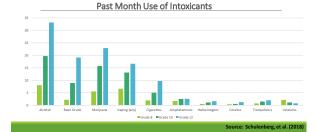
Our Hidden Partners in Prevention: Top Ten Things Parents Need to Know about Alcohol, Marijuana and Other Drugs JASON KILMER UNIVERSITY OF WASHINGTON HEALTH & WELLNESS AND PSYCHIATRY & BEHAVIORAL SCIENCES AMAURA KEMMERER NORTHEASTERN UNIVERSITY OFFICE OF PREVENTION AND EDUCATION AT NORTHEASTERN (OPEN) Importance of parents and prevention Prevention has to be multi-faceted It's not just on us as prevention professionals - parents are really important partners! What they say can.... Support a prevention message Undermine a prevention message Be a prevention/intervention effort in and of itself Top 10 Things Parents Need to Know

Top Things Parents Need to Know	
Top 9 Things Parents Need to Know	
9) If your student	
9) If your student abstains, he or she is not alone!	



ALCOHOL 16.6% of 12th graders report binge drinking within the past 2 weeks -> The rates of alcohol use and binge drinking have stayed relatively consistent. ARRIJUANA 22.9% of 12th graders report using marijuana within the past 30 days. -> The perception of risk of marijuana has decreased over the past 5 years

Source: Schulenberg, et al. (2018)

Substance Use Data from Monitoring the Future Study: College Students



Substance Use Data from Monitoring the Future Study

- Any illicit drug
- 42.4% report past year use
- Marijuana
- 38.3% report past year use
- Any illicit drug other than marijuana
- 18.1% report past year use
- 9.4% Adderall
- 8.6% Amphetamines



Source: Schulenberg, et al. (2018)

8) People tend to perceive that "everybody" drinks, uses marijuana, takes Adderall, etc.

Social norms: Perception versus reality

People are influenced by their subjective interpretation of a situations rather than by the actual situation (Lewin, 1943).

We are influenced by our <u>perception</u> of others' attitudes, behaviors, and expectations rather than by their actual attitudes, behaviors, or expectations.

Our perceptions and interpretations are often inaccurate.

Source: Neighbors & Kilmer (2008)

Norms Clarification	
Examines people's perceptions about: • Acceptability of excessive behavior	
Perceptions about the prevalence of drinking among peers	
Perception about the rates of drinking by peers	
L. W.	
Norm Parcentian	
Norm Perception	
In survey of 5990 participants, 67.4% of students said the hadn't used MJ in the past year Thus, "most" students don't use marijuana	
Only 2% of students got this right!	
 98% of students perceived the typical student to use at least once per year 	
Misperceptions were related to use and consequences	
Kilmer, et al. (2006)	
Domonal marijuana usa	
Personal marijuana use (assessed separately from medical use)	
Any Personal Marijuana, past year	-

Cohort 1 (2014): 43.51%
Cohort 2 (2015): 46.29%
Cohort 3 (2016): 44.76%
No significant overall trend, nor differences across cohorts
No significant differences in frequency of use

Data Source: DBHR/UW Washington Young Adult Health Survey 2016 data report

Personal marijuana use (assessed separately from medical use)	
Perception remains that the typical person uses: Percentage of cohort who perceive typical person to use 1x/year or more: Cohort 1(2014): 97.59%	
Cohort 2 (2015): 97.5% Cohort 3 (2016): 98.39% Percentage of cohort who perceive typical person to use 1x/week or more:	
Cohort 1 (2014): 52.84% Cohort 2 (2015): 47.24% Cohort 3 (2016): 54.37% Data Source: DBHR/UW Washington Young Adult Health Survey 2016 data report	
Past 12 month non-medical use	
"In the past 12 months, on how many days have you used an ADHD prescription stimulant non-medically?" 82.8% 0 times 3.3% 1 time 3.1.% 2 times 1.9% 3 times 1.9% 3 times 1.9% 4 times 1.9% 4 times 1.9% 4 times 1.9% 5.4% of the students with any non-medical use in the past 12 months did it to 4 times	
- 1.3% 4 times - 3.3% 5-10 times - 2.1% 11-20 times - 1.5% 21-40 times - 0.8% 41-300 times Project PHARM	
Data Source: PHARM/NASPA/CPAMM executive summary, 2017 (Kilmer, PI) UNIVERSITY of WASHINGTON	
Normative misperceptions	
 Although most (82.8%) students have not used stimulants for non-medical reasons in the past year, the perception is that non-medical use is much higher 	
• Actual rate: 17.2% • Perceived rate: 30.0% (range is 0% to 98%)	
 21% of students think half or more of the undergrads on their campus use at least once per year 	
Data Source: PHARM/NASPA/CPAMM executive summary, 2017 (Kilmer, PI)	

