

# The Effects of Parental Involvement on Youth Substance Use

NICOLE DAY & KENNETH CRAMER, PH. D.  
University of Windsor

Parental involvement can act as a protective factor against various problematic social behaviours within the adolescent years. Previous research suggests greater parental involvement is linked to less substance use, lower frequency of use, and a later age of substance initiation. An American community sample of 18,271 respondents completed a questionnaire assessing illegal substance use (frequency and age of first use) plus a 9-item measure of parental involvement. Results indicated that parental involvement was related to lower use of some drugs (e.g., marijuana), but not others. Parental involvement was not associated with frequency and age of first use, but was related to adolescents' decision to try substances. That is, once substance use began, parental involvement could offer little to buffer either frequency or age of use. In conclusion, this research helps to better our understanding of how parental involvement affects adolescent drug use.

*Keywords:* parental involvement, substance use, adolescence, marijuana, drug use

L'implication parentale peut agir comme facteur de protection contre divers comportements sociaux problématiques pendant l'adolescence. Les recherches suggèrent qu'une plus grande implication parentale est liée à une consommation et une fréquence d'utilisation de substances plus faible, ainsi qu'à un âge d'initiation plus tardif. Une communauté américaine de 18 271 répondants a complété un questionnaire évaluant la consommation de substances illicites (fréquence et âge de la première consommation) et un questionnaire comprenant 9 items mesurant l'implication parentale. Les résultats montraient un lien entre l'implication parentale et une consommation plus faible de certaines drogues (p. ex., la marijuana), mais pas d'autres. L'implication parentale n'était pas associée à la fréquence et l'âge de la première consommation, mais plutôt au choix des adolescents d'essayer des substances. Cependant, une fois que la consommation de substances commence, l'implication parentale n'agirait pas comme tampon pour la fréquence ou l'âge d'usage. Finalement, cette recherche permet de mieux comprendre comment l'implication parentale affecte la consommation de drogues des adolescents.

*Mots-clés :* implication parentale, consommation de substances, adolescence, marijuana, consommation de drogues

Parental involvement is undoubtedly an important factor in the lives of youth (Eamon, 2005). As adolescents grow older, parenting will remain a central agent in this socialization process, whether youth continues to depend on parents to help navigate their way through the world, or new parents appear wary of making mistakes that put youth at a disadvantage (Hayakawa, Giovanelli, Englund, & Reynolds, 2016; Janssen, Weerman, & Eichelsheim, 2016; Oppenheimer et al., 2016). Since parental involvement is vital in the socialization process of youth, examining the impact of parental involvement on adolescent behaviours, specifically drug use, can provide insight into how parental involvement can buffer problem behaviours, which could cause detrimental effects to adolescents well-being. Early drug use may have long-lasting negative effects; therefore understanding how to lower the likelihood of

early drug use is important in protecting youth from these long-term negative consequences (Criss et al., 2015). Previous studies have not fully explored how parental involvement impacts adolescent substance abuse (Piehler & Winters, 2017; Véronneau, Dishion, Connell, & Kavanagh, 2016; Williams, Ayers, Baldwin, & Marsiglia, 2014). The present study aims to better understand this relationship. Specifically, this study examined illegal substance use, frequency, and age of initiation among adolescents and young adults as it relates to parental involvement.

## Parental Involvement

Developmental theory outlines how parental involvement emerges from parenting styles, or rather how parents choose to raise a child as they meter out both love and discipline (Baumrind, 1971, 1991). Specifically, parenting styles differ chiefly in the amount of warmth and control that parents utilize in the course of child behavioural management (Pinquart, 2017; Vasta, Younger, Adler, Miller, & Ellis, 2014). As such, with the crossing of differing levels of warmth and control, parenting styles fall into one of

