



Tailoring parenting styles and family-based interventions cross-culturally as an effective prevention strategy for youth substance use: a scoping review

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Background: The challenge of substance use among youth continues to be a highly concerning public health issue across the globe. The notion that parenting lifestyles and family-based intervention can help in the prevention of adolescent substance use have received robust attention from policy makers, researchers' clinicians and general public, nonetheless, there is scarcity of high quality evidence to support these concepts.

Objective: To review available literature which assessed the effects of parenting styles and family-based interventions on the prevention of adolescent substance use.

Methods: A scoping review of literature to identify studies published in English between 2012 and 2022 was conducted searching Scopus, MEDLINE, PsychInfo, and CINAHL databases focused on effects of parenting styles and family-based interventions in the prevention of adolescent substance use. Keywords of family-based intervention strategies and possible outcomes of parenting styles on youth substance use were coded from the results, discussion, or conclusion. Strategies were inductively categorized into themes according to the focus of the strategy.

Results: A total of 47 studies, published between 2012 and 2022 in English language included. Narrative synthesis illustrated that parental involvement, restriction of mature-rated content, parental monitoring, authoritative parenting styles, and parental support and knowledge can help in the prevention of adolescent substance use. On the contrary, poor parent-child bonding, overprotection, permissive parenting, parental frustrations, authoritarian and harsh parenting styles promoted adolescent substance use disorders. Proximal risk factors like peer influence, previous use of other substances, and risky behaviours had more effect than just parenting styles. Culturally tailored family-based intervention strategies such as "Preventive Parenting", "Parent Training", and "Parent Involvement", with focus on "Technology Assisted Intervention", particularly "SMART" (Substance Misuse among Adolescents in Residential Treatment) are found as effective family-based intervention strategies to mitigate substance use in youth.

Conclusion: Culturally tailored family-based behavioural strategies psychosocial intervention strategies can be considered of the most effective strategies to prevent substance use disorders in youth.

Key words: addiction, adolescent, family-based psychosocial intervention, parenting style, substance use

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Introduction

The responsibility and the role played by parents in shaping and helping their children face challenges during adolescence is crucial. Notably, the challenge of substance use among youths, in the form of marijuana, tobacco, alcohol, and other illicit substance use, continues to be a highly concerning and preventable cause of adolescent morbidity and mortality^[1]. It sets into stone a behavioural health pattern that proves to be debilitating for the rest of their lives. One of the primary causal factors for substance use disorder has been impaired parenting and family functioning, which is the leading cause of ineffective parenting^[2]. For instance, parental substance use is prospectively associated with a greater tendency of adolescent substance use, relatively high levels of conflict, anger, criticism, harsh parenting, and hostility, and lower levels of cohesion, support, and warmth; and problematic parenting styles, practices, and communication^[3,4].

Evaluation of predictors of adolescent substance use patterns from various parenting approaches shows that outcomes of

parental perceptions, attachment styles, dimensions of parental attitudes, mediators (such as overprotection and parental monitoring) along with psychosocial interventions vary across different cultures^[5-7]. Parental bonding styles and overprotection levels are associated with the onset and the use of substances. Permissive physical coercion, non-reasoning or punitive, and verbal hostility parenting styles were significantly associated ($P < 0.05$) with cannabis use in youth^[8]. Parental alcohol-specific strict rule-setting reduces adolescent tobacco and cannabis use in addition to alcohol use. Parenting style dimensions such as demandingness, confident parenting, and open communication may lead to effective substance use prevention. Parent training interventions may prove to be effective preventive strategies to reduce youth substance use regardless of the gender, age, or race/ethnicity of the adolescent^[4,9], (Odhiambo *et al.*, 2022). The notion that parenting lifestyles and family-based intervention can help in the prevention of adolescent substance use have received robust attention from policy makers, researchers' clinicians and general public, nonetheless, there is scarcity of high quality evidence to support these concepts. Therefore, a scoping review was conducted to identify researches on parenting styles and family-based interventions used on the prevention of adolescent substance use^[10]

Methods

This scoping review adhered to the methodological framework of the PRISMA Extension for Scoping Reviews (Tricco *et al.*, 2018)^[11].

Eligibility criteria

Inclusion criteria

Studies were selected for inclusion in the current scoping review with the following inclusion criteria:

- Studies focusing exclusively on parenting styles applied to adolescents with substance use issues.
- Studies with participants whose age ranges between 12 and 18 years.
- Studies available and published between 2012 and 2022 in English.
- Empirical primary studies including original articles with various study designs such as Randomized controlled trials, case series, prospective analysis, retrospective analysis, controlled trials, and comparative studies.
- Full-text secondary materials sources, including other systematic reviews, meta-analyses, and experimental studies.

Exclusion criteria

Studies were excluded in the current review based on the following exclusion criteria:

- Grey literature including non-peer-reviewed publications.
- Studies published in languages other than English.

