Influence of Peer and Parental Risk Perception on Youth Substance Use

Meredith Cahill[1], Lisa Crabtree[1], Teresa McGeeney[1], Michael Jones[1], Paula Brown[2]

REACH Evaluation, Louisville, KY[1]

Kentucky Department of Behavioral Health, Developmental, and Intellectual Disabilities, Frankfort, KY[2]
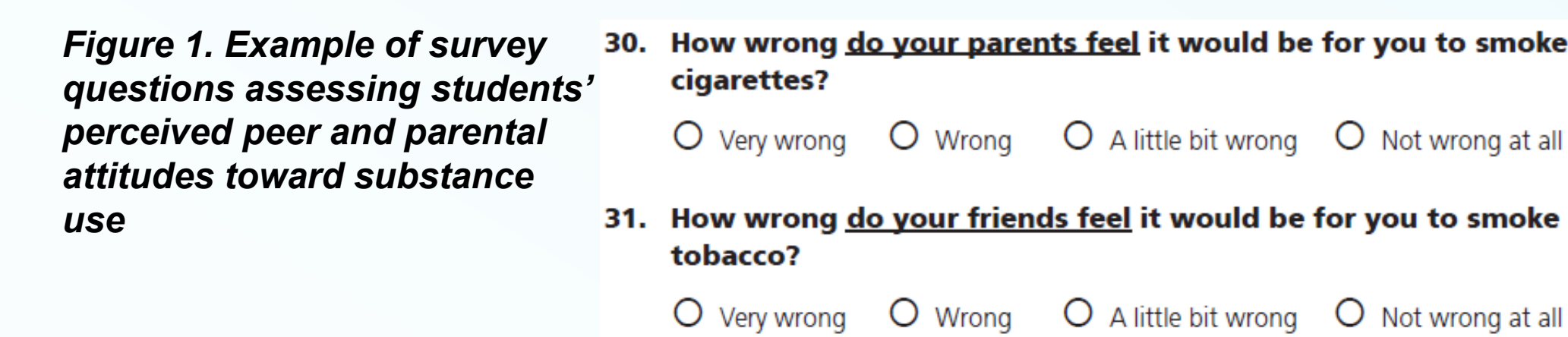
Background

Youth substance use remains a major public health concern shown to increase the risk of both poor physical and behavioral health outcomes among adolescents. Examinations of shared risk and protective factors have identified both parental and peer disapproval as protective against adolescent substance use. However, less is known about the influence of parental disapproval as compared to peer disapproval.

Purpose

To compare the influence of peer and parental disapproval of substance use on youth vaping and cigarette, alcohol, and cannabis use among middle and high school students

Methods

KIP Survey: Each school district in Kentucky was invited to participate in the 2021 KIP Survey. Using a passive consent model, 6th, 8th, 10th, and 12th grade students (n= 93,812) in participating districts were surveyed. Data on past 30-day substance use as well as students' perceived peer and parental attitudes toward substance use were collected (Figure 1). Responses of very wrong or wrong were considered disapproval.

Figure 1. Example of survey questions assessing students' perceived peer and parental attitudes toward substance use

30. **How wrong do your parents feel** it would be for you to smoke cigarettes?

○ Very wrong   ○ Wrong   ○ A little bit wrong   ○ Not wrong at all

31. **How wrong do your friends feel** it would be for you to smoke tobacco?

