Freshman Alcohol Prevention Project: Correcting Misperceptions through Personalized Normative Feedback

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Rapid Response to College Drinking Problems

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Clayton Neighbors
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History

- Collaboration with Dr. Neighbors
  - Birthday Card study
  - Tailgating study

- Writing process with Dr. Lewis

- Rapid Response Partnership
North Dakota State University

- Mid-sized land grant university
- Residential campus
- Located in Fargo, ND
- Transition to Division I Athletics

- Students
  - 50% Minnesota
  - 50% Rural
North Dakota Youth

ND 9-12 graders are first in the nation in*:

- 30 day alcohol use (54%)
- Drunk driving (27%)
- Riding with someone after drinking (43%)
- Binge drinking (40%)

*Department of Health & Human Services/Center for Disease Control & Prevention, 2004
North Dakota Adults

- North Dakota Cities rank high nationally in prevalence of binge drinking*
  - 2nd Grand Forks/East Grand Forks
  - 17th Bismarck
  - 20th Fargo-Moorhead

- ND adults rank 2nd in nation in binge drinking (ND 22%, national 16%)**

* Nelson, Naimi, Brewer, Bolen, Wells, 2004
** CDC, Behavioral Risk Factor Surveillance System, 2004
North Dakota State University
Drinking Measures*

- Average number of drinks consumed per week: **6.51**
- Annual Consumption: **86.7%**
- 30 Day Consumption: **78.7%**
- 30 Day Consumption (under age 21): **73.9%**
- 5+ Drinkings/Sitting/2 weeks: **53.5%**

*CORE Alcohol and Drug Survey, 2006*
North Dakota State University Prevention Efforts

- **Population level**
  - Policy notification
  - Orientation
  - First Year Experience Course
  - Late night options

- **Indicated**
  - Choices curriculum, E-Chug, Prime for Life
  - Back on Trac

- **Environmental**
  - Campus coalition
  - Community coalition
  - Statewide consortium
  - Server training, overserving ordinance, compliance checks
  - Consistent enforcement, city & university
Freshman Alcohol Prevention Project

- **Why Freshmen?**
  - Over-represented in de-tox referrals
  - Over-represented in alcohol related arrests

- **Intervention**
  - Personalized normative feedback for first year students
    - No one has examined freshman specific PNF
Social Norms, Alcohol, and Prevention:

- Perceived norms are among the strongest and most consistent predictors of problem drinking among college students (Borsari & Carey, 2003; Perkins, 2002).

- Previous research has consistently demonstrated that college students overestimate descriptive drinking norms and the magnitude of overestimation has been prospectively linked with heavier drinking (Baer, Stacy, & Larimer, 1991; Lewis & Neighbors, 2004; Marks, Graham, & Hanson, 1992; Neighbors, Dillard, Lewis, Bergstrom, & Neil, 2006).

- Personalized normative feedback as a means of correcting normative misperceptions is an effective strategy for reducing college student drinking (Lewis & Neighbors, 2007; Neighbors, Larimer, & Lewis, 2004; Neighbors, Lewis, Bergstrom, & Larimer, 2006).
Freshman Alcohol Prevention Project

**Overview**
- Freshman
- Personalized Normative Feedback
  - Gender-specific
- High BAC Feedback
  - Estimated BAC level ≥ .26

- Participant Screening October 2005
- Baseline Assessment November 2005
- 3-Month Follow-Up February 2006
- 5-Month Follow-Up April 2006

Normative Feedback and BAC Feedback
Participant Screening

- First year experience course
- 4/5 Drinks (previous month)
- Recruit 300 Heavy-Drinking Freshmen

Participant Screening
October 2005

Baseline Assessment
November 2005

Normative Feedback
and BAC Feedback

3-Month Follow-Up
February 2006

5-Month Follow-Up
April 2006
Baseline Assessment - Feedback Interventions

- Measures
  - Perceptions
  - Actual behavior

- Conditions
  - Control
  - Gender-Neutral
  - Gender-Specific

- High BAC (BAC ≥ .26)
  - 22.5% of total participants

Participant Screening
  October 2005

Baseline Assessment
  November 2005

Normative Feedback and BAC Feedback

3-Month Follow-Up
  February 2006

5-Month Follow-Up
  April 2006
Gender-Specific Personalized Normative Feedback

According to the information you provided us during the computer assessment, the number of occasions you drank (frequency) was 5 times a week. The average amount you drank on each occasion (quantity) was 6 drinks.