Search criteria and Information sources

PubMed/Medline, PsycINFO, and Google Scholar were search. Separate search strategy was used in each database (Supplementary table 1, Supplemental Digital Content, <http://links.lww.com/MS9/A288>). A combination of subject terms and keywords was used in the search, which indexed parenting, intervention, substance-related disorders and adolescent.

HIGHLIGHTS

- Culturally tailored psychosocial intervention methods including family-based behavioural strategies can be considered one of the most effective strategies to prevent substance use disorders in youth.
- Restriction of mature-rated content, authoritative parenting styles, and involvement, monitoring, support, and knowledge of parents discouraged adolescent substance use.
- On the contrary, poor parent-child bonding, overprotection, permissive parenting, parental frustrations, authoritarian and harsh parenting styles promoted adolescent substance use disorders.
- Proximal risk factors like peer influence, previous use of other substances, and risky behaviours had more effect than just parenting styles.

Study selection

Search results were imported to Excel sheet and two independent reviewers performed title and abstract screening and full-text screening. Any discrepancies between reviewers were resolved through discussion.

Data Extraction

Based on the eligibility criteria, two independent reviewers performed data extraction. From each included study, information about authors, year of publication, study design, participants, intervention and main outcomes were extracted^[12].

Data analysis

The Excel tool in Microsoft office version 2019 was used to plot graphs and charts depicting various parental control outcomes. The data plotted include substance use prevalence among adolescents, depressive and anxiety episodes, and parental mature-rated restrictions. Additionally, the odds ratio analysis of the various parenting styles was obtained from different studies used to calculate the adjusted odds ratio.

Bias assessment

The JBI, a critical evaluation tool created by the Joanna Briggs Institute, was used to assess the risk of bias in the studies that were included. JBI quality analysis tool was used as it provides the means of accommodating the various study designs of the included studies. JBI score higher than 70% were classified as having a high quality, those with a score between 50 and 70% as having a medium quality, and those with a score less than 50% as having a low quality.

Results

Study selection

The initial search in the online databases using the mentioned keywords identified 1278 studies. After the removal of 337 duplicates, only 941 studies were left. The abstracts and titles of the remaining studies were scanned to determine their significance for the scoping review. After elimination, 129 articles

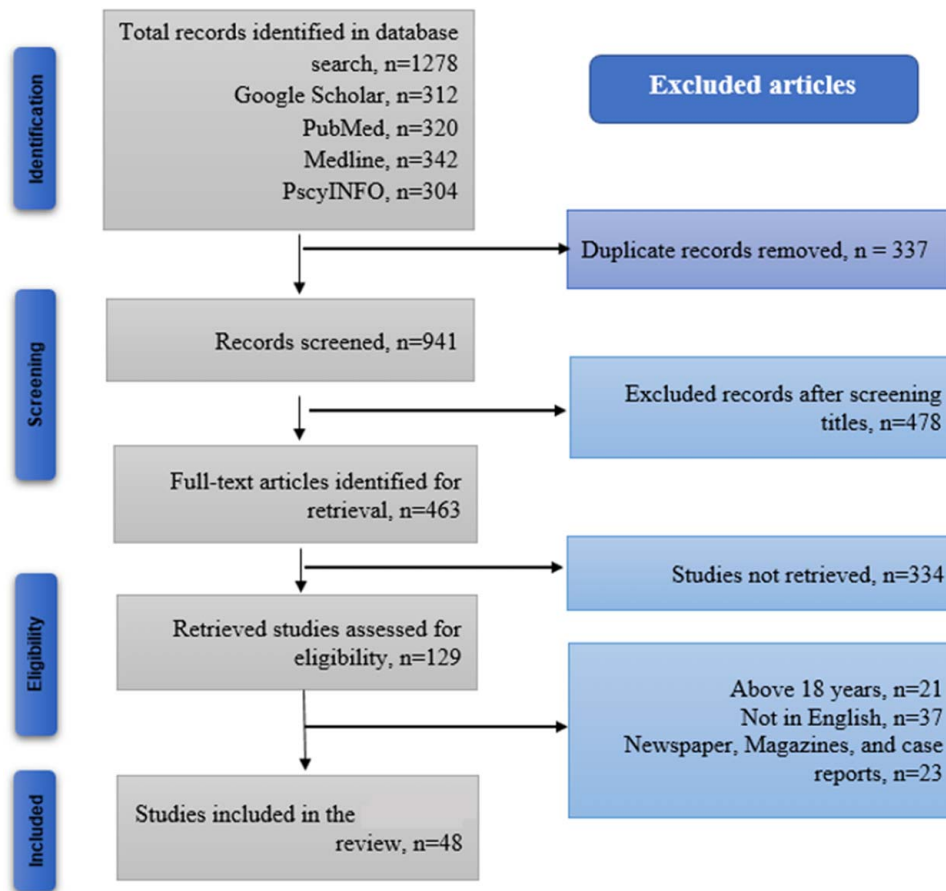


Figure 1. PRISMA flow diagram showing the results of the search process employed.

were scrutinized based on the eligibility criteria. Finally, 47 articles were included in the narrative synthesis. (Fig. 1).

