

# Effect of Gist Risk Messages on Parents' Decisions to Retain Leftover Prescription Opioids

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# Opioid-Related Adverse Outcomes in Children



**338,476** opioid poisonings in children  
(*National Poison Data; '05 – '17*)

**9000** opioid-related deaths in children  
(*CDC 2000-2016*)

1 in 2611 Opioid Prescriptions to Children  
→ Emergency room visit,  
hospital admission  
or death

Bhatia D. *Pediatrics* 2020;145:e20192470  
Gaither JR. *Jama Netw Open* 2018;1:e186558  
Chung CP. *Pediatrics* 2018;142:e20172156

# Opioid-Related Adverse Outcomes in Children

**1 in 10** adolescents misused a prescription opioid  
*(2017 Youth Risk Behavior Survey)*



Toce MS. *Jama Ped* 2020; in press

# Opioid Prescribing among Youth



- Opioids - a mainstay for treating severe pain
  - 2.5 million annual exposures in children<sup>1</sup>
  - 15% of children annually receive  $\geq 1$  opioid rx<sup>23</sup>
    - 1 in 5 adolescents report use (12-17 yrs)<sup>4</sup>
      - Nearly 1/3 of young adults report use (18-25 yrs)<sup>4</sup>

<sup>1</sup>Groenewald CB et al. Pain 2016;157:1021

<sup>2</sup>Chung CP. Pediatrics 2018;e20172156

<sup>3</sup>Hudgins JD. Pediatrics 2019;143:e20181578

<sup>4</sup>Hudgins JD. PlosOne 2019;16:e1002922

# Parent Uncertainty about Risks

... and the risk-reduction actions



*2/3rds of parents keep left-over opioids*



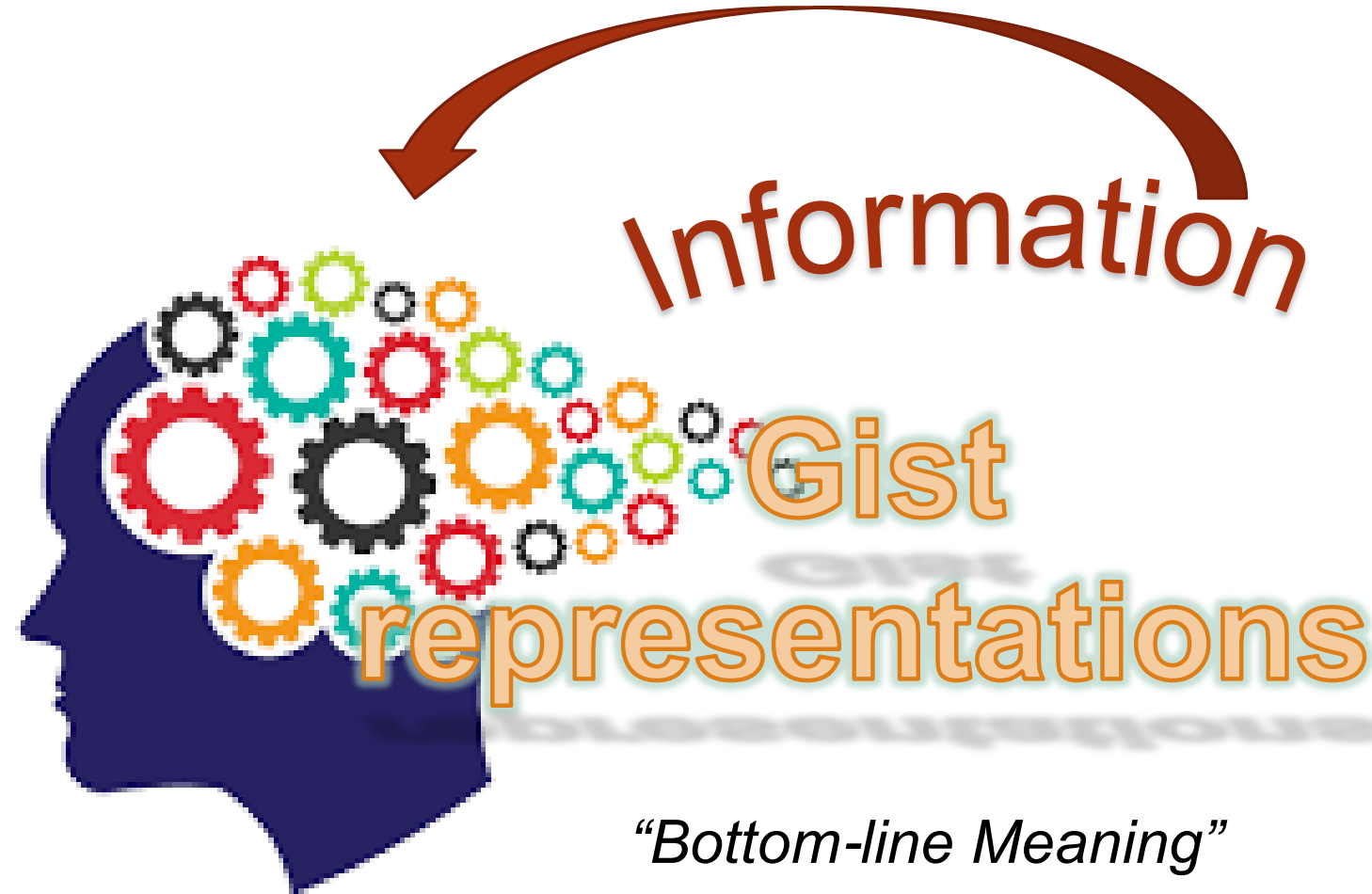


# Study Purpose

*Does an interactive Scenario-Tailored Opioid Messaging Program (STOMP):*

- 1) Enhance opioid risk perceptions and
- 2) Improve parents' disposal intentions and behavior

# Intervention: Gist Risk Messaging



# Risky Behavior Associated with Understanding

Verbatim thinking promotes risk-taking when risk rates are low  
(e.g., *0.88/100,000 children die from opioid exposure*)

Gist:  
My child could die  
from left-over opioids!



Global gist may be protective!



# Intervention:

*Scenario*

*Tailored feedback*

*Interactive decision-making*



*Gist Risk messages: Left-over opioid medicines pose these dangers to children and teens. . .*

*Guidance:*

*Getting rid of left-over medicines is the only way to ensure that they pose no risk to your children.*



# Sample



- ▶ Parents (n=648)
  - ▶ Children aged 5-17 years
  - ▶ Undergo ambulatory or short-stay surgery
  - ▶ Scheduled to get an opioid prescription (short-term use)

# Methods

## Measures

Baseline  
