



Adolescent-Specific Risk and Protective Factors of Substance Use Among High School Students



INTRODUCTION

- Substance use is a significant public health concern in the United States and nearly 47% of high school students report using an illegal drug before graduation.
- Substance use during adolescence increases the likelihood of future substance use disorders and long-term health complications.
- The factors influencing adolescent substance use are diverse, including individual, familial, and environmental domains.
- Identifying both common and substance-specific risk factors is essential for developing targeted interventions.
- This study aims to (1) assess the prevalence of substance use among high school students and (2) identify key risk and protective factors associated with alcohol, tobacco, and illicit drug use in this population.

METHODS

- This study utilized a cross-sectional design with data from the National Survey on Drug Use and Health.
- Adolescents aged 12–17 who were currently attending or expected to attend high school (grades 9–12) as full-time students were included.
- The primary outcomes were alcohol, tobacco, and illicit drug use within the past year.
- Six adolescent-specific domains were examined: academic engagement and performance, antisocial behavior, youth enrichment activities, religious involvement, parental involvement, and substance use prevention education.
- Weighted percentages were calculated for each variable, and associations between risk and protective factors and substance use outcomes were assessed using Rao-Scott Chi-square tests.

- Multivariable logistic regression analyses were conducted to identify factors within these domains associated with past-year alcohol, tobacco, and illicit drug use, adjusting for sociodemographic variables (sex, race/ethnicity, English proficiency, insurance status, household poverty level, and family assistance).

RESULTS

The final study sample comprised 6,072 individuals, representing a weighted population of 13,131,547 US high school students. A detailed study flow diagram is provided in Figure 1.