Study characteristics

Of the 47 included studies, 14 were clinical trials, 25 were observational studies, 5 were review articles, 1 was case study and 2 were qualitative studies. All the included studies were published between 2012 and 2022. The average sample size of reviewed studies was 183 and almost half of the participants were female.

Intervention characteristics

The clinical trials assessed effects of different interventions including technology-assisted parenting, parenting-focused mindfulness intervention and different family-based interventions in preventing adolescent substance use. The observational studies assessed effects of different parenting styles including harsh parenting style, neglectful parenting, and authoritative parenting. Similarly, the review articles discussed effectiveness of low-intensity group parenting interventions and family-based interventions in preventing adolescent substance use. The qualitative studies explored experiences of stakeholders including adolescents and their parents with different types of family-based interventions and parenting styles.

Narrative synthesis

Narrative synthesis illustrated that parental involvement, restriction of mature-rated content, parental monitoring, authoritative parenting styles, and parental support and knowledge can help in the prevention of adolescent substance use. On the contrary, poor parent-child bonding, overprotection, permissive parenting, parental frustrations, authoritarian and harsh parenting styles promoted adolescent substance use disorders. Proximal risk factors like peer influence, previous use of other substances, and risky behaviours had more effect than just parenting styles. Preventive Parenting, Parent Training, and Parent Involvement, with a particular focus on Technology Assisted Intervention, particularly SMART (Substance Misuse among Adolescents in Residential Treatment) are found as effective family-based intervention to reduce substance use in youth. (Table 1).

Risk of bias assessment showed that the quality of the included studies varied across the studies, and majority of the study had low to moderate quality (Tables 2-8).

Discussion

To our knowledge, our study is one of the most inclusive and integrative reviews that assess the implications of parenting styles

Table 1

Summary of the included studies.

Reference	Study design	Parenting style/intervention	Population	Findings
Randomized controlled clinical trials				
Becker <i>et al.</i> ^[13]	Randomized controlled clinical trials	Technology-assisted parenting	61 parent-adolescent dyads.	Adolescents in short-term residential whose parents received Parent SMART had fewer drinking days and fewer school problems over time compared to adolescents whose parents received Technology-assisted parenting
Bergman <i>et al.</i> ^[14]	Randomized controlled clinical trials	Providing information to parents about their child's academic performance and behaviour in school	318 seventh graders	The intervention successfully reduced adolescent alcohol and marijuana initiation. Use of alcohol or marijuana was 18.2% in the control group and 10.2% in the intervention group ($P = 0.02$)
Brody <i>et al.</i> ^[15]	Randomized controlled clinical trials	Preventive parenting intervention	11-year-old children (517)	Living in a disadvantaged neighbourhood during adolescence was associated with increased drug use among young men in the control group (simple-slope = 0.215, $P < 0.003$) but not among those in the Strong African American Families condition (simple-slope = 0.030, $P = 0.650$)
Byrnes <i>et al.</i> ^[16]	Randomized controlled clinical trials	Family-based prevention style	($N = 411$)	Improved outcomes related to older teens' alcohol use.
Chaplin <i>et al.</i> ^[17]	Randomized controlled clinical trials	Parenting-focused mindfulness intervention	96 mothers of 11–17-year-olds	Mothers found no significant parenting-focused mindfulness effects on external substance use
Fernandez <i>et al.</i> ^[18]	Randomized controlled clinical trials	Family-based healthy lifestyle intervention	overweight Hispanic adolescents ($N = 280$)	Family-Based Healthy Lifestyle Intervention reduces adolescent alcohol, marijuana, and non-prescription substance use over time.
Lee <i>et al.</i> ^[19]	Randomized controlled clinical trials	Family-based intervention	Main ($n = 376$) Prevention as usual ($n = 370$)	Relative to prevention, as usual, Families Unidas reduced positive parenting discrepancies across time,
MacPherson <i>et al.</i> ^[20]	Randomized controlled clinical trials	Parental monitoring and affective involvement	111 adolescents with comorbid substance use disorder	The intervention reduced depression and the probability of drug use
Sheidow <i>et al.</i> ^[21]	Randomized controlled clinical trials	Integrated family-based outpatient treatment for adolescents	134 youth	The intervention achieved significant improvements in youth
Perunicic-Mladenovic and Filipovic ^[22]	Randomized controlled clinical trials	Authoritative parenting	150 for the inpatient groups (78 for alcohol use disorder and 72 for Pathological Gambling) and 102 participants for the control group	An analysis established a model classifying 79% of the population from the addictive group.
Piehler and Winters ^[23]	Randomized controlled clinical trials	Parent involvement in brief interventions	$n = 259$	adolescents with maladaptive decision-making tendencies (i.e. impulsive/careless, avoidant) demonstrated the largest benefit from the parental involvement
Valente, Cogo-Moreira, and Sanchez ^[24]	Randomized controlled clinical trials	Demandingness and responsiveness	6391 students	Increased levels of parent demandingness predicted decreased probability of adolescent drug use (Cigarette use Odds Ratio = 0.76, 95% CI 0.64–0.89)
Vega-López <i>et al.</i> ^[25]	Randomized controlled clinical trials	Parenting intervention targeting diet improvement and substance use prevention among Latinx adolescents	1494 parent-child dyad	The parenting style promotes positive lifestyle behaviours
Valente, Cogo-Moreira, and Sanchez ^[26]	Randomized controlled clinical trials	Authoritative, authoritarian, and indulgent, with the neglectful style as a reference point.	($n = 6381$)	Activities to develop parenting skills should be included in school programs
Observational studies				
Bosk <i>et al.</i> ^[27]	A large-scale longitudinal study	Harsh parenting style	1825 detained youth (35.95% female)	80% of youth used alcohol or cannabis
Boyd <i>et al.</i> ^[28]	A large-scale longitudinal study	Parental bonding	Urban African American youth ($N = 638$)	Parental bonding plays a vital role in adolescents with substance use
Cox <i>et al.</i> ^[29]	Prospective observational study	High, low, and moderate media parenting, with limited device access, low but high communication about online activities	748 adolescents	High media parenting = 23%, low media parenting = 20%, moderate media parenting with limited device access = 11%, moderate media parenting with high device access = 25%, and low monitoring but high communication about online activities = 21%.

