The Impact of Patient- and SBI Process-Level Variables on 6-Month Drinking Outcomes in a Level I Trauma Center

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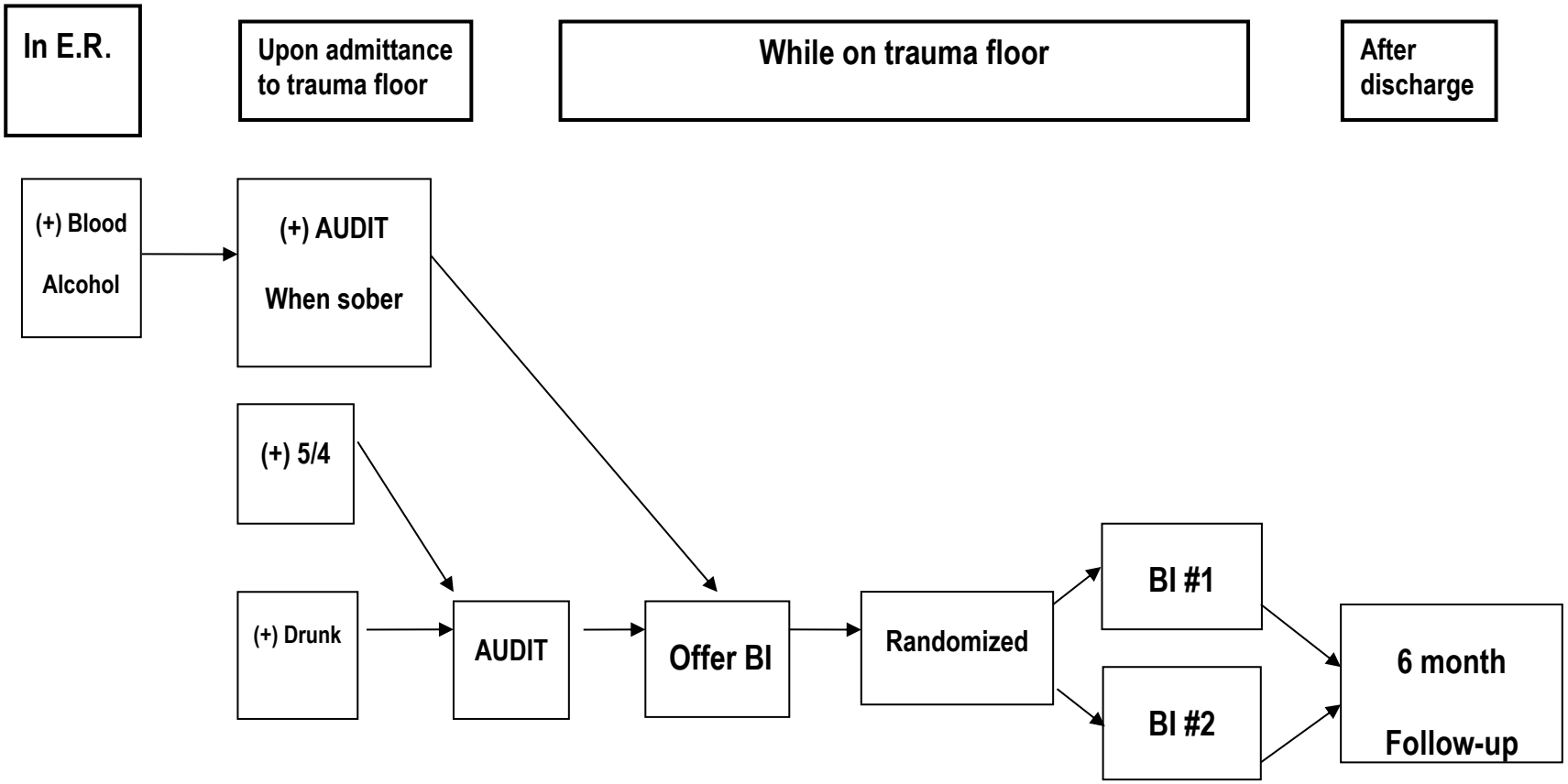
The Teachable Moment