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four categories: authoritative, authoritarian, permissive or uninvolved. The authoritative parenting style is characterized by high parental warmth and control; these parents tend to be sensitive and responsive to their child's needs and wants, but also set clear boundaries to guide appropriate behaviours. This parenting style is often viewed as the best way to raise children, as youth tend to feel loved and respected. Conversely, the authoritarian parenting style incorporates higher control but lower warmth (McLaughlin, Campbell, & McColgan, 2016; Pinquart, 2017). Thirdly, permissive parents demonstrate high warmth but low control over their children's behaviours (Vasta et al., 2014). Finally, uninvolved or disengaged/neglectful parents offer children neither parental warmth nor control and guidance. Parenting styles can affect the child-parent relationship, and this can either protect children from negative behaviours or provide an environment that invites negative behaviours and is therefore a pivotal factor in the development of youth.

Parent-child relationship forms early in a child's life, so it is crucial to understand the mechanisms that would necessarily affect a child's life trajectory—encouraging behaviours contributing to growth and discouraging negative behaviours that impair development. Benner, Boyle, and Sadler (2016) have shown that higher parental involvement in school activities, such as volunteering at the school, was related to both a higher grade point average (GPA) in high school and continuation in post-secondary schooling. Moreover, greater parental advice on students' academic decisions was related to educational achievement. In short, these results show that parental involvement in their child's school affairs can greatly impact not only high school grades but also their likelihood to continue their education. Previous studies have contributed to the understanding of how higher levels of parental involvement can have a positive effect on adolescent lives and help prevent behaviours that may be detrimental to the adolescent's future, such as dropping out of school or substance abuse. Criss and colleagues (2015) have shown that parents promoting students to do well in high school, thereby increasing the likelihood of further education predicts job success and overall well-being. This occurs because greater parental solicitation (i.e., the amount of information parents inquire about their child's life), child disclosure, and higher parental involvement are keenly tied to the amount of knowledge parents have about their children.

Parenting styles can have profound effects on a child's future, yet they vary considerably between families. As such, it is important to understand how different parenting styles can affect a child's growth and overall well-being. Whereas it has been well

documented that higher parental involvement relates to greater success later in the child's life, one factor not fully understood is the role of parental involvement concerning youth substance abuse. Past research has explored whether youth with disconnected parents will use illicit drugs (McLaughlin et al., 2016). However, our research will examine more specific metrics, such as the age of drug initiation, frequency of use, and the profile of illicit drugs used.

### **Youth Substance Abuse**

Youth substance abuse has been recognized worldwide as a major healthcare concern with important socio-economic consequences (Hassan, Csemy, Rappo, & Knight, 2009). Research has shown that whereas greater parental involvement positively impacts several aspects of children's lives, it may also act as a protective factor against several negative outcomes, including substance abuse. Specifically, Criss and colleagues (2015) reported that higher levels of parental involvement were related to lower levels of both antisocial behaviours and substance abuse. Whereas substance use can occur at any point in the lifespan, earlier initiations of any substance use predict more chronic ongoing addictions and substance abuse later in life (Campbell, Sterling, Chi, & Kline-Simon, 2016). As such, halting substance use at a younger age should help prevent substance abuse later in life.

Past research has shown that as many as one in four 12<sup>th</sup> graders have used an illicit drug (such as cocaine or heroin), and 35% have smoked marijuana within the past year (National Institute on Drug Abuse [NIDA], 2016). So too, half of all American youth in the course of a year have abused at least one illicit drug (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2016). These statistics help support the need for continued research on youth substance use, in an effort to find ways to decrease the number of adolescents abusing illicit and dangerous substances. While not technically considered a "hard" drug, marijuana, is among the most commonly abused substance by youth (Young et al., 2002).

Although the effects of marijuana use are less detrimental compared to other "harder" substances, there are several negative effects that can occur from regular cannabis use, such as impaired memory (Bolla, Brown, Elderth, Tate, & Cadet, 2002). Campbell and colleagues (2016) found that when looking at three different groups of marijuana users (i.e., abstinent, low/stable, and increasing use), those who indicated that they were increasingly using marijuana reported an average monthly usage of 25 times over a 7-year period. Not only had marijuana use significantly increased over time for the "increasing use" group, but

so had the use of other hard illicit substances (Campbell et al., 2016).