○ Very wrong   ○ Wrong   ○ A little bit wrong   ○ Not wrong at all

Analysis: Multivariate logistic regression models controlling for race/ethnicity, grade level, and gender identity were utilized to compare the influence of peer versus parental disapproval on substance use. The improvement in log-likelihood attributable to each variable in the model was used to assess each predictor's influence on substance use outcomes.
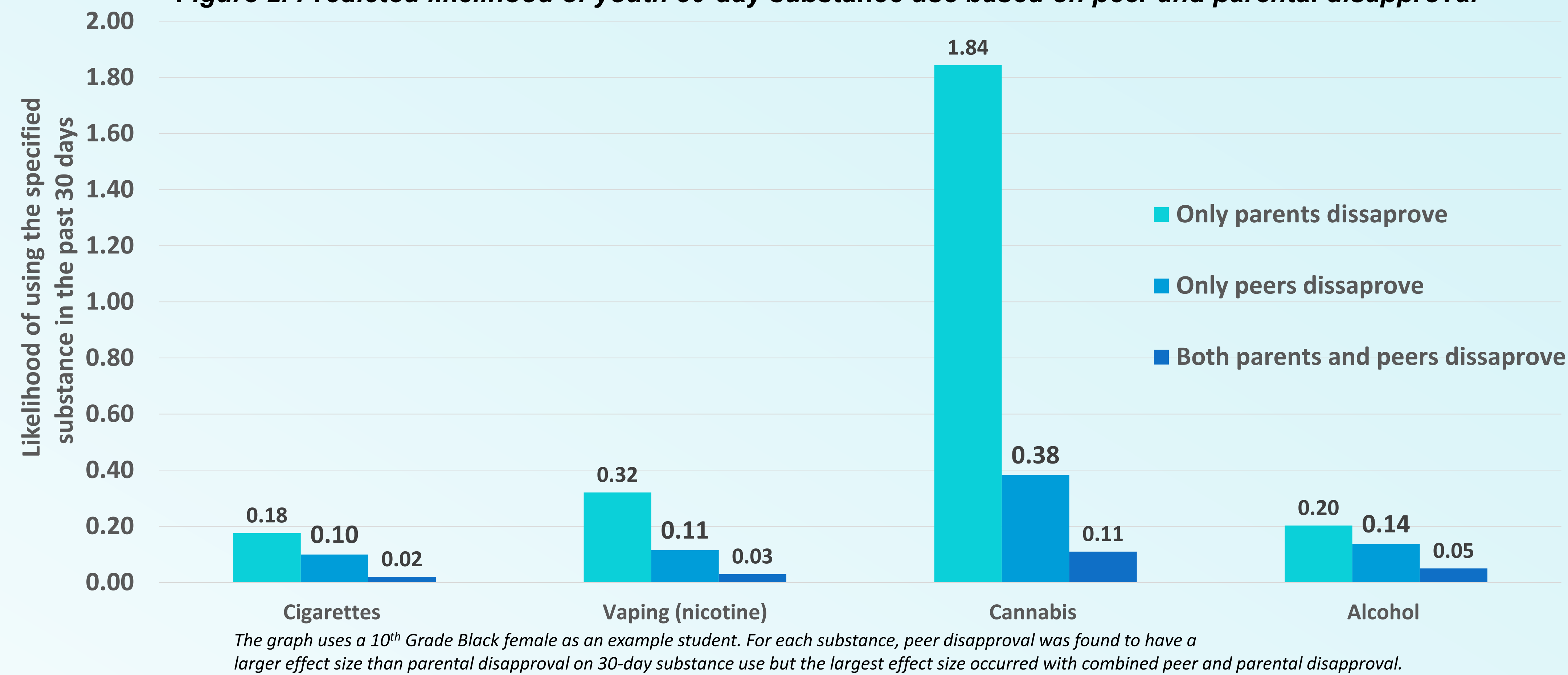
Results

Table 1. Sample Demographics (n= 93,812)

	%		%
Grade		**Race/Ethnicity**	
6th	27.24	Non-Hispanic White	73.71
8th	28.47	Non-Hispanic Black	6.53
10th	25.19	Hispanic	9.12
12th	19.10	Non-Hispanic Asian	1.35
Gender		Non-Hispanic Native Hawaiian/ Pacific Islander	0.16
Female	44.99	Non-Hispanic American Indian/ Alaska Native	1.01
Male	49.25	Non-Hispanic Other	1.92
Questioning/Unsure	1.63	Non-Hispanic Multiracial	6.20
Identity not listed	2.25		
Prefer not to say	1.88		

Table 2. Prevalence of Substance Use Among Students

Past 30 days use of:	%
Cigarettes	3.27
Vape (nicotine)	12.25
Cannabis	5.55
Alcohol	9.71

