

Childhood Sexual Violence and Substance Use Among South Asian Women Attending U.S. Colleges and Universities

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ABSTRACT

Background:

Childhood sexual violence is associated with adverse psychiatric and behavioral health outcomes, including substance use; however, little is known about these relationships among South Asian women attending U.S. colleges and universities. This study examined the prevalence of childhood sexual violence and its association with alcohol, nicotine, and non-prescription drug use in this understudied population. Methods: A cross-sectional online survey was conducted among 673 South Asian women enrolled in U.S. colleges and universities between February and March 2025. Childhood sexual violence was assessed using two items adapted from the Adverse Childhood Experiences questionnaire. Substance use outcomes included frequent alcohol consumption, current nicotine use, and lifetime non-prescription drug use during college. Multivariable logistic regression models estimated adjusted odds ratios (AORs) and 95% confidence intervals (CIs), controlling for age, birthplace, HHS region, distance from parents, year in college, relationship status, and sexual orientation. Results: Overall, 27.0% of respondents reported childhood sexual violence. Childhood sexual violence was independently associated with greater odds of non-prescription drug use (AOR = 4.14, 95% CI: 2.64–6.47), nicotine use (AOR = 2.79, 95% CI: 1.87–4.17), and frequent alcohol consumption (AOR = 2.62, 95% CI: 1.71–4.02). LGBTQIA+ identity was associated with higher odds of non-prescription drug use and nicotine use, while relationship status was associated only with frequent alcohol consumption. Conclusions: Childhood sexual violence was a strong and consistent correlate of substance use among South Asian women attending U.S. colleges and universities. These findings underscore the importance of trauma-informed, culturally responsive screening and behavioral health interventions that address the unique needs of South Asian women during emerging adulthood.

Keywords: South Asian women; Childhood Sexual Violence; Substance Use; Trauma-Informed Care

INTRODUCTION

Childhood sexual violence is a well-established risk factor for a range of adverse psychiatric, behavioral, and physical health outcomes across the life course. Exposure to childhood sexual trauma has been associated with depression, anxiety, post-traumatic stress symptoms, substance use, self-harm, and increased risk of chronic disease in adulthood [1-2]. Among adverse childhood experiences, childhood sexual violence is one of the strongest predictors of later mental health disorders and maladaptive coping behaviors, including alcohol, nicotine, and illicit drug use [3-4].

The transition to college represents a developmental period during which the effects of childhood adversity may become especially salient [5]. Emerging adulthood is characterized by increasing independence, identity exploration, and exposure to new social environments, all

of which can contribute to elevated engagement in risk-taking behaviors [5]. Although substance use among adolescents has remained relatively stable in recent years, college students continue to report high levels of alcohol consumption, nicotine use, and experimentation with illicit substances [6]. Prior research suggests that students with histories of childhood violence may be particularly vulnerable to substance use during this period, as they navigate academic pressures, social transitions, and reduced family supervision [7]. Furthermore, substance has been conceptualized as one potential maladaptive coping response among individuals with histories of trauma, whereby alcohol, nicotine, and other substances may temporarily alleviate psychological distress while potentially contributing to poorer long-term psychiatric outcomes [8].

Several theoretical frameworks have been proposed to explain the relationship between childhood sexual violence and substance use. Self-medication theory suggests that individuals exposed to traumatic experiences may use alcohol or drugs to reduce symptoms of emotional distress, intrusive memories, or anxiety [9-10]. Likewise, developmental trauma theories posit that chronic exposure to childhood adversity alters stress-response systems, emotion regulation, and interpersonal functioning, increasing vulnerability to psychiatric disorders and substance use across the life course [11]. These pathways may be particularly relevant during emerging adulthood, when individuals experience increasing independence and heightened exposure to substances [11].

Despite the extensive literature linking childhood adversity and substance use, important gaps remain regarding Asian American populations. Asian Americans are frequently treated as a single, homogeneous racial group in health research, obscuring important differences in experiences, risk factors, and health outcomes across ethnic subgroups. South Asians—individuals tracing family origins to Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka—represent one of the fastest-growing immigrant populations in the United States, with more than 5.4 million individuals currently residing in the country [12]. Yet South Asian Americans remain underrepresented in public health research, particularly in studies examining trauma exposure and substance use.