	0.08				
	0.06	Ĭ		0.053	
,	0.04				Overall
gP/	0.02	0.016			sample
e i	0.00				y=.005
Change in GPA	-0.02				
Ü	-0.04	1	-0.025		-0.025
	-0.06		1		
	-0.08				
		Desisted n=52	Persisted n=150	Abstained n=618	Initiated n=78
			NPS use in	years 2-3	

Arria, A.M., Caldeira, K.M., Vincent, K.B., O'Grady, K.E., Cimini, M.D., Geisner, I.M., Fossos-Wong, N., Kilmer, J.R., Larimer, M.E. (2017). Do college students improve their grades by using prescription stimulants nonmedically? *Addictive Behaviors*, 65, 245-249.

7) Alcohol will not make the shy child more social

Expectancies

What are ways alcohol affects people positively in social situations?

What are ways alcohol affects people in "not-sogood" ways in social situations?

Have you ever seen alcohol do different things for people at different times?

		EXPECT							
		Alcohol	No Alcohol						
	Alcohol								
GET	No Alcohol								





O Alcohol Alco

2017, VOL. 40, NO. 1, 2015-207 https://doi.org/10.1006/02791073.2017.1004009	Safe-Liferonines
	A Short for spicion.
Placebo Effects of Edible Cannabis: Reported Intoxication Effect Delay	s at a 30-Minute
Mallory J. E. Loffin, Ph.D. ^o , Mitch Earleywine, Ph.D. ^o , Stacey Farmer, M.A. ^o , Melissa Slavin, M and Marcel Bonn-Miller, Ph.D. ^o	I.A.', Rachel Luba, B.S.'
*Felton, National Center for PTSD Training and Discentination Division, VA Pala Alto Health Care System, Men Department of Psychology, University at Albory SARY, Albare, NY, USA, *Godulate Student, Department of Psyc SAY, Albare, NY, St. Adjunct. Assistant Professor, Department of Psychiatry, Pretinus School of Medicine, Philadelphia, PA, USA	faology, University at Albany
ARSMACT Provious research fue demonstrated the ability of non-active smaked cannobis cigarettes to induse subjective effects of intervaction (a.e. placebo effects). No stables have been conduced to their whether orbible forms of cannobis, which are expeciated with a significant delay in sever of	ARTIQUE MISTORY Restrict 12 Servery 2017 Restrict 16 April 2017 Accepted 6 May 2017
effect, an delet in relative spicial ordinal in the protest made, 20 periologisms were tidel that they assisted seather as collected services and the filter including a large date of the observables and PREL described seathers and the protesting a large date of the observables and observables are considered and observables and observables and observables and observables and observables and observables are considered and observables and observables and observables and observables are considered and observables and observables are considered and observables and observables are considered and observables are considered and observables are considered and observables and observables are considered and observables are consi	RETWORDS Caroline, edition, especialney, meripana, planter

Loflin, et al., 2017

Loflin, et al. (2017)

Asked participants to refrain at least 8 hours before study

Told to plan for a variable end (1.5-6 hours depending on dose they would receive)

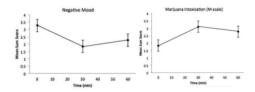
Told they would be in one of three rooms (no dose, low THC, high THC) $\,$

Cubicles (no interaction), and had to rate music and comedy clips, color designs, and compute math problems

Loflin, et al. (2017)

Used Hemp Pops Hemp seed oil (no active elements of THC or CBD), glucose syrup, citric acid, sugar, natural flavors, and colors #2 and #5





Placebo effects need to be explored

- For example...