The increasing use of hard illicit substances is important to note, as hard drug use during adolescence has the potential to create lifelong substance use difficulties including addiction problems (Teichner, Donohue, Crum, Azrin, & Golden, 2000). Furthermore, hard drug use during adolescence is significantly related to several negative secondary effects, such as increased risk of car accidents, head injuries, and physical fights (Teichner et al., 2000). Reyes, Foshee, Baurer, and Ennett (2014) had found that alcohol, marijuana use, and hard drug use have all been strongly related to aggressive behaviours, and ultimately premature death. Additionally, they found that drug use has been associated with a greater likelihood to engage in dating aggression and partner violence. Finally, Morentin, Ballesteros, Callado, and Meana (2014) reported that recent cocaine use in those aged between 15 and 49 years old significantly predicted an increased risk of cardiovascular issues resulting in sudden death.

As evident from the research, adolescent substance abuse carries a long list of negative consequences, and therefore understanding how to protect children and youth from these consequences remains vital. The present study aims to understand this link by examining how involved parents are in their child's life (e.g., highly involved authoritative parenting, or uninvolved disengaged parenting styles) and to which extent the type and amount of involvement affect the use of substance, frequency of use, or age of first use.

### Parenting and Youth Substance Abuse

The exact relationship between parental involvement and adolescent substance use is still unclear, as questions remain concerning the mechanisms behind the parent's specific role. Authors of the current study ask whether setting curfews, reviewing homework, and implementing household chores impact the absolute initiation of youth substance use, the age of that initiation, and/or the frequency of use. However, a glimpse into the role of parental involvement may be offered in the related field of youth alcohol abuse. Carroll and colleagues (2016) suggested that higher parental monitoring was strongly related to lower youth consumption of alcoholic beverages across a given week. Similarly, McLaughlin and colleagues (2016) found that a secure parent-child attachment acted as a protective factor against youth alcohol use. They further reported that parents who were more loving, caring, supportive, and trustworthy towards their children were less likely to have children who would abuse substances. Finally, not only can better parenting impact youth substance

use, but it can further influence behavioural resilience among youth. Liebschutz and colleagues (2015) found that youth at risk for negative behaviour outcomes were significantly more likely to show resilience (i.e., no early substance use, no risky sexual behaviours, and a lack of problematic behaviours) when parental involvement was high. Previous literature has shown how higher parental involvement can play a role against youth alcohol use, but little research has been done to examine the relationship between parental involvement and drug use. The present study aims to fill this gap and contribute to the research by examining how parental involvement affects substance abuse, focusing on a variety of illicit substances.

### Present Study

As parental involvement and substance use inarguably carry a huge impact on the lives of youth, understanding their association should help to protect youth from many negative effects of early substance use (Criss et al., 2015). Although several studies have investigated parenting and substance use in youth, there remains a gap in understanding the extent to (and the role by) which parental involvement may buffer youth substance use. We further explored this relation by examining adolescent substance use in relation to parental involvement in respondents' lives. In essence, we investigated whether keeping track of an adolescent's progress through school, establishing curfews and reasonable chores, and utilizing a care-based authoritative parenting style (Baumrind, 1971, 1991) could protect youth from the risks of substance use. We hypothesized that with less parental involvement in adolescents' lives, youth will (a) be more likely to use illicit substances, (b) use illicit substances more frequently, and (c) begin using illicit substances at a younger age.