Existing evidence suggests that childhood sexual violence may be an important but overlooked concern among South Asian American women. In a prior study of South Asian women in the United States, more than one in five respondents reported experiencing childhood sexual abuse [13]. These findings challenge persistent stereotypes portraying Asian Americans as a uniformly low-risk or “model minority” population and suggest the need for greater attention to trauma-related health disparities within South Asian communities [13]. At the same time, South Asian women may encounter unique cultural and structural factors that influence both trauma disclosure and coping behaviors. Cultural stigma surrounding trauma, sexuality, and mental illness may delay disclosure, reduce treatment seeking and contribute to reliance on maladaptive coping strategies such as substance use [14-15].

These issues may be particularly relevant among South Asian women attending U.S. colleges and universities. College campuses often provide increased access to alcohol, nicotine products, and recreational drugs, while simultaneously exposing students to academic, financial, and social stressors [5]. Emerging adulthood also represents the peak age of onset for many psychiatric disorders, making the college years a particularly vulnerable period for trauma-related behavioral health consequences [16]. For South Asian women with histories of childhood sexual violence, these stressors may

contribute to heightened vulnerability to substance use as a coping mechanism [13]. However, little research has examined the relationship between childhood sexual violence and substance use among South Asian women in higher education settings.

To address this gap, the present study examines the prevalence of childhood sexual violence among South Asian women enrolled in U.S. colleges and universities and investigates its association with alcohol use, nicotine use, and non-prescription drug use. We hypothesized that South Asian women reporting childhood sexual violence would demonstrate significantly greater odds of alcohol, nicotine, and non-prescription drug use, consistent with theoretical models proposing that substance use may function as a maladaptive coping response to childhood trauma. Findings from this study contribute to a growing body of literature on South Asian health disparities and may inform culturally responsive prevention, screening, and intervention efforts for college-aged South Asian women.

METHODS

Study Design and Study Sample:

This study utilized a cross-sectional survey design to examine associations between childhood sexual violence and substance use behaviors among South Asian women attending colleges and universities in the United States. Data were collected through an anonymous online survey administered in Qualtrics between February 19, 2025, and March 31, 2025. Electronic informed consent was obtained from all participants prior to survey participation.

Eligible participants were required to (1) self-identify as a South Asian woman, (2) be at least 18 years of age, and (3) be currently enrolled in a college or university in the United States. Participants were recruited through social media platforms, student organizations, university networks, and South Asian community organizations. Because no national sampling frame exists for South Asian women attending U.S. colleges and universities, a nonprobability recruitment strategy was used to maximize participation across multiple geographic regions and institution types. As an incentive, participants were offered the opportunity to enter a raffle to win one of several \$50 Amazon gift cards.

A total of 955 responses were received. Responses were excluded if participants did not meet eligibility criteria, completed fewer than 50% of survey items, completed the survey in fewer than five minutes, or were identified as duplicate or suspected automated (bot-generated) responses. The final analytic sample consisted of 673 respondents. The study protocol was approved by The George Washington University Institutional Review Board (IRB #NCR25631).

Instrument and Measures:

This study was part of a larger study on South Asian women who currently attend a college or university in the United States. Data utilized in this analysis were collected through a 55-question digital survey administered via the Qualtrics platform. Questions for this study assessed socio-demographics, childhood sexual experiences of violence, alcohol use, nicotine use, and non-prescription drug use.

Socio-demographics:

The socio-demographic variables assessed included the eligibility criteria of self-identifying as South Asian female and current enrollment in a U.S. college or university. Other demographics included age, place of birth (U.S.-born or not), and, for those not born in the U.S., length of residency in the United States. Additional variables included sexual orientation, year in college, health insurance type, and relationship status. College-related characteristics included the college's ZIP code, distance from parents, and institution size. Location data were subsequently categorized into ten U.S. Department of Health and Human Services (HHS) geographic regions based on the resident's college state.

