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Current Prescription Opioid Misuse and Suicide Risk Behaviors Among High School Students

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Abstract

Background and Objectives: Previous studies have reported that youth with a lifetime history of prescription opioid misuse (POM) are at an increased risk for suicidal ideation, planning, and attempts. This study investigates whether the association between youths' prescription opioid misuse and suicide outcomes differs by *recency* of prescription opioid misuse (i.e. none, past, or current misuse).

Methods: This report uses data from the 2019 Youth Risk Behavior Survey to examine associations between recency of POM (current POM, past POM, and no POM) and suicide risk behaviors among U.S. high school students.

Results: After controlling for demographics, alcohol and other drug use, both current POM and past POM were significantly associated with all suicide risk behaviors compared with no POM. Students who reported current POM had the highest adjusted prevalence ratios for suicidal ideation (aPR: 2.30; 95% CI = 1.97–2.69), planning (aPR: 2.33; 95% CI = 1.99–2.79), attempts (aPR: 3.21; 95% CI = 2.56–4.02), and feeling sad or hopeless (aPR: 1.59; 95% CI = 1.37–1.84).

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Contributors' Statement Page

Dr. Wilkins conceptualized the study, drafted the abstract, introduction, results, and discussion sections of the initial manuscript, reviewed and revised the entire manuscript, and led all revisions from internal clearance review processes.

Dr. Clayton conceptualized and designed the study, led all analyses, drafted the methods section of initial manuscript, and reviewed and revised the manuscript.

Dr. Jones interpreted study data, drafted parts of the introduction, results, and discussion sections, and reviewed and revised the manuscript critically for important intellectual content.

Dr. Brown interpreted study data, drafted parts of the discussion section, and reviewed and revised the manuscript.

All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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Students who reported current POM also were significantly more likely than youth who reported past POM to report that they had seriously considered attempting suicide, made a suicide plan, and attempted suicide.

Conclusions: Although POM, particularly current POM, is associated with increases in youths' risk for suicide-related behaviors and experiences, comprehensive prevention approaches that address the intersections between suicide and POM provide a promising path forward for addressing these public health challenges among youth.

Table of Contents Summary:

This study investigates whether the association between youths' prescription opioid misuse and suicide outcomes differs by *recency* of prescription opioid misuse (none, past, current misuse).

Introduction

The intertwined public health challenges of suicide and opioid overdose contribute to substantial morbidity and mortality each year in the United States. During 2018, suicide was the second leading cause of death for youth aged 10–19 years[1]. During 1999–2016, opioid-related overdose death rates among youth aged 10–14 years increased 150%, and rates among youth aged 15–19 years increased 250%[2]. Previous studies have reported that youth with a lifetime history of prescription opioid misuse (POM), defined as taking a prescription opioid without a doctor's prescription or differently than how a doctor prescribed it, are at an increased risk for suicidal ideation, planning, and attempts[3]. Studies among adults have also shown links between POM and suicidal ideation[4, 5] and suicide planning, and attempts[6]. In addition, among adults, more frequent POM has been linked with suicidal ideation[7] as has both past and current POM[8]. There is some evidence to suggest that current substance use (including use of analgesics, broadly defined) is more strongly associated with suicide attempts among adults than past use, although this difference in suicide risk by current and past use does *not* appear to hold true for illicit opioids (heroin) specifically[9]. These findings suggest that unlike other substances, the association between at least illicit opioid use and suicide risk behaviors may *not* vary by recency of opioid use. However, it is important to note that previous research on recency of POM and suicide risk behaviors is still very limited among adults, and even more so among youth populations. This paucity of evidence has implications for clinical, community, and school-based suicide prevention approaches as it remains unclear whether individuals (and youth, in particular) who report current POM should be considered priority for suicide interventions, or if those reporting any POM, regardless of recency of use, should be prioritized for these interventions and services. This report uses data from the 2019 Youth Risk Behavior Survey to examine associations between recency of POM, defined in this paper as current prescription opioid misuse only, past prescription opioid misuse only (not inclusive of current misuse – and referred to for the rest of the paper as past misuse), and no misuse of prescription opioids, and suicide risk behaviors among U.S. high school students. high school students.

Methods

Prevalence estimates were calculated overall and by demographic groups for recency of POM and past 12-month suicide risk behaviors (persistent feelings of sadness or hopelessness, serious consideration of suicide attempt (i.e. suicide ideation), suicide planning, and suicide attempt).