- Robert Wood Johnson Foundation-funded research; team led by Mary Claire O'Brien, M.D.
- 333 participants were recruited from a Level I trauma center
  - Positive blood alcohol
  - Positive response to two questions assessing drinking habits
- Screened for risky drinking using the AUDIT
- Randomized into one of two brief counseling intervention treatment groups
  - Traditional quantity & frequency focus per NIAAA
  - Innovative patient-centered focus on reasons for drinking and alternative coping strategies
- Telephone follow-up at 6 months

Design: The Teachable Moment



The sample

Patients qualified for enrollment: 507

Patients enrolled: 333 (66%)

Baseline Participant Characteristics

	Overall N=333	Quantity/Frequency Group N=167	Qualitative Group N=166	p-value
Gender				
Male	81.7%	81.8%	82.5%	0.690
Female	18.3%	19.2%	17.5%	
Race				
White	72.7%	74.3%	71.1%	0.065
African-American	21.0%	22.8%	19.3%	
Latino	5.4%	3.0%	7.8%	
American-Indian	0.9%	0.0%	1.8%	
Marital Status				
Single	53.8%	57.5%	50.0%	0.154
Married	25.2%	22.8%	27.7%	
Divorced	11..1%	13.2%	9.0%	
Separated	0.6%	0.0%	1.2%	
Widowed	2.7%	2.4%	3.0%	
Unknown	6.6%	4.2%	9.0%	
Age	37.0 (12.6)	37.0 (12.8)	37.1 (12.4)	0.907

Enrolled participants & follow-up completers

Quantity/Frequency BI

- Enrolled N = 167
  - Age: 37.0
  - Baseline Blood Alcohol mean of 128.4 (8.2)
  - Baseline AUDIT mean 14.7 (6.1)
- Follow-up N = 97 (58% of full sample)
  - Baseline AUDIT mean 14.8 (7.8)

Innovative Patient-Centered BI

- Enrolled N=166
  - Age: 37.1
  - Baseline Blood Alcohol mean of 139.3 (8.5)
  - Baseline AUDIT mean 15.7 (6.6)
- Follow-up N = 84 (51% of full sample)
  - Baseline AUDIT mean 15.2 (7.9)

Significant findings: *Differences between interventions?*

- Are there differences between the two treatments based upon patient outcomes?
  - One-way between-groups multivariate analysis of variance [MANOVA]
    - NO. Results suggest that there were no statistically significant differences in outcomes ($p < .05$) between the group who received the traditional quantity/frequency intervention and the group who received the innovative patient-centered intervention.

Implications: *No differences in outcomes between the interventions*

- The innovative, patient-centered intervention utilized in the second treatment may be as efficacious at the traditional quantity/frequency-focused intervention that is recommended by the NIAAA
  - Replicates the findings of O'Brien et al. (2012), based on the same data set
  - Brings to mind the **'dodo bird verdict'** described by Prochaska and Norcross (2007), which posits that no one psychotherapeutic intervention or theory is clearly superior to another.
  - Suggest that perhaps the ubiquitous focus on quantity and frequency during brief interventions is not the only means by which to promote improvements in drinking behavior among the trauma patient population.
    - Researchers (e.g., Apodaca & Longabaugh, 2009; Nilsen et al., 2008) have called for more studies to examine the **"how and why"** (Nilsen et al., 2008, p. 200) of BI effects; maybe quantity/frequency is not THE active ingredient

Significant findings: *Predictors of outcome?*

The hierarchical regression model tested predicted 55% of the variance in Change in AUDIT score at 6 months post-intervention:

$R^2 = .550$, $F\ (7, 173) = 30.22$, $p < .001$

- Controlled for: age, race, sex, (STEP 1); blood alcohol level and pre-intervention AUDIT total (STEP 2); patient engagement and intervention group (STEP 3)
- Pre-intervention total AUDIT score was **THE** major predictor of changes in patient AUDIT score at follow-up in this model.
  - $\beta = .78$, $p < .001$
  - Theoretically counter-intuitive: **high scores** were associated with **greatest changes** at follow-up
  - Challenges assumptions regarding the potential of patients with high AUDIT scores to make changes after BI