Simsek <i>et al.</i> ^[30]	Cross-sectional study	Avoid attachment score average	NA	21.5% of participants had depressive episodes and anxiety disorder diagnoses; 15.4% of participants had children with a history of psychiatric treatment; 16.9% had children with a history of alcohol/substance use
Brosnan, Kolubinski and Spada ^[31]	Prospective observational analysis	Authoritarian parenting style	85 participants	Cannabis use was positively correlated with both permissive and authoritative parenting styles
Folk <i>et al.</i> ^[32]	Prospective observational study	parental monitoring	400 1 st offending court-involved youth	It is more effective to address the needs of justice-involved youth and families holistically
Koning, de Looze and Harakeh ^[33]	Longitudinal Study	Strict alcohol-specific parenting	906 Dutch adolescents	Strict rules associated with alcohol may not only reduce alcohol but subsequently also other substance use.
Lobato Concha <i>et al.</i> ^[34]	Longitudinal Study	Parental monitoring	43 060 students	Parental monitoring of adolescents' whereabouts and parental opposition to drug use decreased the probability of adolescent cannabis use
Staff and Maggs ^[35]	Prospective observational analysis of the Millennium Cohort Study	Supportive drinking behaviours for adolescents by parents	14 years (<i>n</i> = 11 485 children)	Adolescents whose parents allowed them to drink had greater odds of heavy drinking [OR] = 2.40; 95% [CI] = 1.96–2.94
Thomas <i>et al.</i> ^[36]	Prospective observational analysis	Parental frustration	<i>n</i> = 110; average age = 15.71	Elevated parental frustration is linked to adolescent cannabis misuse during treatment and after its accomplishment
Haines-Saah <i>et al.</i> ^[37]	Prospective observational analysis	Preventive parenting intervention	(<i>n</i> = 16)	Preventive parenting intervention helps adolescents significantly.
Kapetanovic <i>et al.</i> ^[38]	Prospective observational study	Confident parenting and a close parent-adolescent relationship	550 parents and their adolescent children	The parenting style promotes adolescent disclosure and is protective of teenage engagement in risk behaviours
Mak and Iacovou ^[39]	Longitudinal Study	Parental control authoritarian parenting style	<i>N</i> = 2954	Warmth is associated with reduced risks of problem substance use. Parental control also has a protective effect. Indulgent parenting is not related to additional risk of any kind compared with the authoritative style, whereas authoritarian and neglectful styles are.
Micalizzi <i>et al.</i> ^[40]	Prospective observational analysis	Parental social support	6–8th graders (<i>N</i> = 1023)	Parental control protects against substance initiation, but only in supportive relationships.
Goldstick <i>et al.</i> ^[41]	Longitudinal study	Parental support	18-year longitudinal study	Parental relationship interventions may be more appropriate for males to prevent substance use.
.Mejia <i>et al.</i> ^[42]	Cross-sectional study	Parental restriction of mature-rated media	3172 students	Substance use rates were 10% for current smoking, 32% for present drinking alcohol, 17% for past 30-day binge drinking, and 8% for illicit drug use (marijuana or cocaine). Half of the respondents reported parental M-RM restriction (internet 52%, T.V. 43%, adult movies 34%, video games 25%)
Shin <i>et al.</i> ^[43]	Latent transition analysis	Targeted parent-child communication and parental monitoring	(<i>n</i> = 1147)	Targeted parent-child communication about alcohol and parental monitoring were significant predictors of youth alcohol use.
Shabani <i>et al.</i> ^[44]	Cross-sectional study	Dialectics in parenting	400 male students	There was a significant relationship between the amount of dialectics parents use in their upbringing methods and students' tendency to addiction
Segura-Garcia ^[45]	Cross-sectional study	Deficient bonding	Substance use = (<i>N</i> = 62) Alcohol use (<i>N</i> = 26)	Mother care correlates negatively with LSD and positively with ecstasy abuse. Mother overprotection correlates positively with all substances and negatively with alcohol abuse
Pisinger, Bloomfield, and Tolstrup ^[46]	Cross-sectional study	Parental alcohol problems	71 988 young people	Boys and girls in secondary education in Denmark who report perceived parental alcohol problems have significantly higher odds of internalizing problems and poorer parent-child relationships than young people without perceived parental alcohol problems.
McCann <i>et al.</i> ^[47]	Path analysis of school-based cohort study	Parental monitoring: parental control, parental solicitation, child disclosure, and child secrecy	4937 post-primary school students	Adolescent alcohol use appears to increase as parental control decreases and child secrecy increases
Berge <i>et al.</i> ^[3]	Longitudinal cohort study		1268 adolescents	