Results

Figure 2. Predicted likelihood of youth 30-day substance use based on peer and parental disapproval

Likelihood of using the specified substance in the past 30 days

- Only parents dissaprove
- Only peers dissaprove
- Both parents and peers dissaprove

Cigarettes: 0.18, 0.10, 0.02
Vaping (nicotine): 0.32, 0.11, 0.03
Cannabis: 1.84, 0.38, 0.11
Alcohol: 0.20, 0.14, 0.05

The graph uses a 10th Grade Black female as an example student. For each substance, peer disapproval was found to have a larger effect size than parental disapproval on 30-day substance use but the largest effect size occurred with combined peer and parental disapproval.

Tables 3-6. Multivariable logistic regression models predicting 30-day use of the specified substances

30-day cigarette use	Adjusted Odds Ratio (95% CI)	30-day vaping (nicotine)	Adjusted Odds Ratio (95% CI)	30-day cannabis use	Adjusted Odds Ratio (95% CI)	30-day alcohol use	Adjusted Odds Ratio (95% CI)
Race/Ethnicity		**Race/Ethnicity**		**Race/Ethnicity**		**Race/Ethnicity**	
Non-Hispanic White	1.00 (Ref.)	Non-Hispanic White	1.00 (Ref.)	Non-Hispanic White	1.00 (Ref.)	Non-Hispanic White	1.00 (Ref.)
Non-Hispanic Black	0.35 (0.27-0.46)	Non-Hispanic Black	0.83 (0.75-0.92)	Non-Hispanic Black	1.13 (0.99-1.29)	Non-Hispanic Black	0.68 (0.60-0.77)
Hispanic	0.85 (0.72-0.99)	Hispanic	1.08 (0.99-1.18)	Hispanic	1.36 (1.21-1.53)	Hispanic	1.08 (0.99-1.19)
Non-Hispanic Asian	0.40 (0.22-0.74)	Non-Hispanic Asian	0.41 (0.30-0.56)	Non-Hispanic Asian	0.61 (0.40-0.92)	Non-Hispanic Asian	0.57 (0.42-0.76)
Non-Hispanic Native Hawaiian/Pacific Islander	0.80 (0.27-2.35)	Non-Hispanic Native Hawaiian/Pacific Islander	1.50 (0.85-2.64)	Non-Hispanic Native Hawaiian/Pacific Islander	1.90 (0.87-4.17)	Non-Hispanic Native Hawaiian/Pacific Islander	1.00 (0.49-2.01)
Non-Hispanic American Indian/Alaska Native	1.54 (1.08-2.21)	Non-Hispanic American Indian/Alaska Native	1.24 (0.96-1.59)	Non-Hispanic American Indian/Alaska Native	1.46 (1.03-2.07)	Non-Hispanic American Indian/Alaska Native	1.10 (0.82-1.47)
Non-Hispanic Other	0.93 (0.66-1.33)	Non-Hispanic Other	1.08 (0.88-1.32)	Non-Hispanic Other	1.45 (1.10-1.91)	Non-Hispanic Other	0.95 (0.75-1.20)
Non-Hispanic Multiracial	1.04 (0.89-1.22)	Non-Hispanic Multiracial	1.27 (1.16-1.39)	Non-Hispanic Multiracial	1.57 (1.39-1.76)	Non-Hispanic Multiracial	1.29 (1.17-1.43)
Gender		**Gender**		**Gender**		**Gender**	
Female	1.00 (Ref.)	Female	1.00 (Ref.)	Female	1.00 (Ref.)	Female	1.00 (Ref.)
Male	1.12 (1.03-1.22)	Male	0.76 (0.72-0.80)	Male	0.88 (0.82-0.95)	Male	0.76 (0.72-0.80)
Other identity/questioning	2.12 (1.81-2.50)	Other identity/questioning	1.24 (1.11-1.38)	Other identity/questioning	1.09 (0.94-1.26)	Other identity/questioning	1.07 (0.94-1.22)
Prefer not to say	1.26 (0.94-1.69)	Prefer not to say	0.90 (0.75-1.09)	Prefer not to say	0.70 (0.54-0.92)	Prefer not to say	0.93 (0.75-1.15)
Grade		**Grade**		**Grade**		**Grade**	
6th	1.00 (Ref.)	6th	1.00 (Ref.)	6th	1.00 (Ref.)	6th	1.00 (Ref.)
8th	2.01(1.68-2.41)	8th	1.81 (1.65-1.99)	8th	3.24 (2.62-4.01)	8th	2.34 (2.09-2.61)
10th	2.68 (2.26-3.19)	10th	2.50 (2.28-2.74)	10th	4.90 (3.97-6.03)	10th	3.93 (3.53-4.37)
12th	3.18 (2.67-3.79)	12th	3.29 (3.00-3.61)	12th	6.22 (5.05-7.66)	12th	6.31 (5.67-7.02)
Peer Disapproval		**Peer Disapproval**		**Peer Disapproval**		**Peer Disapproval**	
Using cigarettes is a little bit/not wrong at all	1.00 (Ref.)	Vaping nicotine is a little bit/not wrong at all	1.00 (Ref.)	Using cannabis is a little bit/not wrong at all	1.00 (Ref.)	Using alcohol is a little bit/not wrong at all	1.00 (Ref.)
Using cigarettes is very wrong/wrong	0.11 (0.09-0.12)	Vaping nicotine is very wrong/wrong	0.09 (0.09-0.10)	Using cannabis is very wrong/wrong	0.06 (0.06-0.07)	Using alcohol is very wrong/wrong	0.24 (0.23-0.26)
Parental Disapproval		**Parental Disapproval**		**Parental Disapproval**		**Parental Disapproval**	
Using cigarettes is a little bit/not wrong at all	1.00 (Ref.)	Vaping nicotine is a little bit/not wrong at all	1.00 (Ref.)	Using cannabis is a little bit/not wrong at all	1.00 (Ref.)	Using alcohol is a little bit/not wrong at all	1.00 (Ref.)
Using cigarettes is very wrong/wrong	0.19 (0.17-0.21)	Vaping nicotine is very wrong/wrong	0.26 (0.25-0.28)	Using cannabis is very wrong/wrong	0.29 (0.27-0.32)	Using alcohol is very wrong/wrong	0.36 (0.33-0.38)