Data are from 13,677 U.S. high school students participating in the 2019 National Youth Risk Behavior Survey (YRBS). The 2019 YRBS collected data from a nationally representative sample of public and private school students in grades 9–12 in the 50 U.S. states and the District of Columbia. Additional information about YRBS sampling, data collection, response rates, and processing is available elsewhere[10]. The exposure of interest was recency of POM. This variable is a three-level composite variable (categories included none, past but not current, and current use) that was created by combining responses to the following questions: “During your life, how many times have you taken prescription pain medicine without a doctor’s prescription or differently than how a doctor told you to use it?”; and “During the past 30 days, how many times did you take prescription pain medicine without a doctor’s prescription or differently than how a doctor told you to use it?” Respondents were instructed to count drugs such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet. Outcomes of interest included suicide ideation, suicide planning, suicide attempts, and depressive symptoms (i.e., felt sad or hopeless), ascertained by responses to the following questions, respectively: “During the past 12 months, did you ever seriously consider attempting suicide?”; 2) “During the past 12 months, did you make a plan about how you would attempt suicide?”; 3) “During the past 12 months, how many times did you actually attempt suicide?” (dichotomized to 0 and 1 or more); and 4) “During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?” (referred to from here on as “feeling sad/hopeless”).

Descriptive analyses included prevalence estimates and associated 95% confidence intervals (CIs) for each recency of POM group and for each suicide-related outcome. These were calculated overall and by demographic groups: sex (male or female), race/ethnicity (non-Hispanic white, non-Hispanic black, or Hispanic), school grade level (9^{th} and 10^{th} or 11^{th} and 12^{th}), and self-reported sexual identity (heterosexual; gay, lesbian, or bisexual; or not sure). Statistically significant differences were determined with the chi-square test, with p-values <0.05 considered significant. Unadjusted and adjusted prevalence ratios (aPRs) and corresponding 95% CIs were calculated; estimates were considered statistically significant if the 95% CI did not include 1.0. Adjusted models included the following covariables: sex, race/ethnicity, grade, sexual identity, current alcohol use, current marijuana use, and lifetime use of illicit drugs. Statistically significant pairwise differences between demographic groups for each outcome were determined by linear contrast analyses; differences were considered significant if the p-value was <0.05. All analyses were conducted with SAS-callable SUDAAN (version 11.0.1) to account for survey weights and the YRBS complex sample design.

Results

During 2019, an estimated 7.4% of students reported past POM, and 7.2% reported current POM (Table 1). An estimated 37.4% of students reported they had felt sad/hopeless; 19% reported that they had seriously considered a suicide attempt; 16.1% had made a suicide plan; and 8.9% had attempted suicide. As shown in Table 1, prevalence of past POM, current POM, and suicide risk behaviors varied across demographic groups. Female high school students reported higher prevalence of both past POM (8.7%; 95% CI 7.3–10.3) and current POM (8.4%; 95% CI 7.1–9.9) and all suicide risk behaviors including seriously considering suicide (24.6%; 95% CI 22.3–27.0), making a suicide plan (20.6%; 95% CI 18.8–22.5), attempting suicide (11.2%; 95% CI 9.7–12.7), and feeling sad or hopeless (47.2%; 95% CI 44.5–49.9) than male high school students (past POM: 6.3%; 95% CI 5.4–7.4; current POM: 6.1%; 95% CI 5.3–7.1; seriously considered suicide: 13.3%; 95% CI 12.0–14.7; made a suicide plan: 11.4%; 95% CI 10.2–12.6; attempted suicide: 6.5%; 95% CI 5.5–7.6; felt sad or hopeless: 27.7%; 95% CI 26.0–29.5). Students who identify as gay, lesbian, or bi-sexual also reported higher prevalence of both past POM (12.5%; 95% CI 9.7–15.8) and current POM (12.0%; 95% CI 9.6–14.9) and all suicide risk behaviors (seriously considered suicide: 49.6%; 95% CI 45.3–53.9; made a suicide plan: 43.8%; 95% CI 40.0–47.7; attempted suicide: 23.9%; 95% CI 20.4–27.9; felt sad or hopeless: 68.7%; 95% CI 64.2–73.0) than high school students who identify as heterosexual (past POM: 6.8%; 95% CI 5.9–7.9; current POM: 6.4%; 95% CI 5.4–7.5; seriously considered suicide: 14.5%; 95% CI 13.3–15.9; made a suicide plan: 12.1%; 95% CI 11.0–13.2; attempted suicide: 6.4%; 95% CI 5.6–7.3; felt sad or hopeless: 32.8%; 95% CI 31.2–34.6) or not sure (past POM: 7.3%; 95% CI 5.0–10.6; current POM: 11.5%; 95% CI 8.2–15.9; seriously considered suicide: 30.8%; 95% CI 24.8–37.4; made a suicide plan: 24.4%; 95% CI 19.8–29.6; attempted suicide: 14.5%; 95% CI 10.1–20.3; felt sad or hopeless: 49.1%; 95% CI 31.2–34.6). Non-Hispanic white students more commonly reported past POM (7.6%; 95% CI 6.4–9.0), seriously considering suicide (19.6%; 95% CI 17.9–21.4), and making a suicide plan (16.2%; 95% CI 14.5–18.1), than students of other race/ethnicities but report lower prevalence of suicide attempts (7.9%; 95% CI 6.8–9.3). Non-Hispanic black students reported greater prevalence of attempting suicide (11.3%; 95% CI 8.8–14.5) than students of other race/ethnicities. Hispanic students reported greater prevalence of current POM (9.8%; 95% CI 8.2–11.6) and feeling sad or hopeless (40.5%; 95% CI 38.1–42.9) than students of other race/ethnicities.