Significant findings: *Predictors of outcome?*

Based upon significance of pre-intervention AUDIT score as a predictor, re-ran model entering each AUDIT item **separately**

- **Four** of the **ten** AUDIT items were found to be significant predictors on their own:
  - "Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?" ($\beta = .22$, $p < .001$)
  - "Have you or someone else been injured as a result of your drinking?" ($\beta = .21$, $p < .001$)
  - "How often during the past year have you found that you were not able to stop drinking once you had started?" ($\beta = .16$, $p < .05$)
  - "How often during the past year have you had a feeling of guilt or remorse after drinking?") ($\beta = .14$, $p < .05$)

Implications & Speculations: *AUDIT items as predictors*

- **"Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?"** ($\beta = .22$, $p < .001$)
  - Patient has had previous conversation(s) about his/her drinking patterns prior to intervention.
  - The problematic nature of these patterns was evident to at least one person in the patient's life (relative, friend, or health care worker).
  - These patients may have been more likely to receive social support for a change in their drinking patterns.

Implications & Speculations: *AUDIT items as predictors*

- **"Have you or someone else been injured as a result of your drinking?"** ($\beta = .21$, $p < .001$)
  - Possible responses to this question were, "No" (for a score of 0), "Yes, but not during the last year" (for a score of 2) or "Yes, during the last year" (for a score of 4).
  - Context: vast majority of these patients were intoxicated at the time of their injury, yet 47% answered "No"
  - At the time of the screening, many participants were not attributing their current traumatic injuries to their alcohol use

Implications & Speculations: *AUDIT items as predictors*

- **"Have you or someone else been injured as a result of your drinking?"** ($\beta = .21$, $p < .001$)
  - Those who answered "Yes, during the last year" showed the biggest changes in their drinking habits at follow-up.
    - Perhaps a patient's willingness and ability to attribute the injuries that led to their hospitalization to their alcohol use predicts a higher likelihood of being able to change drinking behaviors, perhaps especially if they receive reinforcement for and suggestions regarding such changes from trained mental health & substance abuse counselors.
    - This finding is convergent with research by Walton and colleagues (2008), who found that patient attribution of injury to alcohol affected brief intervention efficacy.

Implications & Speculations: *AUDIT items as predictors*

- **"How often during the past year have you found that you were not able to stop drinking once you had started?"** (β = .16, $p < .05$)
- **"How often during the past year have you had a feeling of guilt or remorse after drinking?"** (β = .14, $p < .05$)
  - These items both address patients' self-awareness regarding their drinking habits.
  - Persons with these high scores were: 1) aware of very frequently being unable to control their drinking, 2) aware of very frequently feeling guilty about their drinking, and 3) able to disclose this to an interventionist during the assessment
    - Perhaps these patients were in the Contemplation stage as described by Prochaska and DiClemente (1983), thus making them more able to move into the Preparation and Action stages of behavior change.
    - This hypothesis is speculative at best, however, given that Walton and colleagues (2008) did not find any relationship between pretreatment levels of change and outcome measures at 12 months.

Limitations

- Operationalization of patient engagement—construct validity concerns
  - This variable of interest did not emerge as significant, and thus not explicated here (contact author for more information or with questions)
  - Constrictions of extant data set limited operationalization of the variable
  - Future analyses : trends among patients with the highest and lowest pre-intervention resistance scores
  - Future investigations: inclusion of robust instrumentation to examine the processes at work during BI—e.g., resistance, engagement, therapeutic alliance
- Lack of control group
- Assessment reactivity—particularly in this data set, as all interventionists were clinical mental health and substance abuse counselors or counselors-in-training
  - How might the clinical skill level of the interventionists have impacted the results?

Suggestions for future research

- http://www.youtube.com/watch?v=A8JLGYaRmSA

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