Childhood Sexual Violence:

Childhood sexual violence was assessed using two items adapted from the Adverse Childhood Experiences (ACE) questionnaire. Participants were asked whether, during the first 18 years of life, a relative or family friend had (1) touched or fondled their body in a sexual way or (2) touched their own body in a sexual way in the participant's presence. Responses were coded as "Yes" or "No." Participants responding affirmatively to either item were classified as having experienced childhood sexual violence. This brief screening approach was selected to minimize participant burden in a broader survey while identifying exposure to childhood sexual violence.

Alcohol Use:

Alcohol use was assessed with the question, "In the last 60 days, how often did you drink alcohol?" Response options included "Never," "Once a month," "1–2 days per week," "3–5 days per week," and "Every day or almost every day." For multivariable analyses, responses were dichotomized into infrequent alcohol consumption ("Never" or "Once a month") and frequent alcohol consumption ("1–2 days per week" or more) to distinguish lower- and higher-frequency alcohol use. Alcohol consumption was dichotomized to distinguish infrequent from frequent use because preliminary analyses indicated sparse observations in the highest frequency categories, limiting the stability and interpretability of ordinal models.

Nicotine Use:

Current use of e-cigarettes or vape products was assessed with the item, "Do you currently use e-cigarettes

or vape products?" Response options included: "Multiple times a day," "Once a day," "A few times a week," "Less than once a week," and "No, I have never used e-cigarettes or vape products." Response categories were dichotomized to distinguish any substance use from no substance use because of sparse observations within higher-frequency categories and to facilitate clinically meaningful interpretation.

Non-Prescription Drug Use:

Participants' non-medical use of various substances during their college experience was assessed using a self-report questionnaire. Respondents were asked, "How often have you ever used the following drugs (non-medical use ONLY) during your college experience?" Substances included prescription stimulants (e.g., Ritalin, Dexedrine), cocaine (coke, crack), methamphetamine (speed, crystal meth, ice), inhalants (e.g., poppers, nitrous, glue, paint thinner), sedatives or sleeping pills (e.g., Valium, Xanax, GHB), hallucinogens (e.g., Ecstasy, MDMA, LSD, mushrooms, PCP, Special K), heroin, prescription opioids (e.g., morphine, codeine, fentanyl, oxycodone), and cannabis (e.g., marijuana, edibles, vaped cannabis). Due to low prevalence across several individual drug categories, responses were combined into a binary measure indicating any lifetime non-prescription drug use during college ("At least once") versus no use ("Never"). Response categories were dichotomized to distinguish any substance use from no substance use because of sparse observations within higher-frequency categories and to facilitate clinically meaningful interpretation.

Statistical Analysis:

Statistical analyses were conducted using SPSS version 29. Descriptive statistics, including frequencies and percentages, were calculated for all study variables. Bivariate analyses were conducted to examine associations between childhood sexual violence, socio-demographic characteristics, and substance use outcomes. Covariates were selected a priori based on previous literature examining substance use among college students and included age, birthplace, HHS region, distance from parents, year in college, relationship status, and sexual orientation. Multivariable logistic regression analyses were conducted to examine associations between childhood sexual violence and three substance use outcomes: non-prescription drug use, nicotine use, and frequent alcohol consumption. Adjusted odds ratios (AORs) and 95% confidence intervals (CIs) were estimated for each model.

RESULTS

The final analytic sample included 673 South Asian women enrolled in colleges and universities across the United States. The majority of respondents were between 20 and 24 years of age (59.4%), and 75.1% were born in the United States (Table 1). Among participants born outside the United States, nearly half (48.8%) had lived in the

country for fewer than five years. Most respondents identified as heterosexual (82.2%), while 17.8% identified

as LGBTQIA+. Slightly more than half of participants reported being in a relationship (53.6%).