An estimated 44.4% of students who reported current POM reported that during the previous 12 months they had seriously considered a suicide attempt; 39.4% had made a suicide plan; 32.5% had attempted suicide; and 65.4% had felt sad or hopeless (Table 2). Among students who reported past POM, 37.2% had seriously considered a suicide attempt; 32.6% had made a suicide plan; 18.7% had attempted suicide; and 57.4% had felt sad or hopeless during the previous 12 months. Among students with no POM, 15.3% had seriously considered a suicide attempt; 12.7% had made a suicide plan; 6.0% had attempted suicide; and 33.4% had felt sad or hopeless during the previous 12 months (Table 2).

Logistic regression examined the association between recency of POM and suicide risk behaviors among high school students. Across all suicide risk behaviors, prevalence estimates were highest among students reporting current POM, followed by students

reporting past POM; prevalence estimates were lowest among students who reported no POM. After controlling for sex, race/ethnicity, grade, sexual identity, current alcohol use, current marijuana use, and lifetime use of illicit drugs, both current POM and past POM were significantly associated with each of the suicide risk behaviors, compared with no POM (Table 3). Students who reported current POM had the highest adjusted prevalence ratios across each of the following outcomes: seriously considered attempting suicide (aPR: 2.30; 95% CI = 1.97–2.69), made a suicide plan (aPR: 2.33; 95% CI = 1.99–2.79), attempted suicide (aPR: 3.21; 95% CI = 2.56–4.02), and felt sad or hopeless (aPR: 1.59; 95% CI = 1.37–1.84). Students who reported current POM also were significantly more likely than youth who reported past POM to report that they had seriously considered attempting suicide (past POM aPR: 1.70; 95% CI = 1.46–1.99), made a suicide plan (past POM aPR: 1.78; 95% CI = 1.43–2.21), and attempted suicide (past POM aPR: 1.91; 95% CI = 1.43–2.56).

Discussion

During 2019, approximately 40% of high school students had felt sad or hopeless for two or more weeks, during the previous year; 19% had seriously considered suicide; 9% had attempted suicide; and 7% reported current POM. Of particular importance, approximately 33% of youth who reported current POM and 19% who reported past POM had attempted suicide during 2019, compared with only 6% of students who reported no POM. Moreover, the increased risk for suicide-related behaviors and experiences, especially among students reporting current POM, remained even after accounting for demographic characteristics and alcohol, marijuana, and illicit drug use. These findings suggest that, although any POM (both current and past misuse) is associated with increases in students' risk for suicide-related behaviors and experiences, current use is associated with an even greater risk.

Previous research on recency of POM and suicide-related outcomes among adult populations indicates that adults who report past POM, persistent POM (past and current POM), and recent-onset POM are all more likely to report suicidal ideation when compared to those who report no POM[8]. While more research on both adult and youth populations is needed, the findings of the current study suggest that associations between recency of POM and suicide risk behaviors and experiences among youth may operate differently than among adults, with current POM associated most strongly with suicide risk behaviors and experiences among youth.

