Specialty substance use disorder services following brief alcohol intervention: a meta-analysis of randomized controlled trials

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ABSTRACT

Background and aims  Brief alcohol interventions in medical settings are efficacious in improving self-reported alcohol consumption among those with low-severity alcohol problems. Screening, Brief Intervention and Referral to Treatment initiatives presume that brief interventions are efficacious in linking patients to higher levels of care, but pertinent evidence has not been evaluated. We estimated main and subgroup effects of brief alcohol interventions, regardless of their inclusion of a referral-specific component, in increasing the utilization of alcohol-related care. Methods A systematic review of English language papers published in electronic databases to 2013. We included randomized controlled trials (RCTs) of brief alcohol interventions in general health-care settings with adult and adolescent samples. We excluded studies that lacked alcohol services utilization data. Extractions of study characteristics and outcomes were standardized and conducted independently. The primary outcome was post-treatment alcohol services utilization assessed by self-report or administrative data, which we compared across intervention and control groups. Results Thirteen RCTs met inclusion criteria and nine were meta-analyzed (n = 99 and n = 937 intervention and control group participants, respectively).
Rationale and Aims

Primary

• Estimate the main and subgroup effects of brief alcohol interventions in increasing the utilization of alcohol-related services

Secondary

• To estimate the association of post-SBI treatment utilization with alcohol-related outcomes
Methods

• A systematic review and meta-analysis of RCTs published in electronic databases through 2013

• Inclusion criteria
  • Intervened with alcohol use in a medical setting
  • Reported alcohol services utilization as an outcome
  • Not a treatment-seeking sample
  • English language

• Exclusion criteria
  • Drug/alcohol samples without alcohol-specific analysis
  • Alcohol services outcome delivered as part of the RCT
  • Primary care-behavioral health integration
Measures

- **Post-intervention alcohol services utilization**: Formal treatment and/or mutual help
- **Type of medical setting**: Primary care (PC), inpatient, emergency department (ED), other
- **Age**: Adolescent vs. adult sample
- **Sample Severity**:
  - *High* – Strictly alcohol dependent, alcohol detox, alcohol-induced medical problems
  - *Low* – Excluded dependent drinkers
  - *Mixed* – Dependent and non-dependent drinkers
- **Intervention intensity**:
  - *Low*: no in-person contact
  - *Medium*: single session
  - *High*: multiple sessions
Analyses

- Meta-analysis compared alcohol services utilization across study arms using STATA “metan” package
- Calculated risk ratios and 95% CIs
- I$^2$ statistic to measure heterogeneity across studies
- Subgroup analyses of studies with similar characteristics
- Qualitative review of interventions that attempted to evaluate the association between post-intervention alcohol services utilization and study outcomes
Results

Database search (n = 637)

Abstracts screened (n = 676)

Full-text articles assessed for eligibility (n = 111)

Included studies (n = 13)

Other sources (n = 35 hand search, n = 4 expert query)

Excluded (n = 565)

Excluded (n = 98)
Table 1. RCTs examining the association between brief alcohol intervention and post-intervention utilization of alcohol-related care ($n = 13$)

<table>
<thead>
<tr>
<th>Study</th>
<th>Setting</th>
<th>Effect?</th>
<th>Group n, % who received services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batel 1995</td>
<td>ED</td>
<td>Yes</td>
<td>188 11.2% 181 1.1%</td>
</tr>
<tr>
<td>Bernstein 2010</td>
<td>ED</td>
<td>No</td>
<td>207 1.9% 209 2.4%</td>
</tr>
<tr>
<td>Bischof 2008</td>
<td>PC</td>
<td>No</td>
<td>37 18.9% 36 11.1%</td>
</tr>
<tr>
<td>Cherpitel 2010</td>
<td>ED</td>
<td>No</td>
<td>80 2.5% 97 1.0%</td>
</tr>
<tr>
<td>Copeland 2003</td>
<td>PC</td>
<td>No</td>
<td>100 N/A 105 N/A</td>
</tr>
<tr>
<td>Crawford 2004</td>
<td>ED</td>
<td>No</td>
<td>131 32.8% 159 30.8%</td>
</tr>
<tr>
<td>Field 2010</td>
<td>ED</td>
<td>No</td>
<td>N/A N/A</td>
</tr>
<tr>
<td>Gentilello 1999</td>
<td>ED</td>
<td>No</td>
<td>194 4.6% 215 4.7%</td>
</tr>
<tr>
<td>Kuchipudi 1990</td>
<td>Inpatient</td>
<td>No</td>
<td>59 20.3% 55 16.4%</td>
</tr>
<tr>
<td>Monti 2007</td>
<td>ED</td>
<td>No</td>
<td>75 29.3% 80 20.0%</td>
</tr>
<tr>
<td>Monti 1999</td>
<td>ED</td>
<td>No</td>
<td>47 23.0% 37 18.0%</td>
</tr>
<tr>
<td>Saitz 2007</td>
<td>Inpatient</td>
<td>No</td>
<td>107 56.1% 105 56.2%</td>
</tr>
<tr>
<td>Wutzke 2002</td>
<td>Various</td>
<td>No</td>
<td>N/A N/A</td>
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</table>
$n = 1,930$ patients in 9 studies

