18)	Parental substance use; Other: low parental punishment, low parental communication	Alcohol
Hill 2018	United States	Cohort study		363	(13,20)	Poor parent-child relationship; Parental substance use; Prenatal substance exposure; Low parental support	Marijuana
Voce 2020	United States	Cross sectional study		1056	(14,19)	High parental permissiveness	Alcohol
Sartor 2020	United States	Cohort study	Race; Gender; SES	1,869	(8,18)	Low parental monitoring; Other: parental involvement	Nicotine
Zheng 2021	Canada	Cohort study		842	(13,18)	Prenatal substance exposure; Low parental monitoring; Harsh parenting	Alcohol
Paige 2022	United States	Cohort study		338	(11,17)	Parental substance use; Poor parent-child relationship	Nicotine; Marijuana; Alcohol
Bray 2022	United States	Cohort study	Race; Gender	4067	(14,19)	Prenatal substance exposure; Low parental monitoring; Interparental conflict	Alcohol
Pelham 2023	United States	Cohort study		8,780	(10,17)	Prenatal substance exposure; Low parental monitoring	Nicotine; Illegal hard substances; Marijuana; Alcohol
Larroulet 2021	United States	Cross sectional study		263	(14,19)	Parental substance use; Prenatal substance exposure	Marijuana
Parlette 2022	United States	Cross sectional study		132	(12,20)	Low parental knowledge; Prenatal substance exposure; Low parental monitoring	Marijuana; Alcohol
Clinchard 2024	United States	Cohort study	SES	237	(13,18)	Low parental knowledge; Prenatal substance exposure; Low parental monitoring	Nicotine; Marijuana; Alcohol

\*Unique population characteristics identifies studies that looked at specific populations that did not represent the general population.

\*\*The square bracket indicates the second value being non-inclusive of the study population.

**Appendix 2. Population & Assessment Information of Included Studies;** this appendix compiles the study characteristics extracted from our search. Unique population characteristics refer to studies that targeted a specific population.