These findings suggest that identifying youth who are struggling with current POM and connecting them with substance use treatment and services could be a critical approach for preventing youth suicide. The findings from this analysis also suggest that while youth who report current POM may be at highest risk for suicide risk behaviors and experiences, all youth who report POM in their lifetime are at an elevated risk. Prior research has identified a number of shared risk factors for suicide-related behaviors and POM such as prior exposure to adverse childhood experiences and underlying mental health conditions such as depression and anxiety[11–14]. The co-occurrence of POM and suicide-related behaviors and experiences among high school students underscores the importance of comprehensive prevention approaches that address both challenges and their

intersecting risks and protective factors. Communities can address the intersections of POM and youth suicide through “upstream” primary prevention approaches such as preventing adverse childhood experiences (e.g., child maltreatment or witnessing or experiencing violence) which have been linked to higher youth POM and suicide risk[15, 16] and by strengthening strategies that promote safe, stable, nurturing relationships and environments during childhood[17].

In addition, communities can support families and prevent suicide by strengthening economic supports; teaching coping and problem-solving skills to children, adolescents, and their parents; promoting connectedness between youth and their schools, teachers, peers, and family; creating protective environments in schools and at home (e.g., limiting access to such lethal means among students at risk, such as medications and firearms); promoting help-seeking behaviors; reducing stigma; and training teachers and adults to recognize signs of suicide risk (e.g., gatekeeper training) and to respond effectively through referrals to evidence-based substance use and mental health treatment (e.g., cognitive-behavioral therapy)[18].

CDC’s Preventing Suicide Technical Package[18] also provides approaches that address a range of risk and protective factors linked to suicide and in some cases, substance use as well at the individual, relationship, community, and societal levels. These include strategies for preventing suicide risk in the first place (e.g. promoting connectedness), identifying and supporting youth at increased risk, preventing attempts and reattempts, and supporting friends and loved ones affected by suicide attempts or loss. Opioid misuse prevention approaches include primary substance use prevention programs and improving opioid prescribing (e.g., prescription drug monitoring programs, implementation of and adherence to prescribing guidelines, academic detailing, and educating prescribers and patients regarding nonopioid pain management strategies), and enhancing linkage to care and provision of evidence-based treatment for youth with opioid use disorder (e.g., medication-assisted treatment)[19]. As the findings from this analysis suggest, getting youth who report current POM into care may be critical for preventing suicide risk behaviors and experiences. Conversely, addressing underlying suicide risk factors and getting youth who report suicidal ideation and other suicide-related risk behaviors into care may prevent POM.

This report is subject to at least four limitations. First, the data presented apply only to youth who attend school and therefore are not representative of all persons in this age group. During 2017, an estimated 4.7% of youth in grades 10–12 had left school between the beginning of 1 school year and the beginning of the next without earning a high school diploma or alternative credential[20]; therefore, youth who experience a disproportionate level of school attrition (e.g., racial/ethnic and sexual minority youth) might be particularly underrepresented[20]. Second, although survey questions used in this study have demonstrated good test–retest reliability[21], findings are subject to the typical limitations of self-reported data (e.g., potential underreporting or overreporting of health-related behaviors and experiences). Third, these findings are based on cross-sectional data and therefore cannot establish causal relationships; rather, they represent associations at a point in time. Also, the differing time frames of some of the variables reported in these analyses (for example, current POM is measured as POM within the past 30 days whereas

suicide risk behaviors and experiences are all measured for the last 12 months) provide further reason why it is not possible to determine the directionality of associations. Fourth, although the YRBS POM items are intended to capture prescription opioid misuse, it is possible that youth also reported on misuse of non-opioid prescription pain medication. Also, while the POM items capture misuse, they do not capture distinctions between *levels* of misuse (for example, occasional misuse versus frequent use or having an opioid use disorder).

Conclusion

Although POM, particularly current POM, is associated with increases in youths' risk for suicide-related behaviors and experiences within the past 12 months, comprehensive prevention approaches that address the intersections between suicide, POM, and such shared upstream risks as adverse childhood experiences provide a promising path forward for addressing these public health challenges among youth.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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What is Known on This Subject

Suicide and opioid overdose contribute to substantial morbidity and mortality each year in the United States. Previous studies have reported that youth with a lifetime history of prescription opioid misuse are at increased risk for suicidal ideation, planning, and attempts.