 Sativa typically described as uplifting and energetic
- Indica typically described as relaxing and calming

"We would all prefer simple nostrums to explain complex systems, but this is futile and even potentially dangerous in the context of a psychoactive drug such as cannabis" (Piomelli & Russo, 2016, Cannabis and Cannabinoid Research)

Differences in observed effects could be due to other content (which is rarely assayed) or what is reported to potential consumers

6) "One drink" could mean a lot of different things to someone not considering a "standard drink"

A Standard Drink is...

...a drink containing ½ ounce of ethyl alcohol



What Is A Standard Drink?

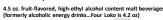


10 oz. microbrew



8 oz. ice beer

6 oz. ice malt liquor





4 oz. wine

1.25 oz. 80 proof hard alcohol

1 oz. 100 proof hard alcohol



5)The impact of substar	nce use on academic	
success is well-establish	ed	
America's Dropout Crisis:	"Of all the problems that	
The Unrecognized Connection To Adolescent Substance Use	contribute to dropping out, substance use is one of the easiest	
There is no problem so had that alcohol and drugs will not make it worse."	to identify and one of the most easily stopped by interventions including treatment."	
Robert L. DuPwick, M.D.: Kimborly M. Colderes, M.S.: Heles S. DuPwick, M.R.A. **	"Research evidence shows that when adolescents stop substance	
Kathryn B. Vincent, M.A. ² Carimus L. Shea, M.A. ³ Amelia M. Arria, Ph.D. ^{2,5}	abuse, academic performance improves."	
March 2013		
Institute for Roberton and Rodill, No. (2005), 4514 Executive Studieves, Sucketille, MR. (2005). *Control was Young adults Haddin and Development (CIADIA) Unionsity of Maryland School of Public Health, 1142 School of Public Health Building, Gillege Park, MD 20742.	http://www.cls.umd.edu/docs/AmerDropoutCrisis.pdf	
America's Dropout Crisis:	Substance using students are at increased risk for academic	
America's Dropout Crisis: The Unrecognized Connection To Adolescent Substance Use	increased risk for academic failure, including drop out	
The Unrecognized Connection	increased risk for academic	
The Unrecognized Connection To Adolescent Substance Use There is no problem so bod that alcohol and drugs will not make it source.* Balant L. Briton, M.D.: Black S. Delman, M.D.: Black S. Delman, M.D.: Black S. Delman, M.D.:	increased risk for academic failure, including drop out Marijuana has stronger negative relationship to GPA and other outcomes and risk for dropout than alcohol use	
The Unrecognized Connection To Adolescent Substance Use "There is no problem so bod that absolut and drugs will not make it worse." Robert Defined, M.D. Robert College, M.D.	increased risk for academic failure, including drop out Marijuana has stronger negative relationship to GPA and other outcomes and risk for dropout than alcohol use "The more severe the substance use, the more likely the impact on academic performance and	
The Unrecognized Connection To Adolescent Substance Use "There is no problem so bod that absolut and drugs will not make it worm." Rainers, Defens, M.D. Rain	increased risk for academic failure, including drop out Marijuana has stronger negative relationship to GPA and other outcomes and risk for dropout than alcohol use "The more severe the substance use, the more likely the impact	

Four recommendations from Dupont, et al (2013)

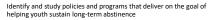
Place more attention on at-risk students.

- Act early to identify and address variety of problem behaviors:
- Truancy

 Drug and alcohol use
- Delinquency

 Academic "disengagement"

Focus resources on empowering parents



Develop and evaluate new personalized approaches to intervening with students at risk for dropout.

DuPont, R. L., Caldeira, K. M., DuPont, H. S., Vincent, K.B., Shea, C. L., & Arria, A. M. (2013). Amer



Relationship Between Cannabis Use
and Academic Success

- More frequent marijuana use is associate with more discontinuous enrollment, skipping more classes, and lower GPAs (Arria, et al., 2013, 2015)
- Any marijuana use is associated with lower GPA, and decreasing and frequent marijuana use over time is associated with less current enrollment and being less likely to graduate on time (Sureken, et al.



