Alcohol references on social media: New challenges and new opportunities

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Outline

• Alcohol displays on Facebook
  – Patterns and predictors
  – Influence

• Opportunities
Alcohol behaviors

• Often initiate or escalate in transition to college
  – 20% of students who did not drink heavily in high school initiate in college
  – Other students transition from experimentation to frequent use
  – Associated with morbidity and mortality
Alcohol behaviors

• Frequently displayed on Facebook
  – Up to 83% of college students’ profiles feature displayed alcohol use
  – Displays likely to have broad reach
    • More than 90% of students have Facebook
    • Most use it every day
    • Median number of Facebook friends ~ 300
First-year college students

• Seeking a new peer group
  – Likely will use Facebook
  – If displayed references to alcohol
    • Implications for attitudes, intentions, behaviors?
    • Impact social norms and expectations?
Influences on alcohol

• Peers
  – Both social network and close peers influence alcohol use

• Media
  – Numerous studies linking exposure to alcohol content in movies and TV and initiation of alcohol use
Social media combines peer and media influences

• Social media allows
  – Construction and display of online identity
  – Communication with peers
  – Creation of a social network
Social media combines peer and media influences

• Previous studies have shown
  – Younger teens view alcohol references on social networking sites as influential and believable (Moreno et al, 2009)
  – Adolescent who view alcohol content on profiles are more likely to perceive that alcohol is normative and report increased interest in the behavior (Litt et al, 2011)
Two studies

1. Emergence of displayed alcohol references on Facebook over the first year of college
2. Influence of displayed alcohol references on college students’ intentions to drink alcohol
Study 1: Emergence of displayed alcohol references on first-year college students’ Facebook profiles

Megan Moreno, Brad Kerr, Lauren Kacvinsky, Megan Pumper, Chong Zhang, Jens Eickhoff
Purpose

• To investigate the emergence of displayed alcohol references on Facebook over the first year of college.
  – Understand predictors in emergence
    • University context
    • Facebook use
    • Time
  – Understand patterns of display over time
Methods

• Setting: 2 universities
  – A: Midwest
  – B: West
• Subjects: incoming freshmen
• Randomly selected from registrar lists
• Inclusion
  – Age 17-19 years
  – Full-time students
Methods

• Recruited via email, calls, FB messages
• Consented via phone
• FB friended
Interview

- Demographic data
- Baseline assessment of lifetime use of alcohol
Codebook

• Existing codebook used in previous studies to evaluate alcohol displays

• Each profile categorized:
  – Non-Displayers
  – Alcohol Displayers
  – Intoxication/Problem Drinking displayers
Codebook

• Alcohol Displayers: references to attitudes, intentions or behaviors regarding alcohol
  – Examples
    • “My favorite beer is Bud Light”
    • Photo of profile owner with beer can
    • Joined group that relates to alcohol
Codebook

• Intoxication/Problem Drinking displayers
  – References to intoxication
    • “So drunk last night, can’t make it to class today”
  – References to CRAFFT criteria
    • “Can someone tell me how I got home last night?”
    • “Whoa, hung over today, should NOT have driven home I think.”
    • “Terrible day in stats class, sitting in my apartment with a Crown Royal to ease the pain.”
Coding procedure

• Baseline evaluation and then every four weeks for academic year
• Evaluated status updates, photographs, likes/interests, groups
Coding procedure

• 7 trained coders, minimum training 3 months, interrater reliability using 20% subsample of profiles
  – 0.82 for presence/absence of alcohol on profiles
Analysis

• Predictors of emergence of displayed alcohol content
  – Logistic regression
  – Cox proportional hazard analysis
Analysis

• Patterns in displayed references over time
  – Multi-state Markov model
  – 3 states of the model: Non-Displayer, Alcohol Displayer, I/PD displayer
  – Model assumes transition is unidirectional
  – Each coding considered an independent time period
Results