What This Study Adds

This study investigates whether the association between youths' prescription opioid misuse (POM) and suicide outcomes differs by recency of prescription opioid misuse (none, past, current misuse). Youth POM, particularly current POM, was associated with increased risk for suicide-related outcomes.

TABLE 1.

Prevalence of prescription opioid misuse (POM) and suicide risk behaviors among high school students, by demographic characteristics — Youth Risk Behavior Survey, United States, 2019

	Total population		POM status			Suicide			Felt sad or hopeless*
Characteristic	Un-weighted No.	% (95% CI)	Never POM† n = 7,362, % (95% CI)	Past POM§ n = 638, % (95% CI)	Current POM¶ n = 661, % (95% CI)	Seriously considered attempt** n = 1,684, % (95% CI)	Made a plan†† n = 1,395, % (95% CI)	Attempted§§ n = 703, % (95% CI)	n = 3,259, % (95% CI)
Total	**8,661**	—	**85.3 (83.5–86.9)**	**7.4 (6.6–8.4)**	**7.2 (6.3–8.3)**	**19.0 (17.6–20.4)**	**16.1 (14.8–17.3)**	**8.9 (8.0–9.8)**	**37.4 (35.6–39.3)**
Male	4,222	50.4 (48.6–52.3)	87.5 (85.9–89.0)	6.3 (5.4–7.4)	6.1 (5.3–7.1)	13.3 (12.0–14.7)	11.4 (10.2–12.6)	6.5 (5.5–7.6)	27.7 (26.0–29.5)
Female	4,371	49.6 (47.7–51.4)	82.9 (80.3–85.3)	8.7 (7.3–10.3)	8.4 (7.1–9.9)	24.6 (22.3–27.0)	20.6 (18.8–22.5)	11.2 (9.7–12.7)	47.2 (44.5–49.9)
Non-Hispanic white	4,158	52.4 (46.8–57.9)	86.8 (84.4–88.9)	7.6 (6.4–9.0)	5.6 (4.4–6.9)	19.6 (17.9–21.4)	16.2 (14.5–18.1)	7.9 (6.8–9.3)	36.5 (34.2–38.7)
Non-Hispanic black	1,087	9.8 (7.4–12.8)	84.9 (81.7–87.6)	6.4 (4.7–8.5)	8.7 (6.5–11.6)	16.6 (14.2–19.3)	14.0 (11.9–16.4)	11.3 (8.8–14.5)	31.9 (27.936.2)
Hispanic	2,267	27.8 (22.5–33.7)	83.0 (80.3–85.4)	7.2 (6.0–8.6)	9.8 (8.2–11.6)	17.2 (15.0–19.7)	15.1 (13.1–17.3)	8.9 (7.2–11.0)	40.5 (38.1–42.9)
9th and 10th	4,586	52.5 (50.8–54.1)	86.1 (84.1–87.8)	6.9 (5.9–8.0)	7.0 (5.8–8.4)	18.3 (16.3–20.3)	15.4 (13.7–17.2)	8.9 (7.9–10.0)	36.1 (33.8–38.4)
11th and 12th	4,006	45.9 (45.9–49.2)	84.5 (82.3–86.5)	8.2 (6.9–9.6)	7.3 (6.1–8.8)	19.8 (18.2–21.4)	16.7 (15.2–18.3)	8.7 (7.5–10.1)	38.9 (36.5–41.4)
Heterosexual	6,856	84.8 (83.7–85.9)	86.8 (84.9–88.5)	6.8 (5.9–7.9)	6.4 (5.4–7.5)	14.5 (13.3–15.9)	12.1 (11.0–13.2)	6.4 (5.6–7.3)	32.8 (31.2–34.6)
Gay/lesbian/ bisexual	927	11.0 (10.2–12.0)	75.5 (70.8–79.7)	12.5 (9.7–15.8)	12.0 (9.6–14.9)	49.6 (45.3–53.9)	43.8 (40.0–47.7)	23.9 (20.4–27.9)	68.7 (64.2–73.0)
Not sure	345	4.1 (3.5–4.8)	81.2 (75.9–85.6)	7.3 (5.0–10.6)	11.5 (8.2–15.9)	30.8 (24.8–37.4)	24.4 (19.8–29.6)	14.5 (10.1–20.3)	49.1 (41.3–57.0)

Abbreviation: CI = confidence interval.

† Never taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed.

§ Taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed one or more times during lifetime, but not during the past 30 days.

¶ Taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed one or more times during the past 30 days.

[**] Seriously considered attempting suicide during the 12 months before the survey.

[††] Made a plan about how to attempt suicide one or more times during the 12 months before the survey.

[§§] Attempted suicide one or more times during the 12 months before the survey.

[*] Felt sad or hopeless every day for **two weeks or more in a row** and stopped doing some usual activities in the past 12 months.

TABLE 2.

Unadjusted prevalence ratios of suicide risk behaviors among high school students, by prescription opioid misuse (POM) — Youth Risk Behavior Survey, United States, 2019

POM status	Unweighted no.	Seriously considered attempt[¶] n = 1,684, % (95% CI)	Unadjusted prevalence ratio (95% CI)	Made a plan[**] n = 1,395 % (95% CI)	Unadjusted prevalence ratio[*] (95% CI)	Attempted[††] n = 703 % (95% CI)	Unadjusted prevalence ratio[*] (95% CI)	Felt sad or hopeless[§§] n = 3,259 % (95% CI)	Unadjusted prevalence ratio[*] (95% CI)
Overall	**8,661**	—	—	—	—	—	—	—	—
Current POM[*]	661	44.4 (39.2–49.8)	2.91 (2.59–3.26)	39.4 (33.8–45.2)	3.11 (2.70–3.59)	32.5 (28.3–36.9)	5.37 (4.53–6.37)	65.4 (59.9–70.4)	1.96 (1.79–2.14)
Past POM[†]	638	37.2 (33.3–41.2)	2.43 (2.16–2.74)	32.6 (28.6–36.9)	2.57 (2.22–2.99)	18.7 (15.6–22.1)	3.09 (2.50–3.82)	57.4 (52.1–62.6)	1.72 (1.57–1.89)
Never POM[§]	7,362	15.3 (14.1–16.5)	Referent	12.7 (11.6–13.8)	Referent	6.0 (5.3–6.9)	Referent	33.4 (31.7–35.1)	Referent

Abbreviation: CI = confidence interval.

[*] Taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed one or more times during the past 30 days

[†] Taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed one or more times during lifetime, but not during the past 30 days.

[§] Never taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed

[¶] Seriously considered attempting suicide during the 12 months before the survey.

[**] Made a plan about how to attempt suicide one or more times during the 12 months before the survey.

[††] Attempted suicide one or more times during the 12 months before the survey.

[§§] Almost every day for 2 or more weeks in a row so that they stopped doing some usual activities, during the 12 months before the survey.

TABLE 3.

Adjusted prevalence ratios of suicide risk behaviors among high school students, by prescription opioid misuse (POM) status — Youth Risk Behavior Survey, United States, 2019

	Seriously considered attempting suicide[¶]		Made a suicide plan[**]		Attempted suicide[††]		Felt sad or hopeless[§§]	
POM status	**aPR**	**95% CI**	**aPR**	**95% CI**	**aPR**	**95% CI**	**aPR**	**95% CI**
None[*]	1.0	—	1.0	—	1.0	—	1.0	—
Past[†]	1.70[¶¶]	1.46–1.99	1.78[¶¶]	1.43–2.21	1.91[¶¶]	1.43–2.56	1.39[¶¶]	1.23–1.56
Current[§]	2.30[¶¶,***]	1.97–2.69	2.33[¶¶,***]	1.99–2.79	3.21[¶¶,***]	2.56–4.02	1.59[¶¶]	1.37–1.84

Abbreviations: aPR = adjusted prevalence ratio; CI = confidence interval.

Note: Model covariates included sex, race/ethnicity, grade, sexual identity, current alcohol use, current marijuana use, and lifetime use of illicit drugs.

[*] Never taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed

[†] Taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed one or more times during lifetime, but not during the past 30 days.

[§] Taken prescription pain medicine without a doctor's prescription or differently than how a doctor prescribed one or more times during the past 30 days.

[¶] Seriously considered attempting suicide during the 12 months before the survey.

[**] Made a plan about how to attempt suicide one or more times during the 12 months before the survey.

[††] Attempted suicide one or more times during the 12 months before the survey.

[§§] Almost every day for 2 or more weeks in a row so that they stopped doing some usual activities, during the 12 months before the survey.

[¶¶] Significantly different from none at p-value <0.05.

[***] Significantly different from past POM at p-value <0.05