Characteristic	N (%)
Age (N=672)	
18-19	113 (16.8)
20-24	399 (59.4)
25-29	120 (17.9)
30+	40 (6.0)
Born in the US (N=672)	
Yes	505 (75.1)
Length of U.S. Residency (N=166)	
Less than 5 years	81 (48.8)
6-10 years	51 (30.7)
11+ years	34 (20.5)
Sexual Orientation (N=642)	
Heterosexual	528 (82.2)
LGBTQIA+	114 (17.8)
Household Income (N=671)	
Under \$50,000	246 (36.7)
\$50,000-99,999	203 (30.3)
\$100,000-199,999	149 (22.1)
Over \$200,000	73 (10.9)
Health Insurance Type (N=671)	
Parent or Employer Sponsored Health Insurance	188 (28.0)
Student/College Provided Health Insurance	304 (45.3)
Marketplace or Short-Term Health Plans	59 (8.8)
Public Insurance (Medicaid)	80 (11.9)
No Insurance/Unknown	40 (6.0)
Relationship Status (N=670)	
Single	311 (46.4)
In a Relationship	359 (53.6)

Table 1: Socio-Demographic Characteristics of Study Sample (N=673)

Respondents represented all ten U.S. Department of Health and Human Services (HHS) regions, with the largest proportion attending colleges in Region 3 (21.8%) and Region 9 (17.2%) (Table 2). Approximately 60.8%

attended colleges located within a four-hour drive of their parents' residence, and over one-quarter (27.1%) attended institutions with enrollment exceeding 20,000 students. Participants were distributed across undergraduate and graduate levels, with the largest proportion identifying as sophomores (26.4%).

HHS Region (Determined by Respondent's College State)(N=633)	N (%)
Region One - Boston (includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)	50 (7.9)
Region Two - New York (includes New Jersey, New York, Puerto Rico, and the Virgin Islands)	30 (4.7)

Region Three - Philadelphia (includes Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia)	138 (21.8)
Region Four - Atlanta (includes Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee)	104 (16.4)
Region Five - Chicago (includes Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin)	72 (11.4)
Region Six - Dallas (includes Arkansas, Louisiana, New Mexico, Oklahoma, and Texas)	36 (5.7)
Region Seven - Kansas City (includes Iowa, Kansas, Missouri, and Nebraska)	20 (3.2)
Region Eight - Denver (includes Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming)	22 (3.5)
Region Nine - San Francisco (includes Arizona, California, Hawaii, Nevada, American Samoa, Commonwealth of the Northern Mariana Islands, Federated States of Micronesia, Guam, Marshall Islands, and Republic of Palau)	109 (17.2)
Region Ten - Seattle (includes Alaska, Idaho, Oregon, and Washington)	52 (8.2)
Distance from Parents (N=670)	
Less than 1 hour drive	172 (25.7)
2-4-hour drive	235 (35.1)
5-7-hour drive	109 (16.3)
Plane Travel	154 (23.0)
College Size (# of students) (N=672)	
0-1,999	33 (4.9)
2,000-5,999	162 (24.1)
6,000-9,999	145 (21.6)
10,000-19,999	150 (22.3)
20,000 or more	182 (27.1)
College Level (N=671)	
Freshman (Year 1)	78 (11.6)
Sophomore (Year 2)	177 (26.4)
Junior (Year 3)	154 (23.0)
Senior (Year 4 or Later)	110 (16.4)
Graduate/Doctoral/Law Student	152 (22.7)

Table 2: Geographic Characteristics of the Study Sample (N=673)

As shown in Table 3, more than one-quarter of respondents (27.0%) reported experiencing childhood sexual violence. Substance use behaviors were common within the sample. Nearly half of respondents (48.0%)

reported consuming alcohol at least one to two days per week, while 18.2% reported drinking alcohol three or more days per week. Almost half of respondents (47.4%) reported engaging in non-prescription drug use during college, and more than one-third (36.6%) reported current nicotine use.