• 338 participants
  – 56.1% Female
  – 74.8% Caucasian
  – 58.8% University A
Facebook baseline alcohol displays

• 68 profiles displayed alcohol references
  – 46 Alcohol Displayers
  – 22 I/PD Displayers
Facebook emergent alcohol displays

- Among the 46 Alcohol Displayers, 35 escalated to I/PD displays
- 135 profiles newly displayed alcohol references
  - 105 Alcohol Displayers
  - 30 I/PD Displayers
Facebook alcohol displays

• Status updates
  – “Throwin’ a few Buds back with my buds tonight.”
  – “Hung over….”
Facebook alcohol displays
Facebook alcohol displays

- Group membership
  - “SHOT SHOT SHOT SHOT”
  - “Wisconsin: Out-drinking your state since 1848”
Predictors of displaying alcohol references during the first year of college

- **University**: HR=0.47, 95% CI: 0.28-0.77, p=0.003

- **Number of Facebook friends**: HR=1.19, 95% CI: 1.09-1.28, p<0.001) for every 100 more friends

- **Total average monthly status updates**: HR=1.03, 95% CI: 1.002-1.05 , p=0.033
Facebook alcohol display: Patterns over time

• Markov models
  – Often a progression from Non-Displayer to Alcohol Displayer to I/PD Displayer
Estimated transition probabilities

Non Displayer → 0.05 → ETOH Displayer

0.015

I/PD Displayer → 0.05

0.05
Probability of transition between states

- Males at smaller risk for transition from Alcohol Display to I/PD Display (HR=0.45, 95% CI: 0.23-0.86)
- Participants with >500 Facebook friends at baseline at higher risk compared to <500 (HR=2.8, 95%CI: 1.89-4.18)
- University A at greater risk (HR=2.89, 95% CI: 1.75-4.75) compared to University B
Conclusion: Displays may be influential

- Displays provide rich and contextual data
  - Multimedia formats
- Content is created by peers
- Social media combines influence of peers and media
Conclusion: University differences

• Differences in university
  – Universities have different drinking rates and social norms
  – University A may have increased social norms regarding alcohol…or alcohol displays
Conclusion: Displays may be influential

- When something experienced or seen through media is similar to one’s experiences, influential effects are more powerful
Limitations

• Content analysis
  – High interrater reliability

• Two schools with limited racial diversity

• Some content may have been blocked
  – Estimates likely conservative
Implications:
Links between display & behavior

• Among participants who were Alcohol Displayers prior to college, a major predictor was pre-college alcohol experience

• Many pre-college Alcohol Displayers escalated to I/PD displays

• This may represent a unique population for intervention messages
Implications: 
Timing

• Timing of increased numbers of displays associated with alcohol-themed events
• Universities may wish to provide targeted messages within Facebook linked to keywords during these time periods
Similar findings

• Depression references on Facebook are associated with self-reported depression symptoms

• Students who display both alcohol and depression may represent a unique at-risk population
Study 2: College students’ intentions to drink alcohol with older peers

Megan Moreno, Jon D’Angelo, Lauren Kacvinsky, Mara Stewart, Lindsay Gordon, Chong Zhang, Jens Eickhoff
Purpose

• The purpose of this mixed-methods study was to explore the influence of peer Facebook cues on adolescents’ intention to drink alcohol
Methods

- Incoming freshmen college students
- Two universities
  - Midwest
  - West
- Age 17-19
Methods

• Baseline interview prior to arrival at college
Vignette

• Vignettes are systematically elaborated constructions of concrete situations
  – Frequently used in clinical research
  – Allow for avoidance of observer effect
  – Considered valid approach to understand participant responses in a given situation
Vignette

- The vignette asked the participant to imagine the following situation:
  - You have just been invited to a party by a senior student
  - Prior to attending the party you are checking out the student’s Facebook profile
  - We will present you with a series of posts that you see on the profile
Vignette

• “For each post, report how likely you would be to drink that night”