Relationship Between Cannabis Use, **Alcohol Use, and Academic Success**

- Alcohol and marijuana are both associated with lower GPA; when entered in same regression, effects of alcohol became non-significant (Bolin, Pate,
- Students using both marijuana and alcohol at moderate to high levels have significantly lower GPAs over two years (Meda, et al., 2017)
 - Students who moderate or curtail substance use improved GPA (Meda, et al., 2017)

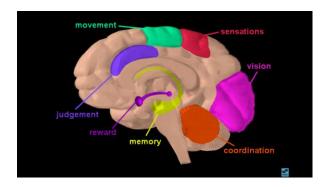
4) Marijuana in 2018 is a very different substance than marijuana in 2008, 1998, 1988, or 1978

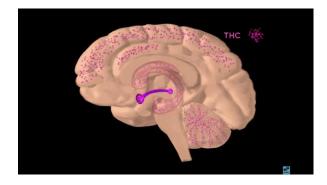


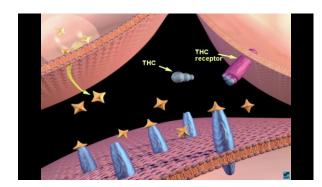


Anandamide is an endogenous cannabinoid that has an impact on the brain on pleasure, memory, thinking, concentration, movement, coordination, and perception of senses and time.

Source: NIDA, 2017







ElSohly, M.A., Mehmedic, Z., Foster, S., Gon, C., Chandra, S., & Church, J.C. (2016). Changes in cannabis potency over the last 2 decades (1995-2014)—Analysis of current data in the United States. *Biol Psychiatry*, *79*, 613-619.

Archival Report



Changes in Cannabis Potency Over the Last 2 Decades (1995–2014): Analysis of Current Data in the United States

Mahmoud A. ElSohly, Zlatko Mahmedic, Susan Foster, Chandrani Gon, Suman Chandra, James C. Church

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ca	Sohly, N nnabis p nited Sta	ooten	о у	ver t	he la	ast to	NO C	leca	des											

Washington State Impact Report





Average potency (nation) = 13.18% Average potency (Seattle) = 21.62%

Concentrates average potency (nation) = 55.85% Concentrates average potency (Seattle) = 71.71%

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2)\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
 We have to continue to emphasize the importance of not driving after substance use 	
importance of flot arriving arter substance use	
	-
Time to get back to .000%	
BAC = .08%? 5 HOURS (080%064%043%032%016%000%)	
DAG = 469/2 40 HOURS	
(160% 144% 128% 112% 096% 080% 064% 048% 023% 016% 000%) BAC = .24%? 15 HOURS	
(_3.00%226%308%152%156%160 %144%128%112%096%080%0 64%048%032%016%000%_)	

Effects on the brain	l driving a	and du	ration o	of effects		_				
				/ Circus) 					
for those under 21)	DUI at 5 ng THC/ml (of blood for tho	se over 21 (any p	positive value		_				
Why 5 ng? Similariti	es in impairment to	.08% for alcoho	d			_				
 How long does it take 	e to drop below 5 ng	g?			1	_				
 Grotenhermen, et al THC/ml among 70 kg 	., (2007) suggest it to men	akes 3 hours for	THC levels to dr	op to 4.9 ng	K	_				
 From a public health use before driving 	standpoint, Hall (20	013)recommend	ls waiting up to 5	hours after						
New article encoura	ges waiting at least 6	5 hours after use	(Fischer, et al.,	2017)		_				
						_				
Deivingerwich	in 2 have	f				_				
Driving with	nin 3 hou	rs of us	se			_				
Driving after ma	rijuana use ays, how many tim	nes did you dri	ve a car or oth	er vehicle within	three	-				
Driving after ma	rijuana use nys, how many tim nabis (e.g., marijua	nes did you dri ana, hashish, e	ve a car or oth dibles)?"		three	- -				
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Driving after mai "During the past 30 do hours after using cannot Never 1 time	rijuana use nys, how many tim nabis (e.g., marijua 2014 50.59% 14.13%	nes did you dri ana, hashish, e 2015 55.29% 13.13%	ve a car or other dibles)?" 2016 58.19% 12.50%	2017 58.56% 12.85%	three	- - - -				
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AMONG 21-25 YEAR OLDS ONLY
"During the past 30 days, how many times did you drive a car or other vehicle within three hours after using cannabis (e.g., marijuana, hashish, edibles)?"

	2014	2015	2016	2017
Never	50.79%	59.61%	57.99%	61.00%
1 time	13.90%	10.26%	11.60%	11.81%
2-3 times	13.18%	15.08%	11.30%	13.02%
4-5 times	7.11%	3.41%	2.28%	4.68%
6 or more times	14.86%	15.78%	15.89%	11.03%

For those 21+, there are declines in driving after marijuana use between cohort 4 and cohort 1 (p<.01), as well as a significant linear trend (p<.01).