Risk Perceptions:

- Child misuse risk
- Keep/share risk
- Concern about access

Past Rx opioid behavior:  
Used, kept, misused

STOMP  
Intervention  
n=325

Control  
Information  
n=323

Risk Perceptions  
(Days 3 & 14)

Scenario-Based  
Disposal Intentions  
*(Plan to dispose;  
Days 3 & 14)*

Final Retention  
Decision  
*(Kept opioid Day 14)*



# Results – Risk Perceptions

Riskiness of keeping/sharing opioids (among adults)

&

Riskiness of child misuse (using/sharing without supervision)

- Increased over time for STOMP group ( $p < .001$ ) but not for controls

Concern/worry about child access to leftover medications

- *Decreased* over time for parents in both groups ( $p < .001$ )

# Disposal Intentions

Factor	AdjOR	95% CI	p Value
STOMP (vs. Control)	1.36	1.05, 1.75	.020
Risk Perceptions			
Keep/Share Opioid	1.13	1.04, 1.23	<.003
Child Misuse	1.22	1.12, 1.33	<.001
Access Concern	0.97	0.90, 1.04	.370
Parent Female	1.59	1.17, 2.17	.003
Parent White (v. non-white)	1.47	1.04, 2.06	.028
Health Literacy	1.24	1.12, 1.37	<.001
Opioid in Home	0.45	0.34, 0.61	<.001
Past Opioid Misuse	0.49	0.33, 0.74	.001

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Past Opioid Misuse	0.49	0.33, 0.74	.001

# Retention of Leftover Opioid

Factor	Adj.OR	95% CI	P Value
<b>STOMP</b>	<b>0.54</b>	<b>0.35, 0.82</b>	<b>.004</b>
<b>Risk Perceptions</b>			
<b>Keep/Share Opioid</b>	<b>0.84</b>	<b>0.75, 0.94</b>	<b>.003</b>
<b>Child Misuse</b>	<b>0.73</b>	<b>0.65, 0.82</b>	<b>&lt;.001</b>
<b>Access Concern</b>	<b>1.06</b>	<b>0.95, 1.18</b>	<b>.307</b>
<b>Parent Female</b>	1.66	0.99, 2.77	.057
<b>Health Literacy</b>	1.23	1.04, 1.46	.017
<b>Past Opioid Misuse</b>	<b>2.59</b>	<b>1.46, 4.61</b>	<b>.001</b>
<b>Disposal Intention</b>	0.93	0.86, 1.09	<.001

# Conclusion

- Scenario-focused education about the bottom-line gist of the risks of left-over opioids enhanced parents' risk perceptions and decreased their retention of leftovers
- Past behaviors (keeping or misusing opioids) were associated with higher retention
  - Lower perceived susceptibility – since “*nothing bad happened before*”
- Widespread implementation of similar interventions could effectively remove 6 to 12 million left-over opioid doses annually that may otherwise be retained
- Adapting this intervention may have the potential to reduce diversion and misuse of other controlled medications among children and teens





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