Characteristic	N (%)
<i>Childhood Sexual Violence</i>	168 (27.0%)
Frequency of Alcohol Consumption: N=624	
Never	177 (28.4)

Once a Month	147 (23.6)
1-2 Days Per Week	186 (29.8)
3-5 Days Per Week	82 (13.1)
Every Day or Nearly Every Day	32 (5.1)
<i>Non-Prescription Drug Usage: N=599</i>	
Yes	284 (47.4)
<i>Nicotine Usage: N=623</i>	
Yes	228 (36.6)

Table 3: Health Characteristics and Risk-Taking Behaviors (N=673)

Table 4 below presents adjusted odds ratios from multivariable logistic regression models examining associations between childhood sexual violence and three substance use outcomes: non-prescription drug use, nicotine use, and frequent alcohol consumption. All models were adjusted for nativity, distance from parents, year in college, relationship status, and sexual orientation

Childhood sexual violence was consistently associated with all three substance use outcomes. Compared with respondents who did not report childhood sexual violence, those reporting childhood sexual violence had more than four times the odds of non-prescription drug use (AOR = 4.14, 95% CI: 2.64–6.47), nearly three times the odds of nicotine use (AOR = 2.79, 95% CI: 1.87–4.17), and associated to frequent consumption of alcohol (AOR = 1.51, 95% CI: 1.01–2.26), after adjusting for all covariates.

Sexual orientation was also significantly associated with substance use. South Asian women identifying as LGBTQIA+ had more than three times the odds of non-prescription drug use (AOR = 3.28, 95% CI: 1.83–5.70) and nearly twice the odds of nicotine use (AOR = 1.98, 95% CI: 1.23–3.18) compared with heterosexual respondents. Sexual orientation was also significantly associated with frequent alcohol consumption, with nearly twice the odds of alcohol consumption among those identifying as LGBTQIA+ compared with heterosexual respondents (AOR 1.51, 95% CI: 1.01 – 2.26).

Relationship status was significantly associated only with frequent alcohol consumption. Respondents who were in a relationship had 1.67 times greater odds of reporting weekly or more frequent alcohol consumption compared with those who were not in a relationship (AOR = 1.67, 95% CI: 1.22–2.827). Relationship status was not significantly associated with non-prescription drug use or nicotine use.

	Non-Prescription Drug Use OR (CI) Model 1	Nicotine Use OR (CI) Model 2	Frequency of Alcohol Consumption OR (CI) Model 3
Sexual Orientation (LGBTQIA+ vs. heterosexual)	3.28 (1.83-5.70)***	1.98 (1.23 – 3.18)**	1.51 (1.01 – 2.26)*
Relationship Status	0.79 (0.54 – 1.17)	1.30 (0.89 – 1.89)	1.67 (1.22 – 2.27)***
Childhood Sexual Violence	4.14 (2.64 – 6.47)***	2.79 (1.87 – 4.17)***	2.19 (1.55 – 3.08)***

Table 4: Multivariable Logistic Regression Models Examining Substance Use Behaviors

All models were adjusted for nativity, distance from parents' residence, year in college, sexual orientation, and relationship status.

Statistical Significance: *p<0.05, **p<0.01, ***p<0.001

DISCUSSION

This study examined the association between childhood sexual violence and substance use behaviors among South Asian women attending colleges and universities across the United States. Childhood sexual violence was the factor most strongly associated with all three substance use

outcomes in the adjusted models. Women reporting childhood sexual violence had more than four times the odds of non-prescription drug use, nearly three times the odds of nicotine use, and more than twice the odds of frequent alcohol consumption compared with women who did not report childhood sexual violence. In addition, more than one-quarter of respondents (27.0%) reported experiencing childhood sexual violence, highlighting the substantial burden of trauma within this understudied population. Although prevalence estimates vary across studies and measurement approaches, reported rates of childhood sexual abuse among U.S. college women are generally lower than the prevalence observed in this study. These findings also align with our previous research

documenting elevated rates of childhood sexual violence among South Asian women in the United States, suggesting that childhood trauma may represent a persistent and underrecognized behavioral health concern within this population.