Table 1

(Continued)

Reference	Study design	Parenting style/intervention	Population	Findings
Flores-Peña <i>et al.</i> ^[48]	Cross-sectional study	Neglectful parenting authoritative parenting parenting behaviour (maternal demandingness)	(<i>n</i> = 3172)	Neglectful parenting style was associated with worse substance use outcomes across all substances. The authoritative parenting style was associated with less frequent drinking. maternal demandingness was the strongest and most consistent correlate of substance use
Schofield <i>et al.</i> ^[49]	Longitudinal observational analysis	Consistent discipline and monitoring predicted	<i>N</i> = 194	Consistent discipline and monitoring predicted relative decreases in substance use into early adulthood but only among parent-offspring dyads who expressed a preference for the same language
Eun <i>et al.</i> ^[50] Review articles	Prospective observational analysis	Maternal and paternal care and control	6483 adolescents aged 13–18 years	Perceived parental care and control were associated with adolescent mental disorders after controlling for multiple potential confounders
Gerra <i>et al.</i> ^[51]	Review	Protective and supportive parenting	NA	The parenting style could represent a critical therapeutic target for preventing addiction
Allen <i>et al.</i> ^[52]	Systematic review	Low-intensity group parenting intervention	42 studies	Relatively low-intensity group parenting interventions are effective at reducing or preventing adolescent substance use
Bo, Hai and Jaccard ^[53]	Systematic review	Parent-based interventions	20 studies	There was evidence of parent-based interventions' efficacy in preventing or reducing adolescent alcohol use.
Garcia-Obregon <i>et al.</i> ^[54]	Review	Parent training interventions	38 unique studies	Parent training interventions are effective preventive strategies to reduce youth substance use
Valero de Vicente, Ballester Brage and Orte Socias ^[10] Case report	Meta-analysis	Family-based selective prevention	9 studies with 102 measures grouped	NA
Burt <i>et al.</i> ^[55] Qualitative studies	Case Report	Harsh parenting style	1030 families (2060 twin children; 49% female; 6–10 years old)	The twin experiencing harsher parenting exhibited more antisocial behaviour
Lessard ^[56]	Qualitative study	Intimate partner violence	43 people	Co-occurring problems caused by parental intimate partner violence
McLaughlin, Campbell, and McColgan ^[57]	Qualitative study	Authoritative styles, parental monitoring, communication, nurturing attachments, and parent-child conflict	9 focus groups	Parent-child attachment was identified as an essential factor in protecting adolescents from substance use in addition to effective parenting, particularly an authoritative style

NA, not applicable.

Table 2
JBI for cross-sectional studies (CSS)

Checklist Reference	Clear inclusion criteria	Detailed setting description	Valid/reliable exposure	Objective/standard measurement criteria	Confounding factor identification	Valid/reliable outcome measurement	Ethical issue consideration	Appropriate e statistical analysis	Quality (score/rating)
Simsek <i>et al.</i> ^[30]	Y	Y	N	Y	Y	Y	Y	Y	7/8 M
Mejia <i>et al.</i> ^[42]	Y	Y	Y	Y	N	Y	Y	U	6/8 M
Shabani <i>et al.</i> ^[44]	Y	Y	Y	U	Y	Y	Y	Y	7/8 M
Pisinger, Bloomfield, and Tolstrup ^[46]	Y	Y	Y	U	Y	Y	N	Y	6/8 M
Segura-García ^[45]	U	Y	Y	Y	N	U	Y	N	4/8 L
Flores-Peña <i>et al.</i> ^[48]	Y	Y	Y	U	Y	U	Y	Y	6/8 M
	Y	U	Y	Y	Y	Y	Y	Y	7/8 M