### Method

#### Participants

The data used for the present study was taken from the National (American) Household Survey on Drug Use and Health (Thompson, 2011), which overall contained approximately 3,100 variables and 55,600 participants (see a recent publication from this dataset in Silverstein & Levin, 2014). This dataset was chosen due to the number of participants sampled across the United States, as well as the vast number of variables with which to work. Although collected some years earlier, the present data remained unanalyzed on our research question. The participants in the analysis ( $N = 18,271$ , 48% male) were between 12 and 17 years of age ( $M = 14.50$ ,  $SD = 1.69$ ), mainly Caucasian (64%; 5,979 males and 5,704 females), although many were Hispanic (14%; 1,363 males and 1,252 females) and African-American (13%; 1,204 males and 1,254

Table 1  
*Sample Demographics by Gender and Age*

Age (Years)	Males <sup>a</sup>		Females <sup>b</sup>	
	<i>n</i>	%	<i>n</i>	%
12	1,439	50.1	1,431	49.9
13	1,615	50.71	1,570	49.3
14	1,601	51.1	1,531	48.9
15	1,593	51.2	1,519	48.8
16	1,550	51.6	1,456	48.4
17	1,516	51.1	1,450	48.9

Note. <sup>a</sup> *n* = 9,314; <sup>b</sup> *n* = 8,957.

females); with 8% (*n* = 1,515) indicating they belonged to other categories (see Table 1 for a breakdown of age by gender). As an incentive, respondents received \$30 upon completion, resulting in a 91% response rate (Thompson, 2011).

### Materials and Procedure

Participants completed the *National Household Survey on Drug Use and Health* as a survey using computer-assisted interview methods (Thompson, 2011).

**Drug use.** Although several drug, crime, and depression variables (among a variety of other scales) were included in the full dataset, only illegal (rather than prescription) drug use variables were evaluated for our study with respect to parental involvement. In addition to illegal drug use where participants had to answer *yes/no*, we included the age at which participants indicated they had first tried any of the drugs in question. We further included inhalants (e.g., whippets, lighter gases, correctional fluid, amyl nitrate, lighter fluid, glue, halothane, lacquer, spray paints) as substitutes for illegal drugs; this is salient given that some youth are unable to afford (or have access to) illegal substances. In total, 19 different drugs were included in the study.

**Parental involvement.** This measure was derived from a set of nine questions selected for the present study (scored either 0 = “*seldom/never*” or 1 = “*always/sometimes*”) to assess the amount of attention that respondents believed their parents paid to them (see Table 2 for the complete list), such as “*Have you talked with parents about the dangers of tobacco and alcohol?*” and “*Have your parents checked if your homework is done in the past year?*”.

Only eight of the nine parenting variables were summed to create the final parenting score (*M* = 5.83, *SD* = 1.77, ranging from 0-8), whereby a higher score indicated greater parental involvement. Item-total statistics showed that dropping one of the nine parenting variables (“*Did you have a fight with at least one of your parents in the past year?*”) increased KR-20 to .642.

### Results

#### Parental Involvement Predicts Use of Some Substances

A significance level of .05 was set for all analyses, and a Bonferroni correction was used for the analysis of 19 substances to avoid unneeded inflation of type I error risk. To test the hypothesis of the association between parental involvement and youth substance use, we used an independent sample 2-tailed *t*-test

Table 2  
*Parental Involvement Scale Items*

1. Have you talked with your parents about the dangers of tobacco and alcohol?
2. Have your parents checked if your homework is done in the past year?
3. Have your parents helped you with homework in the past year?
4. Have your parents made you do chores around the house in the past year?
5. Have your parents limited the amount of TV usage in the past year?
6. Have your parents limited your time out on a school night in the past year?
7. Have your parents told you that you have done a good job in the past year?
8. Have your parents told you they are proud of the things you’ve done in the past year?
9. How many times have you argued or fought with your parents in the past year?