You completed questions asking you what you believed the average frequency and quantity of alcohol consumed by other male freshmen college students to be. You told us that you believed that the average male freshman student drank 6 times a week and during each occasion, he consumed 7 drinks.

The actual drinking norm for male freshman students at North Dakota State University is 1.66 times a week drinking about 6.48 drinks on each drinking occasion.*

Your percentile rank (comparing you to other male freshmen college students) is 89%, which suggests that you drink more than 89% of other male college students.

*Note: This information comes from a sample 891 NDSU freshman students.

Please print this page and keep it for your records.
Gender-Neutral Personalized Normative Feedback

According to the information you provided us during the computer assessment, the number of occasions you drank (frequency) was 4 times a week. The average amount you drank on each occasion (quantity) was 7 drinks.

You completed questions asking you what you believed the average frequency and quantity of alcohol consumed by other freshmen college students to be. You told us that you believed that the average freshman student drank 5 times a week and during each occasion, s/he consumed 7 drinks.

The actual drinking norm for freshmen students at North Dakota State University is 1.63 times a week drinking about 5.66 drinks on each drinking occasion.*

Your percentile rank (comparing you to other freshmen college students) is 90%, which suggests that you drink more than 90% of other college students.

*Note: This information comes from a sample 891 NDSU freshmen students.

Please print this page and keep it for your records.
High BAC Feedback

Thank you for your participation in Freshman Alcohol Prevention Project. As you may recall, we explained in the consent form that we would be reviewing certain types of responses more closely. In doing so, we had some concerns about your drinking activity responses.

You mentioned that you had consumed **xx** drinks in **xx** hours which, given your reported weight, puts you at a blood alcohol concentration of **XX**. Reaching this blood alcohol level can be dangerous. Often people do not realize that they are drinking at levels that can place them at risk, and I wanted to bring your attention to this issue.

Below is information regarding blood alcohol concentration and the associated physical effects and risks. In addition, we have provided a resource list of services on campus and in the local community for getting more information about alcohol and reducing or preventing negative consequences associated with alcohol use. We hope you will find this information useful to you as a resource.

### BAC Behavioral Effects

<table>
<thead>
<tr>
<th>BAC</th>
<th>Behavioral Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>.05</td>
<td>feeling of warmth and well-being; mildly relaxed</td>
</tr>
<tr>
<td>.10</td>
<td>legally drunk; impairment of muscle coordination; driving is impaired</td>
</tr>
<tr>
<td>.15</td>
<td>obviously drunk; body coordination is seriously affected; vision blurred; speech slurred</td>
</tr>
<tr>
<td>.20</td>
<td>intoxication strong; significant loss of ability to carry on a conversation and make rational judgments; difficulty walking</td>
</tr>
<tr>
<td>.25</td>
<td>severe motor disturbance; staggering; sensory perceptions greatly impaired; smashed</td>
</tr>
<tr>
<td>.30</td>
<td>stuporous but conscious – no comprehension of what’s going on</td>
</tr>
<tr>
<td>.35</td>
<td>severe intoxication; loss of consciousness; coma or possible death</td>
</tr>
<tr>
<td>&gt; .40</td>
<td>breathing and heart action can stop; coma and possible death</td>
</tr>
</tbody>
</table>

- Share House, Inc.: 701-282-6561
- First Step Recovery, PLLP: 701-293-3384
- NDSU Counseling Center: Ceres Hall 212, 231-7671
- NDSU Alcoholics Anonymous Meetings: Wellness Center, Room168 (3:30 Thursdays and Noon Wednesdays)
High BAC Feedback

- Researcher verbally gave the participant some additional “tips” to avoid drinking to such dangerous levels
  - E.g., “Avoid playing drinking games, space drinks farther apart, eat a meal before going out”…etc.
3- and 5-Month Follow-Ups