Several theoretical frameworks may help explain these findings. The self-medication hypothesis proposes that individuals exposed to traumatic experiences may use alcohol, nicotine, or other substances to alleviate emotional distress, intrusive memories, anxiety, or other trauma-related symptoms [9-10]. Although these behaviors may provide temporary psychological relief, they often contribute to worsening psychiatric symptoms and increased risk of substance dependence over time [10]. Similarly, the developmental trauma theory suggests that childhood sexual violence may alter neurobiological stress-response systems, emotion regulation, and interpersonal functioning, thereby increasing vulnerability to maladaptive coping strategies during adolescence and emerging adulthood course [11]. The transition to college may represent a developmental context in which these associations become particularly salient, where students may further amplify these vulnerabilities through increased independence, academic pressures, changing social networks, and greater access to alcohol and other substances course [11]. The strong and consistent associations observed across all three substance use outcomes are consistent with these theoretical frameworks and support the hypothesis that trauma-related coping processes may help explain the observed relationships between childhood sexual violence and substance use among South Asian college women. However, these cross-sectional findings cannot establish whether these mechanisms are responsible for the observed associations. At the same time, the majority of women reporting childhood sexual violence did not report every substance use behavior examined, highlighting the importance of resilience and suggesting that individual, family, and community-level protective factors may mitigate the long-term behavioral health consequences of childhood trauma [17]. Future research should identify these protective factors to inform strengths-based prevention and intervention strategies.

The observed associations between childhood sexual violence and substance use are consistent with previous research demonstrating that childhood trauma, emotional dysregulation, and increased vulnerability to alcohol, nicotine, and illicit drug use across the life course [2-3,7]. Although several theoretical and longitudinal studies have proposed mechanisms involving altered stress regulation and maladaptive coping, the present cross-sectional study cannot determine whether these pathways explain the associations observed in this sample [2-3,7].

Sexual orientation also emerged as an important correlate of substance use. South Asian women identifying as LGBTQIA+ experienced substantially greater odds of both non-prescription drug use and nicotine use compared

with heterosexual participants. These findings are consistent with previous literature demonstrating that individuals with multiple marginalized identities often experience higher levels of minority stress, discrimination, and barriers to culturally responsive health care [18]. For South Asian LGBTQIA+ women, the intersection of cultural expectations surrounding gender and sexuality with broader societal discrimination may further increase vulnerability to substance use [19]. These findings emphasize the importance of integrating culturally responsive and LGBTQIA+-affirming approaches into behavioral health services for South Asian communities.

Relationship status was associated only with frequent alcohol consumption, with respondents who reported being in a relationship demonstrating higher odds of weekly or more frequent alcohol use than those who were not in a relationship. Although this association was modest compared with the effects observed for childhood sexual violence, it suggests that interpersonal relationships may influence alcohol use patterns during emerging adulthood. Additional research is needed to better understand the social and contextual factors that contribute to alcohol use among South Asian college women.

Beyond the regression findings, this study documents a high prevalence of substance use among South Asian women attending U.S. colleges and universities. Nearly one-half of respondents reported non-prescription drug use during college, more than one-third reported current nicotine use, and approximately one-half reported consuming alcohol one or more days per week. Although these prevalence estimates appear higher than those reported in several national studies of U.S. college students, direct comparisons should be interpreted cautiously. Differences in study populations, sampling strategies, definitions of substance use, recall periods, and survey instruments contribute to observed differences in prevalence estimates [20]. For example, the American College Health Association has reported substantially lower prevalence of nicotine use, recreational stimulant use, cannabis use, cocaine use, and several other substances among women attending U.S. colleges [21]. Together, these findings are consistent with the possibility that South Asian women experience unique vulnerabilities that may not be adequately captured when Asian American populations are analyzed as a single racial or ethnic category.

These theoretical pathways may be particularly relevant within South Asian communities. Cultural stigma surrounding sexual violence, mental illness, and substance use may discourage disclosure, delay treatment seeking, and contribute to internalized coping strategies. Family expectations, concerns regarding shame or family reputation, and limited access to culturally responsive behavioral health services may further compound these challenges. Consequently, childhood sexual violence may remain underrecognized and undertreated within South

Asian communities, potentially contributing to persistent behavioral health consequences.