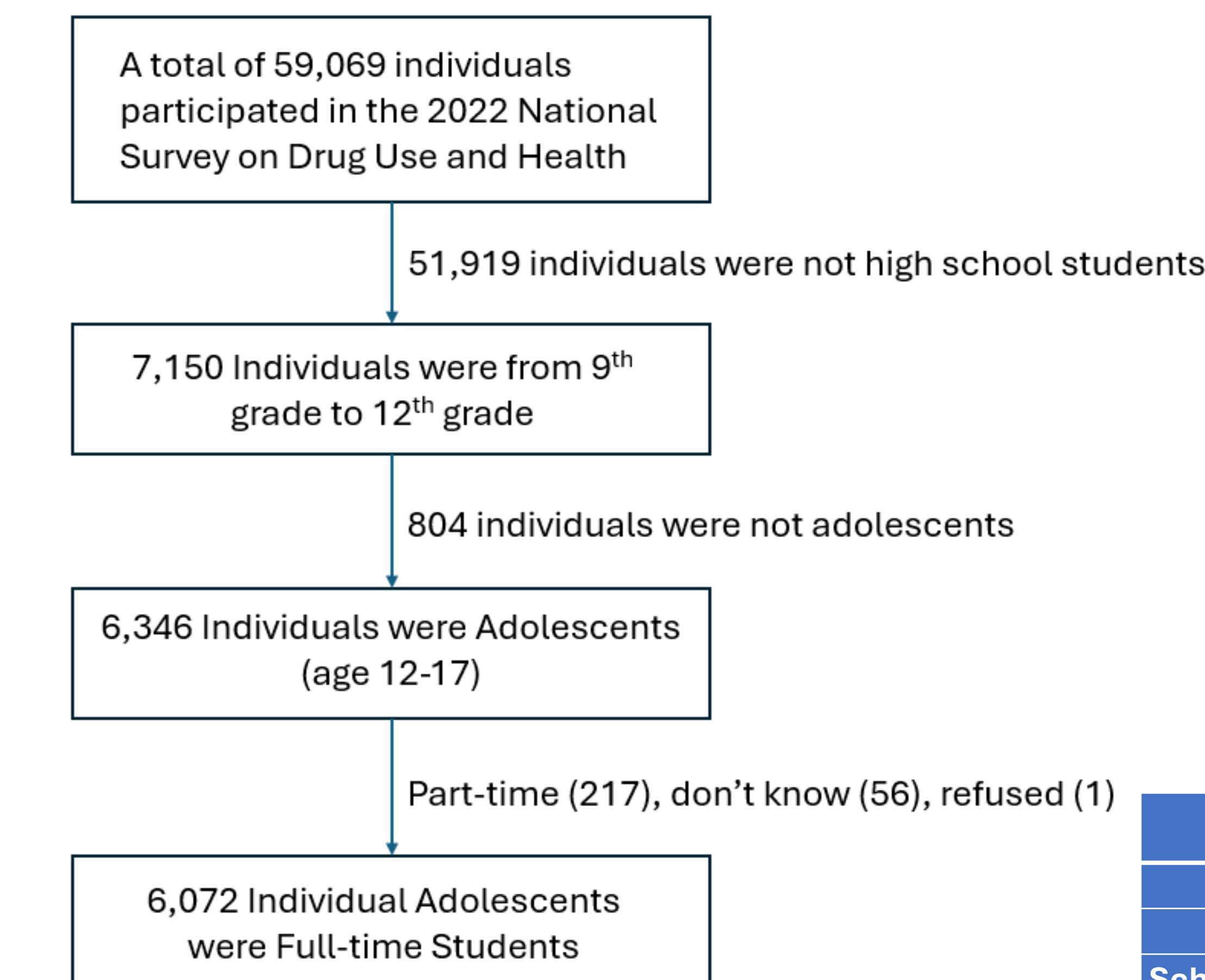
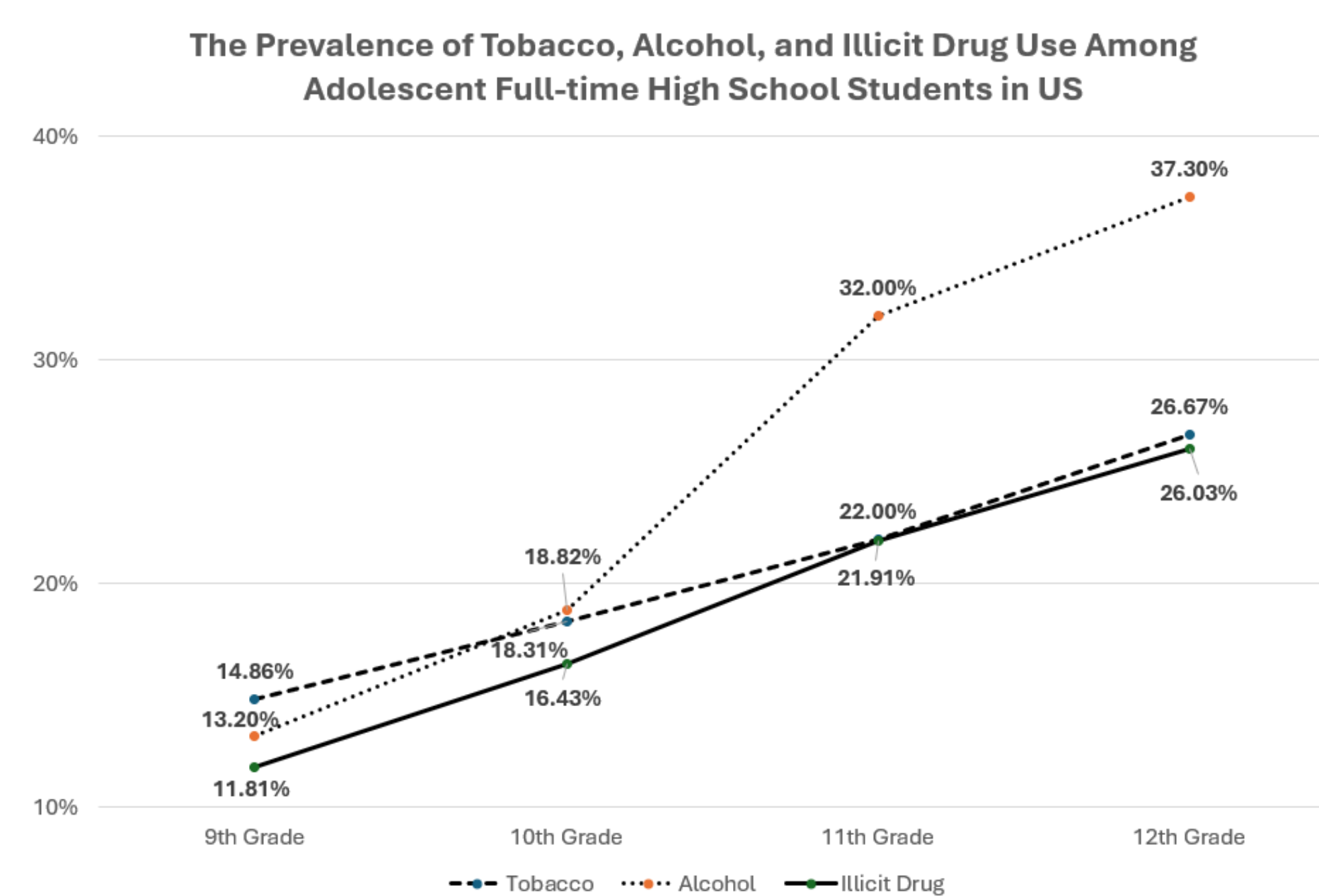