L, low; M, medium; N, no; U, unclear; Y, yes.

on the frequency of substance use in addition to provide the outcomes of the parental psychosocial intervention strategies cross-culturally. Moreover, this review covers the consequences of either termination or persistence of substance use following the parental interventions and includes the resultant psychiatric outcomes such as anxiety and depression. Considering one of the keys to preventing the adverse psychiatric outcomes continued in adulthood is having a thorough grasp of the early detection of the prevalence, the risk factors, and the protective variables connected to substance use among adolescents, we evaluated the impact of cross-cultural parental intervention, including assessing the effects of various parenting styles on adolescent substance use^[58].

Parenting styles

The parenting styles evaluated across the included comprises authoritative, authoritarian, and harsh parenting styles that were extensively explored. Brosnan *et al.*^[31] associated warmth and strictness with an authoritative parenting style. While neglect, rejection, and psychological control, which lead to increase rebellion among adolescents, are seen in authoritarian parents, that ultimately predicts cannabis use. Per a previous study analyzing the effect of father and mother-based parenting styles indicated that cannabis is the most commonly used illicit drug among adolescents accounting for major public health problems across the nation^[59]. A harsh parenting style is associated with antisocial behaviour and breeds substance use among adolescents. Considering adverse overall health outcomes, according to Root *et al.*^[60], 50% of adolescents with eating disorders also use alcohol or other illegal substances Root *et al.*^[60].

Berge *et al.*^[3] mention parenting practices can limit adolescent exposure to illicit substances since they impact children’s decisions. However, Berge *et al.*^[3] discovered proximal risk factors like deviant peers, previous use of other substances, and risky behaviours as more critical factors for adolescents’ substance use than parenting styles. The exception was the authoritative parenting style which was still associated with less frequent drinking. Besides, Włodarczyk *et al.*^[61] reiterate that the beginning of substance use disorder can be delayed if protective variables enhancing self-efficacy and self-esteem, among other features within the parenting style employed, are present; conversely, ineffective parenting is still inadequate parenting. Becoña *et al.*^[62] state that authoritative parenting is the finest approach to fostering maturity and producing the best outcomes regarding the lowest rates of substance dependence. It is based on parents’ regular use of punishment, kindness, and sensitivity toward their kids, all of which positively impact their development and lead to parent-child communication on the same wavelength^[3].

Parental interventions

Fifteen of the included studies explored a parental intervention-based approach for adolescents. The outcomes suggested that particular interventions helped prevent adolescents from abusing alcohol and other drugs. Out of these, five revealed that family-based interventions were instrumental in reducing substance use. 80% of these studies stood with our stance, while the rest did not. Other interventions that showed positive results, as mentioned above, were preventive parenting, parent training, and parent involvement, with a particular focus on technology-assisted intervention such as parent SMART Parent (Substance

Table 3
JBI for RCTs

Checklist Reference	True randomization applied	Allocation concealed	Groups' baseline where similar	Participants blind to assignment	Assignment Deliver blind to the treatment	Treatment being identical apart from intervention	Follow-up completion differences	Participant analysis in groups randomized	Outcome measurement	Reliable outcome measures	Appropriate statistical analysts	Appropriate of trial design	Outcome assessors blind to assignment
Becker et al. ^[13]	Y	Y	Y	U	Y	Y	Y	Y	N	Y	Y	Y	Y
Chaplin et al. ^[17]	N	Y	Y	Y	Y	U	Y	Y	Y	Y	N	Y	Y
Fernandez et al. ^[18]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	U	Y
Sheidow et al. ^[21]	Y	Y	Y	N	Y	Y	Y	U	Y	Y	Y	Y	Y
MacPherson et al. ^[20]	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Valente et al. ^[24]	Y	Y	U	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Vega-López et al. ^[25]	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y
Bergman et al. ^[14]	U	N	Y	Y	Y	Y	Y	Y	U	Y	Y	Y	N
Brody et al. ^[15]	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	U	Y
Byrnes et al. ^[16]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	U
Lee et al. ^[19]	Y	Y	Y	U	Y	U	Y	Y	Y	Y	Y	Y	Y
Piehler et al. ^[23]	Y	Y	N	Y	U	Y	N	Y	U	Y	N	U	Y

L, low; M, médium; N, No; RCT, randomised controlled trial; U, Unclear; Y, yes.

Table 4**JBI tool for case reports**

Checklist Reference	Patient's demographic characteristics	Patient's history	Patient's current clinical condition	Diagnostic test, assessment methods and results	Intervention/treatment procedure	Post-intervention clinical condition	Adverse event identified	Report lessons provision	Quality rating
Burt <i>et al.</i> ^[55]	Y	Y	Y	Y	N	Y	Y	U	6/8 M

L, low; M, médium; N, No; U, Unclear; Y, yes.