PARENTAL INVOLVEMENT AND YOUTH SUBSTANCE USE

Table 3

Mean Parental Involvement by Adolescent Drug Use

Substances	Has used			Never used			<i>t</i>	<i>p</i>	<i>R</i> <sup>2</sup>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
Marijuana	13.14	1.92	3581	14.00	1.69	14686	24.23	<.001	.10
Cocaine	12.64	2.11	438	13.86	1.75	17830	11.99	<.001	.24
Crack	12.49	2.43	93	12.68	2.02	345	0.70	.486	
Heroin	12.45	2.39	60	13.83	1.77	18196	4.57	<.001	.26
LSD	12.76	2.17	238	13.06	1.96	745	1.96	.050	
PCP	12.86	2.16	128	13.01	1.20	857	0.81	.421	
Peyote	13.59	1.91	67	12.96	2.02	907	1.68	.094	
Mescaline	12.87	2.01	43	12.97	2.02	924	0.33	.738	
Ecstasy	12.67	2.01	387	13.16	2.00	591	3.78	<.001	< .01
Amyl nitrite	12.96	2.06	329	13.28	1.93	1815	2.73	.006	
Correction fluid	13.19	2.04	438	13.24	1.93	1684	0.52	.601	
Lighter fluid	13.12	1.94	744	13.30	1.97	1407	2.02	.043	
Glue, polish, toluene	13.15	1.93	842	13.29	1.97	1302	1.61	.109	
Halothane, ether, Other anaesthetic	12.99	2.00	90	13.24	1.95	2054	1.17	.231	
Lacquer, thinner, Other solvents	12.89	2.07	351	13.30	1.93	1802	3.65	<.001	< .01
Lighter gases	12.86	2.05	234	13.28	1.94	1920	2.41	.016	
Nitrous oxide (whippits)	12.99	2.07	315	13.28	1.93	1832	2.41	.016	
Spray paints	12.98	2.05	581	13.32	1.91	1564	3.57	<.001	< .01
Other aerosol sprays	13.09	2.04	431	13.27	1.92	1708	1.70	.090	

Note. Bonferroni corrections were applied ( $p < .003$ );  $R^2$  estimates of explained variance were included only for significant results. Follow-up non-parametric Mann-Whitney  $U$  tests confirmed the significant results.

with substance use (*yes/no*) as the grouping variable and parental involvement summed-scores as the dependent measure. Table 3 shows the means, standard deviations, and sample sizes for respondents divided according to use of a given substance. Results indicated that for 6 of the 19 substances tested (i.e., marijuana, cocaine, heroin, ecstasy, lacquer thinner, and spray paint), lower parental involvement was associated with greater use of that substance ( $p < .05$ , Bonferroni). Because the data often appeared in non-

normal distributions with non-homogeneous variances (as per Levene's test), follow-up non-parametric Mann-Whitney  $U$  tests (not subject to parametric distributional constraints) were conducted to confirm that the results remained significant; these non-parametric alternative tests rendered the same results.

**Frequency of Substance Use in the Past Year**

We evaluated the relation between parental involvement and frequency of substance use,

Table 4

Parental Involvement and Frequency of Drug Use Within the Past Year (Days)

Substances	<i>M</i>	<i>SD</i>	<i>n</i>	<i>r</i>	<i>p</i>	Skewness	Kurtosis
Marijuana	28.16	79.21	1037	-.09	.005	5.19	11.58
Cocaine	35.35	65.93	263	-.02	.727	6.74	8.33
Crack	56.75	85.96	50	-.07	.635	3.59	2.96
Heroin	65.26	104.35	33	.24	.171	4.34	1.81
Inhalants	25.21	53.04	775	-.01	.706	17.70	14.22

Note. Spearman rho non-parametric correlational analyses confirmed these results.