- All participants completed perceived norms and drinking measures at both follow-ups.
Method - Participants

Participant Screening
- Prescreening of 891 freshmen
  - 437 (48.9%) met high-risk criteria of 4/5
  - Established drinking norms for personalized feedback
- Participants recruited for participation
  - 316 participated in baseline and intervention
  - 245 did not receive high BAC feedback
    - (52.2% female, 47.8% male)
  - 230 (93.9%) completed the 3-month follow-up
  - 209 (85.3%) completed the 5-month follow-up
Normative Misperceptions for Freshman Drinking Behavior

- Multivariate analyses revealed that freshman overestimate the drinking of their freshman peers \( (p < .001) \).

- Moreover, freshman overestimated the prevalence of freshman drinking outcomes at all three time-points for:
  - Drinks per week, \( p < .001 \)
  - Drinking frequency, \( p < .001 \)
Perceived same sex freshman specific norms are significantly associated with students own drinking, \( t (311) = 2.24, p < .05. \)

In contrast, regression results indicated that perceived opposite sex and typical freshman norms did not account for unique variance in personal drinking (\( t’s < 1 \)).
Both interventions were associated with drinking reductions at 5 month follow-up, \( p's < .01 \).

Estimated Marginal Means and Standard Errors for Drinking at Five Month Follow-Up by Intervention Condition

<table>
<thead>
<tr>
<th>Intervention Condition</th>
<th>Drinking Frequency</th>
<th>Drinks per Week</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( M )</td>
<td>( SE )</td>
</tr>
<tr>
<td>Control</td>
<td>2.43</td>
<td>0.13</td>
</tr>
<tr>
<td>Gender-neutral PNF</td>
<td>1.86</td>
<td>0.14</td>
</tr>
<tr>
<td>Gender-specific PNF</td>
<td>1.74</td>
<td>0.14</td>
</tr>
</tbody>
</table>

For both outcomes both interventions are significantly different from control but not from each other.
Both interventions reduced normative misperceptions at 3 month follow-up.

- Multivariate group differences were evident for both gender neutral, $p < .01$, and gender specific norms, $p < .001$.

Estimated Marginal Means and Standard Errors Perceived Norms at Three-Month Follow-up by Intervention Group

<table>
<thead>
<tr>
<th>Intervention Condition</th>
<th>Perceived Gender-Neutral Norms</th>
<th>Perceived Gender-Specific Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Drinking Frequency</td>
<td>Drinks per Week</td>
</tr>
<tr>
<td>Control</td>
<td>3.88</td>
<td>0.14</td>
</tr>
<tr>
<td>Gender-neutral PNF</td>
<td>3.42</td>
<td>0.15</td>
</tr>
<tr>
<td>Gender-specific PNF</td>
<td>3.30</td>
<td>0.16</td>
</tr>
</tbody>
</table>

In each case both interventions are significantly different from control but not from each other.
Limitations

- **BAC intervention**
  - Confound
  - Excludes extreme drinkers from analysis

- **Generalizability**
  - Only study examining *freshmen* specific feedback
    - Potentially demographically homogenous (to this campus)
  - Internet vs. In-lab
Study Conclusions

- Additional work is needed to evaluate the potential influence of high BAC feedback.
- PNF reduced normative misperceptions and PNF reduced drinking among high-risk freshmen.
- PNF reduced drinking as a function of reducing normative misperceptions (only for gender neutral).
- Freshman specific PNF is a promising approach to prevention with incoming freshman.
Future Directions

- Efficacy of Interventions with Freshmen Undergraduates
  - E-chug vs. Normative Feedback (onsite and internet only)
  - Policy will be recommended based on the findings of this study
    - Internet intervention in 189 course?
    - Post-Admission/Pre-Enrollment?
    - Sanctioned students?
Lessons Learned & Advice for Student Affairs Colleagues

- Collaborate with faculty
- Understand that researchers and practitioners have differing motives
- Be patient with the research process
- Be open to learning
- Recognize that you have something to teach
- Push yourself to publish and/or present
- Act on credible sources of information
Thank You!!

Questions?

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- www.ndsu.edu/ndsu/alcoholinfo/