Table 5**JBI for controlled study**

Checklist Reference	Comparable of group? apart from diseases in cases' absence of control	Appropriate match of cases and control	Same identification of cases and control	Standard measurement in the exposure	Same way of exposure measurement	Confounding factors identified	Strategy to deal with confounding factors	Outcomes assessed in a standard, solid reliable way	The exposure period is long enough	Appropriate statistical analysis	Quality rating
Perunicic-Mladenovic and Filipovic ^[22]	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	9/10 M

M, médium; U, Unclear; Y, yes.

Table 6**JBI for qualitative studies**

checklist Reference	Congruity between philosophy and methodology	Congruity between methodology and objective question	Congruity between methodology and data collection method	Congruity between methodology and results interpretation	Researcher cultural/theoretic	of researcher in the research vice-versa	Participant voice presented	Research ethical And evidence	Congruity between methodology and presentation and analysis of data	Flow of conclusion from analysis, interpretation of data	Quality rating
Lessard <i>et al.</i> ^[56]	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	9/10M
McLaughlin, Campbell, and McColgan ^[57]	Y	U	Y	Y	Y	U	Y	Y	N	Y	7/10 M

M, médium; N, No; U, Unclear; Y, yes.

Table 7**JBI for systematic reviews and meta-analysis**

Checklist Reference	Clarity and explicit review question	Appropriate inclusion criteria	Search strategy apt opt ut e	Adequate of sources and resources	Appraisal criteria appropriate	Critical appraisal by independent reviewers	Methods to reduce errors	Appropriate combining methods	Publication bias	Recommendations policy	Specific directives	Quality y. rating
Gerra <i>et al.</i> ^[51]	Y	Y	Y	U	Y	Y	Y	Y	Y	N	Y	9/11M
Allen <i>et al.</i> ^[52]	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	Y	10/11 M
Bo. Hai and Jaccard ^[53]	N	Y	Y	Y	Y	N	Y	Y	N	Y	Y	8/11M
Garcia-Obregon <i>et al.</i> ^[54]	Y	Y	Y	Y	U	Y	Y	N	Y	Y	Y	9/11M
Valero de Vicente. Btoj ^[10]	Y	U	Y	Y	Y	Y	Y	Y	Y	Y	Y	10/11 M

L, low; M, médium; N, No; U, Unclear; Y, yes.

Table 8

JBI tool for cohort studies

Checklist Reference	Similar group. Mae pepalit. ca recruits	Exposure measurement	Valid reliable measurement	Confounding factors identified	Ccafc < 2 > ding strategies	Groups free it the exposure	Outcomes meiswement in Mhd relsiKe wav	Follow-up duritson sufficiency	Completion of follow-up	Stritegses to address incomplete follow-up	Appropriate statistical analysis	Quality rating
Bosk <i>et al.</i> ^[27]	Y	Y	Y	Y	Y	N	Y	U	Y	Y	Y	9/11 M
Boyd <i>et al.</i> ^[28]	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	9/11.M
Cox <i>et al.</i> ^[29]	U	Y	Y	Y	Y	Y	Y	N	Y	Y	N	8/11 M
Brosnan <i>et al.</i> ^[31]	Y	Y	Y	X	Y	Y	Y	Y	Y	Y	Y	10/11 M
Folk <i>et al.</i> ^[32]	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	9/11 M
Koning <i>et al.</i> ^[33]	Y	Y	U	Y	N	Y	Y	Y	U	Y	Y	8/11 M
Lobato Concha <i>et al.</i> ^[34]	Y	U	Y	X	Y	N	Y	N	U	U	Y	5/11 L
Staff <i>et al.</i> ^[35]	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	U	9/11M
Thomas <i>et al.</i> ^[36]	U	Y	X	Y	Y	Y	Y	Y	Y	Y	Y	9/11 M
Haines-Saah <i>et al.</i> ^[37]	Y	Y	Y	Y	U	Y	N	Y	Y	N	Y	8/11.M
Kapetanovic <i>et al.</i> ^[38]	Y	Y	Y	X	Y	Y	Y	Y	Y	Y	U	9/11 M
Mak and Iacovou ^[39]	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	10/11 M
Micalizzi <i>et al.</i> ^[40]	N	Y	Y	Y	U	Y	Y	Y	Y	Y	N	8/11 M
Goldstick <i>et al.</i> ^[41]	Y	Y	X	Y	Y	Y	N	Y	U	Y	Y	8/11 M
Shin, Y <i>et al.</i> ^[43]	U	Y	Y	N	N	Y	U	Y	U	Y	N	5/11 L
McCann <i>et al.</i> ^[47]	Y	Y	Y	U	Y	Y	Y	U	u	Y	Y	8/11 M
Berge <i>et al.</i> ^[3]	N	Y	U	Y	Y	Y	Y	Y	Y	Y	Y	9/11.M
Schofield <i>et al.</i> ^[49]	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	Y	10/11M
Eun <i>et al.</i> ^[50]	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	10/11 M

L, low; M, médium; N, No; U, Unclear; Y, yes.