Table 5

*Parental Involvement and Age of First Drug Use (Years)*

Substances	<i>M</i>	<i>SD</i>	<i>n</i>	<i>r</i>	<i>p</i>	Skewness	Kurtosis
Marijuana	16.26	3.94	3506	.03	.074	-0.87	19.33
Cocaine	19.76	4.87	423	.06	.226	-2.21	7.75
Crack	21.98	6.98	89	.08	.436	-1.37	1.78
Heroin	19.97	5.41	59	.04	.753	-1.81	2.97
Hallucinogens	17.56	3.59	841	-.04	.301	-2.02	7.48
LSD	17.48	3.22	222	-.06	.398	-1.90	6.14
PCP	17.63	3.92	118	-.11	.224	-	9.76
Ecstasy	19.16	4.26	366	.05	.370	-1.19	6.66

*Note.* Spearman rho non-parametric analyses confirmed these results.

calculated from the number of days that any of five substances were used in the past year. Those five substances (i.e., marijuana, cocaine, crack, heroin, and inhalants) were selected by the authors to include information concerning frequency of use (the survey did not include frequency of use data for remaining substances such as PCP and LSD). Table 4 shows the average number of days of use for each substance, including the Pearson product-moment correlation between frequency of substance use and parental involvement. A Bonferroni correction was used for the analysis to avoid the inflation of type I error risk. Results showed that even with the conservative Bonferroni correction, the correlation was significant only for marijuana use,  $r(3756) = -.09$ ,  $p = .005$  (we note the especially high degree of freedom). All other correlations were not significantly related to parental involvement. In other words, whereas the previous analysis showed that absolute use of several substances was predicted by parental involvement, this analysis did not show that parental involvement was related to the frequency of substance use, except in the case of marijuana use. Although the data was not normally distributed and was skewed negatively, a non-parametric Spearman rho was conducted, and it was found that the lack of normality did not affect the analysis.

### Age of First Drug Use

Finally, we evaluated the relation between parental involvement and the age at which youth first used any of eight substances (i.e., marijuana, cocaine, crack, heroin, hallucinogens, LSD, PCP, and ecstasy). A Bonferroni correction was used for the analysis to avoid the inflation of type I error risk. Table 5 shows the average age at which youth began using a given substance, as well as the correlation between age of first use and parental involvement. Results showed that all correlations were non-significant ( $ps > .05$ ), although marijuana did trend in the predicted direction,  $r(3504) = .03$ ,  $p = .074$ . In other words, as

with frequency of substance use, parental involvement did not predict the age at which youth began using a given substance.

### Discussion

The goal of the present study was to examine the relation between parental involvement and youth substance use. Specifically, we addressed the question of whether greater parental involvement could buffer their children from risk of substance use via any of three avenues: (a) inhibiting overall use of a given substance, (b) reducing frequency of a given substance use, and (c) delaying age of first initiation for a given substance.

To evaluate the first avenue (i.e., inhibiting overall use of a given substance), results showed that parental involvement was significantly related to initiation of use among certain substances, but not others. Specifically, lower parental involvement was observed in participants who used marijuana, cocaine, heroin, ecstasy, lacquer thinner, and spray paints. The proportion of explained variance was especially noteworthy for marijuana, cocaine, and heroin. Alternatively, higher parental involvement was not associated with the initiated use of crack, PCP, peyote, mescaline, correction fluid, lighter fluid, glue, shoe polish, halothane, ether, whippits, or aerosol sprays. The significant and sizable relation between parental involvement and marijuana use is salient, since although it may be a tall order to expect every substance to be impacted by parents' concerns for their adolescents, halting the initiation of marijuana use may close the gateway toward the initiation of harder illicit drugs (Campbell et al., 2016). Future research would benefit from pursuing why parental involvement had a stronger effect on some drug use (marijuana, cocaine, and heroin) compared to other substance use variables.