Source: Young Adult Health Survey, 2017 data report

	he Seattle Times Marijuar TRANSPORTATION CRIME LOCAL POLITICS EDUC			
Crime Data	Local News Marijuana			
More	pot use found in fatal o	crashes, data says		
Originally publish	ed August 19, 2015 at 8:03 pm Updated August 20, 2015 at 3:45 pm			
	ise appears to have increased as a factor in dead Washington.	lly crashes		
_	By Bob Young South Times staff reporter			
0	Marijuana use appears to have increased as a in Washington.	a factor in deadly crashes last year		
Ö	New data from the Washington Traffic Safety drivers involved in fatal crashes with THC in 2013 to 75 this past year. About half those 75	their body increased from 38 in drivers had active THC — the main		
	psychoactive chemical in pot — above the le- intoxication.	vel that legally determines		

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Drugged driving eclipses in tests of motorists killed	
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Released 4/26/17: http://www.ghsa.org/resources/drugged-driving-2

Especially for college bound students, changing environments if they've been drinking at home, can be life-threatening

Tolerance

Secretary State Secretary

Completed by the format for being an investors.

Applying Laboratory Research: Drug Anticipation and the Treatment of Drug Addiction Stepart Stepd and Bachan M. C. Ramos Mothaw Vicensity

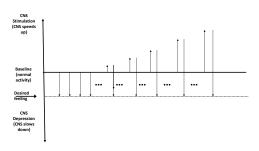
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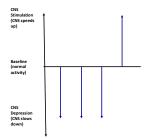
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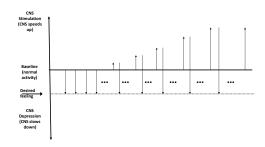




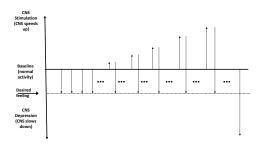














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(Or	אכות	ering	CLIAC
COI	131U	CHILIS	cues

Even taste can be a cue



Siegel (2011) noted that college students who consume alcohol in the presence of usual taste cues (e.g., a beer flavored beverage) display greater tolerance to intoxicating effects than when consumed in a novel blue, peppermint-flavored beverage of the same strength.

Conclusion

"The situational specificity of tolerance"

olf alcohol is presented "in a manner divorced from the usual alcohol-associated stimuli, the effects of the alcohol are enhanced (Siegel, 2011, p. 358)."

Implications

Consider high-risk events that can be associated with changes in cues:

- Spring Break
 21st birthdays

- Students studying abroad
 Start of the school year

As a field, we still need to research ways to incorporate this information into prevention/intervention efforts, both for those who make the choice to drink and for those who may be bystanders intervening on someone's behalf

1) The influence of parents is extraordinary	
1) The initialities of parents is extraordinary	
Parents as Partners in Prevention and Wellness	
Do they really listen to me?	
What if they blow me off?	
I am not sure what to say or do.	
Parents as Partners in Prevention and	
Wellness	
Although peer behavior is	
Although peer behavior is found to be strongly correlated with alcohol consumption	
Perents also have an impact on the behaviors of their shill-be	
Parents also have an impact on the behaviors of their children	
Later & Cell (2011)	

Parental Monitoring

Extent to which parents actively try to know about their students whereabouts and social connections



High parental monitoring has been linked to less alcohol use in adolescent and college student populations

SAMHSA Survey on Drug Use and Health (201 Wood & Laird (201

Parental Permissiveness

Parental drinking permissiveness = the degree to which parents are lenient regarding alcohol use

Low parental drinking permissiveness is associated with less risky drinking



Wood & Laird (20

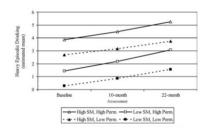
Examining role of parents and peers

Fairlie, Wood, & Laird (2012) collected data during summer before starting college, 10 month follow-up (spring semester of first year), and 22 month follow-up (spring semester of second year)

Looked at social modeling (e.g., # of close friends who drink heavily, perceived friend approval of drinking and getting drunk) and parental permissiveness