Four multivariable logistic regression models were run to assess the association between peer and parental disapproval of 30-day substance use, specifically cigarettes, vaping (nicotine), cannabis, and alcohol. For each model, reported substance use was the dichotomized outcome and each model controlled for race/ethnicity, gender, and grade level. All models identified a statistically significant relationship (p<0.001) between reported 30-day substance use and both peer and parental disapproval.

Summary of Findings

➢ Perceived peer and parental disapproval significantly (p<0.001) decrease the likelihood of students reporting 30-day vaping, cigarette, cannabis, and alcohol use.

➢ Perceived peer disapproval of youth substance use had a larger effect size on 30-day substance use than perceived parental disapproval.

➢ A combination of perceived peer and parental disapproval had the largest effect size on 30-day substance use.

Conclusion

Data from a cohort of Kentucky middle and high school students suggests that peer and parental disapproval of substance use are protective factors against youth vaping, cigarette, alcohol, and cannabis use. Between the two protective factors, peer disapproval appears to be more influential, but the presence of both parental and peer disapproval seems to be the most protective against youth 30-day substance use.

These findings highlight the importance of interpersonal factors in the pathway to youth substance use and indicate that peer and parental relationships can be leveraged in youth substance use prevention initiatives. Placing a particular focus on the role of peer relationships and social norms may yield the most benefits. Therefore, the importance of interpersonal relationships as protective factors against youth substance use cannot be overlooked and should be considered in prevention planning.

Kentucky is currently utilizing peer relationships and social norming in youth substance use prevention initiatives through the implementation of school-based prevention programs. Sources of Strength and Too Good for Drugs have been implemented in Kentucky since 2018 and 2019, respectively. Yearly evaluations of these programs have provided promising evidence that the curriculums may increase protective factors that reduce the risk of youth substance misuse.

Acknowledgements