Furthermore, evaluating the second avenue concerning parental involvement and frequency of

substance use revealed only one significant effect, as related to frequency of marijuana use—that is, in general, parental involvement did not significantly predict the frequency of substance use. The one exception was observed for marijuana where a significant (albeit especially small) negative relation was uncovered—namely that greater parental involvement was associated with less frequent marijuana use. Previous research had reported a significant negative relation for several substances (Charles, Mathias, Acheson, & Dougherty, 2017; Criss et al., 2015). Our results may have uncovered a significant relation for marijuana use only due to its light recreational level, yet heavier substances such as cocaine, crack, and heroin would demand more than parental involvement to buffer their frequency of use. Indeed, when analyzing the frequency of substance use, review of the means indicates that lighter drugs (e.g., marijuana) have a much lower frequency of use than any harder drugs (e.g., crack or heroin). This supports the notion that adolescents who use harder substances will use them more frequently (Hanson, Thayer, & Tapert, 2014). Future research should confirm this speculation, as well as to what can be done to help reduce the frequency of harder substance abuse in adolescents. The importance of lowering the frequency of drug use can have lifelong effects on the user, as higher drug use is more closely related to addiction problems and mental health issues (Campbell et al., 2016).

With respect to the third avenue (i.e., delaying age of first initiation for a given substance), results did not support our hypothesis that parental involvement would be associated with the age at which youth began using a given substance (although age of initiation of marijuana did trend in the predicted direction). Previous research has suggested higher parental involvement should impact age of first drug use (Campbell et al., 2016; Criss et al., 2015), such that diverting youth from drugs as long as possible was crucial to proper adolescent development. These results are troubling since many parents believe that high parental involvement may be enough to protect children from abusing substances at a young age (McLaughlin et al., 2016). To speculate as to why parental involvement was not significantly related to age of first substance use may highlight the role of peers, arguably more salient in the lives of adolescents (McDonough, Jose, & Stuart, 2015).

To summarize, our results showed that parental involvement seemed to play a role only in the initiation of youth substance use rather than the frequency and age of first use. In other words, parents' involvement in their youth's lives appear to be associated with whether they use substances, but not when or how much. The present study allows for the

development of a more specific understanding of how parental involvement affects adolescent drug use. This study also encourages research to expand on as to why parental involvement affects the use of some drugs but not others. We now understand that parental involvement is related to adolescent drug use, but we do not understand yet how to limit the use of drugs that are not influenced by parental involvement (such as hard drug use; e.g., crack and heroin). We encourage future research to focus on such areas. The implications of this study are important as parents may assume that by being involved in their child's life, they may help dissuade them from experimenting with illegal substances. However, the results of this study show this may not be entirely the case, as parental involvement was not related to the frequency of drug use or the age of first use.

### Limitations

Several limitations within this study should be considered when implementing modifications for future research. For instance, more current data should be collected given the age of the data analyzed (in 2004). Arguably within a 14-year period, drug culture among adolescents could have changed in significant ways (Johnston, O'Malley, & Bachman, 1987). As adolescent culture changes over time, drug culture can also change to fit within these changes and future research should reflect this (Johnston et al., 1987). That too should prove relevant when considering changes to parental involvement since data was collected in 2004. Schools have stressed in recent years the importance of being involved in youth lives and this would be reflected in more up-to-date data collection. As well, the parental involvement scale used for this analysis was not tested previous to this study. Although the KR-20 estimate of internal consistency was acceptable, testing the parenting scale beforehand may have changed which variables we included within the scale. Another limitation of the present study involves the cross-sectional design employed. Unfortunately, the dataset captured the life experience of youth from one point in time, and could not unpack how substance use might have changed over the course of subsequent years. Future studies should focus on parental involvement changes over time and the effects on adolescents drug use. Lastly, mediators or moderators to parental involvement, such as supportive family members that did not include the youth's parents, was not included in the present study, but would be worthwhile to explore so as to complete a more complex model. Future studies related to adolescents' support system outside of their parents could provide information about if the support system could moderate the effects of low parental involvement.

## Conclusion

In conclusion, this study contributes to our understanding of the relation between parental involvement and adolescent substance use. The precise role of parental involvement emerged only in the domain of adolescent substance use rather than frequency of use or age of initiation. Once adolescents begin using a given substance, we observed less impact from parental involvement concerning youth substance use behaviours. Future studies should further unpack these and other mechanisms that have a role in adolescents' choices to explore hard drug use.

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