Misuse among Adolescents in Residential Treatment)^[13]. Parenting-focused mindfulness, however, did not come out to be as valuable^[17].

Parental monitoring and control

Five of thirteen studies focusing on parental control and monitoring revealed that consistent discipline and monitoring, including parenting style, predicted relative decreases in adolescent substance use^[20]. Per a previous study, a protective association between parental restriction of mature-rated media and adolescents' substance use^[42]. Study by^[29], found that low levels of media parenting were associated with elevated reports of contemporaneous and prospective alcohol and marijuana use^[29]. At the same time, one study found that targeted parent-child communication about alcohol and parental monitoring were significant predictors of youth alcohol use.

Parental problems

Out of five studies, one found that poor bonding plays a significant role in the development of ecstasy use^[28]. It also showed that mother overprotection correlates positively with all substances and negatively with alcohol abuse. Besides, another study revealed that adolescents whose parents allowed them to drink had greater odds of heavy drinking perceived parental alcohol problems and significantly higher odds of internalizing problems and poorer parent-child relationships than young people without perceived parental alcohol problems. Another study correlated parental frustration and intimate partner violence with alcohol abuse in children with co-occurring mental issues like anxiety and depression^[56].

Parental support/bond

A total of six studies assessed the effects of parental bonds and support on substance initiation and addiction. All six studies emphasized the importance of close parent-adolescent relationships, dialectics, and support, a kind of parenting style, in curbing risky behaviours such as drug use. However, Micalizzi *et al.*^[40] examined how parental social consent accentuates the protective effects of sources of parental knowledge (Parental Control, Parental Solicitation, and Child Disclosure) on drug use. The study concluded that all sources of parental knowledge were associated with lower delinquency only in supportive relationships. Therefore, a supportive parent-adolescent relationship can positively impact substance use among adolescents, particularly among males^[41].

Study strengths and limitations

Unlike similar contemporary scoping reviews regarding substance use in adolescents, this review comprehensively acknowledges multiple forms of modern recreational substance use. As a result, it enhances the applicability of the findings and does not restrict substance-related escape mechanisms to typical substances like alcohol, cannabis, and tobacco. The outlining of the review following the guidelines by PRISMA 2020 makes it accurate for studies concerning interventions and their outcomes. The extensive literature search constituting 1278 articles, narrowed down to only 48 articles after the exclusion, eradicates the bias towards specific demographics, parenting styles, ethnicities, etc. Moreover, considering only the peer-reviewed articles renders the findings of

this research more authentic and accurate. In addition, reviewing the articles published over the past decade makes this scoping review more universal and less time specific^[63]. However, the linguistic bias could not be eliminated since only the articles published in the English language were reviewed.

On the other hand, like any other research study, the current review is bound to some limitations. As mentioned previously, the findings of this review can be added upon by conducting a similar study that transcends linguistic barriers and includes articles published in languages other than English. Moreover, there is a significant need for developing well-defined parenting styles and a non-overlapping distinction between interventional strategies for convenience sampling and grouping the results. In addition, parental behaviours may not be the only factors contributing to adolescents' inclination towards substance abuse. Therefore, a significantly more extensive and diverse study is required to assess all factors that influence the propensity for drug abuse or abstinence from it.

Conclusion

Our scoping review provides critical facts and figures regarding parenting styles that may precipitate adolescent substance use disorders, which could guide health professionals, psychiatrists, policy makers and parents to gain better understanding of the implications of parenting styles on adolescents' behaviour and lifestyle. Thus, the outcomes of this study observed that parental involvement, restriction of mature-rated content, parental monitoring, authoritative parenting styles, and parental support and knowledge discouraged adolescent substance use. On the contrary, poor parent-child bonding, overprotection, permissive parenting, parental frustrations, authoritarian and harsh parenting styles promoted adolescent substance use disorders.

Awareness regarding the potential for early use of substances such as alcohol, cannabis, and tobacco, in addition to the prevalence of their associated health problems could create new culturally specific implementations and sets forth the optimization of the methods of parenting and family-based interventions to counter substance use disorders.

Ethical approval

Not required since it's a review.

Consent

Not required since it's a review.

Source of funding

Not applicable.

Author contribution

O.W. and S.P.—study concept and design, study criteria, writing the first draft. A.A.K., O.E.A., H.N.—methodology, data collection and analysis, editing the first draft. M.A., M.N.—writing the paper, data analysis, editing second and third draft. N.A. and M.Z.—supervision, conception of idea, resources and investigation, editing final draft.

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Not applicable.

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Data sharing is not applicable to this article.

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