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Prospective Protective Effect of Pan Akodol In	ents on Poor Influences and Crillege solveness
Anna W. Durles and Mark St. Wasel. Street, of State State.	Ballari D. Copil
The amounts of the continues of the cont	The control of the co

Heavy episodic drinking as a function of high or low social modeling + high or low parental permissiveness



Pre College Discussion About Drinking

Teens who talked with their parents about alcohol before they began their first year of college:

- more likely to fall into a nondrinking or light-drinking category
- or to transition out of a heavydrinking group if they were already heavy drinkers

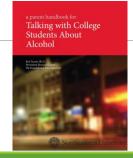


Parental Influence Extends into Early Adulthood

Pre College discussion + booster during first semester

"Parents who maintain effective communication with their teen, and through this communication, reinforce expectations regarding alcohol use can provide protection during this vulnerable transition, when most young people increase their drinking behaviors."



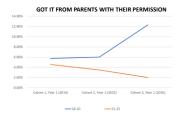




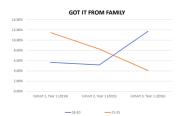
Parent Handbook for Talking with Teens About Alcohol Madd.org/powerofparents

http://learnabouttmarijuanawa.org/parents.htm Learn About Marijuana ADAI ALGORA BEGARANGE Science-based information for the public Term facilitées from the public Marijuana Resources for Parents Marijuana Resources for Parents The 2014 sudous Marijuana Resources for Parents The 2014 sudous Marijuana Resources for Parents The post set of the 10 parents set of the 10 parent discussed professional p





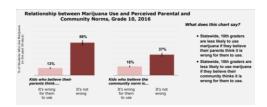
Data Source: DBHR/UW Washington Young Adult Health Survey 2016 data repo



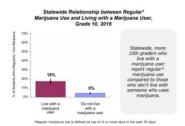
Data Source: DBHR/UW Washington Young Adult Health Survey 2016 data rep

Where 18-20 year olds get marijuana

WHERE DO PEOPLE GET MA	ARIJUANA, 1	8-20 year olds			
	2014	2015	2016	2017	
From friends	72.86%	76.24%	69.68%	77.40%	
Gave money to someone	23.29%	26.47%	34.72%	41.45%	
Got it from someone					
w/medical mj. card	17.60%	14.12%	4.30%	5.24%	
Got it from a med. disp.	13.65%	18.99%	5.58%	4.72%	
Got it at a party	22.99%	22.14%	23.08%	24.92%	
Got it from family	5.65%	5.18%	11.75%	9.75%	
Got it some other way	11.64%	4.12%	6.12%	9.02%	
Bought from retail store	0.99%	4.58%	1.73%	1.92%	
Got it from parents					
with permission	5.75%	6.02%	12.33%	10.44%	
Grew it themselves	1.91%	1.15%	1.65%	0.23%	
Stole it from store/disp.	0.00%	0.00%	0.00%	0.00%	



Data Source: Washington Healthy Youth Survey 2016 da



Data Source: Washington Healthy Youth Survey 2016 data

WRAPPING UP	
Final thoughts:	
 Offer parent presentations/programs/resources for information 	
 Consider options for skill building content that provides dialogue/talking points 	
•Make sure parents understand how influential they are	
•Partner with local schools/coalitions	
•Get people onboard at universities that parents have to be a part of	
the equation	
	-
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WRAPPING UP	
Final thoughts:	
•Start talking to parents-to-be	
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Contents litts available at follower/lived	
Neurotoxicology and Teratology	
ELSEVIER Journal homepage: www.ulsevier.com/locatenessiers Full length article	
Prevalence and associated birth outcomes of co-use of Cannabis and tobacco cigarettes during pregnancy	
Victoria H. Coleman-Cowger**, Emmanuel A. Oza*, Erica N. Peters*, Katrina Mark*	
* Assado Menarial Institus, Ciristo States * Department of Oktorios, Openining and Reproduction Sciences, Observaby of Maryland School of Worksian, Dated States	