Figure 1: Study Flow Diagram



RESULTS

Variables --- n (wt%)	Alcohol Use	p	Tobacco Use	p	Illicit Drug	p
Substance use outcome (yes)	1468 (23.5)		1281(19.6)		1182(18.0)	
Six domain categories						
School performance						
Negative	23 (35.3)		23 (41.6)		27 (63.5)	
Positive	1396 (23.4)		1200(19.0)		1095 (17.3)	
Antisocial behavior						
Yes	656 (34.1)	***	618 (29.9)	***	578 (29.2)	***
No	797 (18.7)		649 (14.8)		591 (12.8)	
Youth enrichment activity						
Yes	432 (18.8)	***	484 (19.1)		436 (18.5)	
No	1025 (26.3)		785 (19.8)		733 (17.7)	
Religious involvement						
Positive	831 (21.7)	**	743 (17.8)	**	645 (15.4)	***
Negative	610 (27.7)		511 (23.2)		509 (23.2)	
Parental involvement						
Positive	1430 (23.3)		1233(19.3)		1140 (17.7)	
Negative	21 (40.8)		25 (32.8)		22 (34.0)	
Prevention education						
Positive	1299 (23.6)		1105(18.9)	*	1021 (17.1)	*
Negative	132 (24.2)		138 (25.2)		119 (24.2)	

	Alcohol Use		Tobacco Use		Illicit Drug Use	
	AOR [95% CI]	p-value	AOR [95% CI]	p-value	AOR [95% CI]	p-value
School performance						
Negative (Ref)						
Positive	0.93 [0.30-2.86]	0.893	0.46 [0.14-1.46]	0.182	0.22 [0.09-0.55]	0.002
Antisocial behavior						
No (Ref)						
Yes	2.54 [2.02-3.19]	<0.001	2.36 [1.92-2.89]	<0.001	2.66 [2.22-3.19]	<0.001
Youth Enrichment activity						
No (Ref)						
Yes	0.71 [0.57-0.89]	0.003	0.92 [0.72-1.19]	0.525	1.04 [0.80-1.36]	0.764
Religious involvement						
Negative (Ref)						
Positive	0.79 [0.64-0.97]	0.026	0.71 [0.56-0.90]	0.006	0.59 [0.45-0.77]	<0.001
Parent involvement						
Negative (Ref)						
Positive	0.47 [0.14-1.55]	0.211	0.63 [0.20-1.99]	0.422	0.55 [0.15-1.95]	0.343
Prevention education						
Negative (Ref)						
Positive	0.95 [0.64-1.42]	0.812	0.73 [0.51-1.04]	0.082	0.70 [0.47-1.04]	0.078

CONCLUSION

- One in three high school students reported alcohol, tobacco or illicit drug use.
- Alcohol was the most used. Antisocial behavior by students was a risk factor for substance use across all categories, while religious involvement served as a protective factor against substance use.
- These findings highlight the need for early and effective interventions to reduce substance use among high school adolescents.

AUTHORS & DISCLOSURES

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a. Dr. Sambamoorthi received funding from the National Institute on Minority Health and Health Disparities through the Texas Center for Health Disparities (NIMHD) 5S21MD012472-05, and the National Institute of Health/Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity Grant # 1OT2OD032581-01. The funding organizations had no role in the design, preparation, review, or approval of this poster.

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