These findings have important implications for psychiatric practice. Clinicians working with college-aged South Asian women should consider routine screening for childhood trauma when evaluating patients presenting with alcohol, nicotine, or other substance use. Trauma-informed assessment that incorporates culturally responsive discussions surrounding family dynamics, stigma, and help-seeking behaviors may improve identification of students at increased risk for behavioral health concerns. Early identification of childhood trauma within college counseling centers, student health services, and primary care settings may provide opportunities to identify students at elevated risk for substance use and facilitate timely referral to appropriate behavioral health services. Integrating trauma-focused interventions with substance use treatment may be particularly beneficial for this population.

Strengths and Limitations

This study has several strengths. To our knowledge, it represents one of the largest studies examining childhood sexual violence and substance use among South Asian women attending U.S. colleges and universities. Participants were recruited from colleges and universities across all ten U.S. Department of Health and Human Services regions, enhancing the geographic diversity of the sample and reducing the likelihood that findings reflect experiences unique to a single institution or geographic area. Additionally, the study simultaneously examined multiple substance use behaviors, providing a more comprehensive assessment of behavioral health than studies focused on a single substance.

Several limitations should also be considered. First, the cross-sectional study design precludes conclusions regarding temporal ordering or causal relationships between childhood sexual violence and substance use behaviors. Consequently, the observed associations should not be interpreted as evidence that childhood sexual violence causes subsequent substance use. Second, all measures relied on self-report and are therefore subject to recall and social desirability bias.

Third, participants were recruited using a nonprobability convenience sampling strategy that incorporated social media, South Asian student organizations, community networks, and snowball sampling. Although this approach facilitated recruitment of one of the largest geographically diverse samples of South Asian college women in the United States, it may have introduced selection bias. Students who were more engaged with South Asian cultural or student organizations, more active on social media, or more interested in mental health research may have been more likely to participate than students who are less socially connected or less willing to discuss sensitive topics. Consequently, the study sample may not be fully

representative of all South Asian women attending U.S. colleges and universities.

Fourth, childhood sexual violence was assessed using two self-reported items adapted from the Adverse Childhood Experience (ACE) questionnaire. Although these items provide a practical and widely used approach for identifying exposure to childhood sexual violence in population-based research, they do not capture the complexity of childhood sexual trauma. Specifically, the measure does not address the severity, frequency, duration, age of occurrence, relationship to the perpetrator, or distinctions between the contact and non-contact forms of sexual abuse. These factors may influence subsequent behavioral health outcomes and could contribute to heterogeneity in the associations observed. Consequently, the findings should be interpreted as reflecting the presence or absence of childhood sexual violence rather than the full spectrum of childhood sexual trauma experiences.

Finally, although the multivariable models adjusted for several demographic characteristics, residual confounding by unmeasured factors cannot be ruled out. The survey did not assess psychosocial and clinical factors that may influence substance use behaviors, including symptoms of post-traumatic stress disorder (PTSD), current psychiatric treatment, family history of substance use, perceived social support, or broader indicators of socioeconomic adversity. Because these factors were not incorporated into the present analyses, the observed associations should be interpreted cautiously, and future longitudinal studies should examine these complex pathways more comprehensively.

Future studies should incorporate more comprehensive, validated measures of childhood trauma, psychiatric symptoms, and psychosocial risk factors are needed to better characterize the pathways linking childhood sexual violence with substance use among South Asian women

CONCLUSION

As one of the largest studies examining childhood sexual violence and substance use among South Asian women attending U.S. colleges and universities, these findings contribute to a limited but growing body of literature on trauma-related behavioral health disparities within South Asian populations. Childhood sexual violence was consistently associated with greater odds of non-prescription drug use, nicotine use, and frequent alcohol consumption, underscoring the importance of recognizing childhood trauma as an important correlate of substance use behaviors among South Asian women during emerging adulthood. These findings highlight the need for trauma-informed, culturally responsive prevention, screening, and treatment strategies that recognize the unique experiences of South Asian women and support healthier transitions into adulthood. Future longitudinal studies are needed to clarify the temporal relationships and potential mechanisms linking childhood sexual

violence with substance use and to identify protective factors that foster resilience and improve long-term psychiatric outcomes.

CONFLICT OF INTEREST

The author declares no conflicts of interest.

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