Coleman-Cowger, et al. (2018)	
Significant differences in:	
head circumference (marker of brain development, and smaller head circumference associated with cognitive	
impairment) • Co-use group had a 5.7 times greater odds of having a small head circumference than no-use group	
2) occurrence of birth defects	
 Co-use group had a 3 times greater odds of having birth defects than no-use group 	
stillbirth/miscarriage Cannabis only group had 12 times greater odds of a stillbirth or miscarriage compared to the no-use group	
miscarriage compared to the no-use group	
WRAPPING UP	
WWW THIS ST	
Final thoughts:	
*Start talking to parents-to-be	
 If you're collecting data on norms related to parents, look at ways to use those norms 	
doc those norms	
Carter, et al., (2014)	
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ADDRESS.NT HEALTH ELSEVIER www.pitanine.org	
Ostgoal article Social Norms and Risk Perception: Predictors of Distracted Driving Behavior Among Novice Adolescent Drivers	
Farrick M. Carter, M.D. **An.*, C. Raymond Bingham, Ph.D. **Col.*, Jennifer S. Zakrajovk, M.S., M.P.H.*, Juan T. Shope, Ph.D.**An. Tina B. Sayor, Ph.D.*. *Tomorous difficults with control his May represent the state of the st	
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Carter	et al., (2014)	
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 91.8% of adolese 	ds with parents-teens (16-18 years of age) cents regularly engaged in distracted driving behavior	
 Adolescents perceived their parents and their peers engaged in distracted driving behavior more frequently than themselves 		
distracted drivin	model explaining over 40% of the variance in teen g, significant predictors were:	
	cted driving behavior	
Perceived p	arent distracted driving behavior eer distracted driving behavior	
Parent a	nd peer approval were not predictive	
Merrik	hpour & Donmez (2017)	
	Accident Analysis and Prevention 104 (2017) 195-194	
	Contents lists available at ScienceDirect	
FISEVIER	Accident Analysis and Prevention journal homepage: www.elsevier.com/locate/asp	
Full length article	position in the party of the control	
Designing feedback to approach	mitigate teen distracted driving: A social norms	
Maryam Merrikhpour, Birse		
	and Industrial Engineering, 5 King's College Read, Terrons, OK, MSS 2016, Canada	
ARTICLEINFO Experied: Distracted driving	A B S T R A C T Objective: The purpose of this resourch is to investigate trees, persived social norms and whether providing specurity information can return distracted deriving behavior amount them.	
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Merrikh	pour & Donmez (2017)	
Utilized 40 parer	nt-teen dvads	
 17 to 19 years of 		
driving feedback		
5 drives on the s Four conditions		
normative in	: (Post-drive feedback incorporating descriptive Iformationassignment to this condition was not	
	edback without normative information	
 Real-time fe No feedback 	edback (alarm if glance exceeded 2 seconds)	

Merrikhpour & Donmez (2017)

- 6.5 minute drive on a 2-lane rural road
- 5 oncoming cars
- Instructed to follow a lead vehicle and maintain a speed of 50 mph
 8 times, the lead vehicle braked
- Microsoft Surface distracted them
- in the simulator
 Participants had to scroll through
 10 phrases and find a phrase that matched "Discover Project Missions"

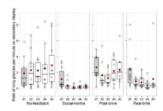


Merrikhpour & Donmez (2017)



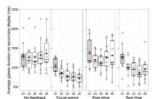
Merrikhpour & Donmez (2017)

Social norms and real time feedback impacted behavior, "with social norms feedback outperforming realtime feedback as implemented in this study (192)"



Merrikhpour & Donmez (2017)

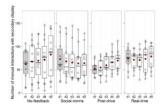
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Social norms and real time feedback impacted behavior, "with social norms feedback outperforming realtime feedback as implemented in this

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WRAPPING UP

Final thoughts:

Start talking to parents-to-be

[•]If you're collecting data on norms related to parents, look at ways to use those norms

^{*}Look for ways to promote parent discussions with their children (and that has the added bonus of prevention for them)



WRAPPING UP

Final thoughts:

- •Start talking to parents-to-be
- •If you're collecting data on norms related to parents, look at ways to use those norms
- $^{\circ}\text{Look}$ for ways to promote parent discussions with their children (and that has the added bonus of prevention for them)
- $\,^{\circ}$ If you have promising approaches/practices, share these at events like this conference we're all in this together

Thank you!

Special thanks to Tracy Flinn

Jason Kilmer – jkilmer@uw.edu Amaura Kemmerer – a.kemmerer@northeastern.edu