• 0-5 Likert scale from
  – Not at all likely
  – Very likely

• Participants also asked to comment on their responses
Vignette

• Posts included
  – Alcohol related
    • “I’m planning to get totally wasted tonight”
  – Non-alcohol related
    • “Can’t wait to run another marathon”
Analysis

• Wilcoxon and ANCOVA to compare Likert responses
• Qualitative analysis for comments
  – Nvivo
  – Word cloud for 50 most common words used
Results

- 338 participants
  - 56.1% Female
  - 74.8% Caucasian
  - 58.8% University A
Results

• After adjusting for gender, race and university, the prompts with the highest scores were the wall post:
  – Multiple wall posts posted by person’s friends describing plans for a study group
    • 2.06 (95% CI: 1.89-2.24)
  – Picture personal pictures of the person on a family vacation
    • 2.05 (95% CI: 1.88-2.23)
Results

• The lowest score, indicating lowest intention to drink, was for the wall post
  – *Multiple wall posts posted by person’s friends describing times they were intoxicated at 1.27 (95% CI: 1.09-1.44).*
<table>
<thead>
<tr>
<th>Status Update: I'm planning to get totally wasted tonight</th>
<th>Mean Intention (±SD)</th>
<th>Top Ranked Category</th>
<th># of Responses in Top Ranked Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Update: Can’t wait to run another marathon</td>
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<tr>
<td>Picture: Personal Picture of the person on a family vacation</td>
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<tr>
<td>Picture: Personal pictures of the person at parties doing keg stands</td>
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<td>Group: Mothers against drunk driving</td>
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<td>Interest: Getting ahead in life</td>
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<tr>
<td>Wall Post: Multiple wall posts posted by person’s friends describing times they were intoxicated</td>
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</tbody>
</table>
Why?

- I’m planning to get totally wasted tonight
- The 3 most common categories of response for this alcohol related post were
  - Participant had no intention of getting drunk
    - “I’m not a fan of getting drunk, or people who drink like that.”
  - Participant was nervous about the
    - “I wouldn’t feel comfortable if the only person I knew [at the party] wasn’t thinking properly”
  - Post suggested that the person would be a “bad host” to accompany to the party
    - “I wouldn’t want to be responsible for making sure they are ok”.

Why?

- For 3 of the non-alcohol related prompts including the status update prompt *Can’t wait to run another marathon*, the group prompt *Mothers against Drunk Driving* and the wall post prompt *multiple wall posts by the person’s friends describing plans for a study group*, the most common response category was “responsible.”
  - “they still know how to group priorities and are not just planning on being hungover the next day”
  - "they seem like an on-track person, more reliable"
drink drinking
good group hard influence interested just know
like make maybe might much party partying people
person plans priorities probably
responsible school
seem seems serious shows something still
study studying take things
time want well
Conclusions

• Contrary to our expectation, adolescents were more likely to respond with a higher intention to drink alcohol at a party after being presented with prompts that were unrelated to alcohol use.

• Qualitative data suggest that participants who intended to drink after viewing the non-alcohol related prompts frequently stated that they viewed the potential drinking partner as “responsible” to explain their increased intention to drink alcohol.
Conclusions

- Adolescents may intend to drink and are seeking a responsible peer leader to accompany them.
- Adolescents may view someone who displays Facebook alcohol displays as foolish.
Implications

• Adolescents may weigh social media cues in unique ways compared to cues in traditional media such as television

• In the transition to college, adolescents may expect opportunities to drink and thus seek a safe peer with whom to experience alcohol
Take home points

• The first year of college is a time in which alcohol references frequently emerge on Facebook
  – These references

• College students weigh these discrete cues in their decisions about drinking with a peer
Opportunities

• How can we utilize displayed alcohol content on Facebook towards prevention and intervention?
  – Facebook advertisements?
  – RAs viewing profiles?
  – Parent education?
Opportunities

• How can we educate college students about weighing cues on social media?
Acknowledgments

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