<table>
<thead>
<tr>
<th>Study</th>
<th>RR (95% CI)</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Bernstein (2010)</td>
<td>0.81 (0.22, 2.97)</td>
<td>1.67</td>
</tr>
<tr>
<td>Bischof (2008)</td>
<td>1.70 (0.54, 5.32)</td>
<td>2.17</td>
</tr>
<tr>
<td>Cherpitel (2009)</td>
<td>2.42 (0.22, 26.26)</td>
<td>0.50</td>
</tr>
<tr>
<td>Crawford (2004)</td>
<td>1.07 (0.76, 1.49)</td>
<td>24.69</td>
</tr>
<tr>
<td>Gentilello (1999)</td>
<td>1.00 (0.41, 2.40)</td>
<td>3.65</td>
</tr>
<tr>
<td>Kuchipudi (1990)</td>
<td>1.24 (0.57, 2.72)</td>
<td>4.61</td>
</tr>
<tr>
<td>Monti (1999)</td>
<td>1.24 (0.53, 2.88)</td>
<td>3.96</td>
</tr>
<tr>
<td>Monti (2007)</td>
<td>1.47 (0.84, 2.57)</td>
<td>8.94</td>
</tr>
<tr>
<td>Saitz (2007)</td>
<td>1.00 (0.79, 1.27)</td>
<td>49.81</td>
</tr>
<tr>
<td>Overall (I-squared = 0.0%, p = 0.924)</td>
<td>1.08 (0.92, 1.28)</td>
<td>100.00</td>
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</tbody>
</table>

NOTE: Weights are from random effects analysis
Subgroup analyses

- No subgroup analyses of studies (stratified by age, setting, severity, intervention intensity) yielded statistically significant results
- Five studies compared referral-specific interventions to a control group that did not employ similar referral interventions (pooled RR=1.08, 95% CI=0.81-1.43)
Limitations

- Assessment of alcohol-related care varied across studies
- Studies had limited descriptions of RT-related interventions
- Many RCTs of brief interventions have been conducted, but most do not assess treatment utilization
- Did patients receive SBI, decrease consumption, then no longer need treatment?
Relevant studies not meeting meta-analytic criteria

- Controlled clinical trials
- Studies of other potentially relevant outcomes
  - Initiation of substance use disorder evaluations
  - Research intervention appointments

Blow et al., *JSAD*, 2010
Chafetz et al., *J Nerv Ment Dis*, 1962
Elvy et al., *Br J Addict*, 1988
Goldberg et al., *Medical Care*, 1991
Runge et al., *Unpublished*, 2002
Siomioni et al., *JSAT*, 2015
Implications

- Calling RT of SBIRT evidence-based may mislead us – What do we do?
- Identify and implement AUD interventions within the medical setting
  - RT in novel care models (shared decision making, collaborative care, chronic care management)

Bradley et al., *JAMA*, 2014
Oslin et al., *JGIM*, 2014
Saitz et al., *JAMA*, 2014
Commentaries on Glass et al. (2015)

<table>
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<tr>
<th>'SBIRT' IS THE ANSWER? PROBABLY NOT</th>
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<tr>
<td>Screening, brief intervention and referral to treatment (SBIRT) addresses the full spectrum of unhealthy substance use [1]. It sounds like the answer to the question: 'how can we reduce substance use and disorders?' by addressing everything except the delivery of specialized treatment itself. The best evidence suggests that brief intervention among people who drink risky amounts identified by screening (SBI) can reduce self-reported consumption very modestly in primary care patients (among those advised to drink less who are then asked if they have done so). The limitation of efficacy to a narrow band of those who drink too much but not too much is demonstrated by the disparate results of two emergency department SBI studies at the same site that differed largely in drinking eligibility/exclusion criteria [2,3]. The evidence for effects of alcohol SBI on any clinically important outcomes is limited, despite half a century of randomized trials and meta-analyses [4,5]. Studies have largely ignored patients with more severe unhealthy use by excluding such participants [6]. Glass et al. [7] assessed the evidence for the main way in which SBIRT addresses more severe unhealthy use—referral to treatment. They find randomized-controlled trial evidence that RT in</td>
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<tr>
<th>BRIDGING THE GAP BETWEEN MEDICAL SETTINGS AND SPECIALTY ADDICTION TREATMENT</th>
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| In their study, Glass et al. [1] examined whether Screening, Brief Intervention and Referral to Treatment (SBIRT) is efficacious for linking medical-setting patients with alcohol misuse, but not seeking alcohol-related care, to specialty addiction treatment. The results of their meta-analysis indicate that the referral to treatment component of SBIRT is not effective for promoting this care linkage. We commend the authors for highlighting the need to specify and evaluate interventions that can bridge this care gap. This commentary briefly summarizes some of the challenges to bridging the gap between medical settings and specialty addiction treatment and promising approaches to promoting this care linkage.

The authors bring to our attention that substantial barriers exist to linking patients in medical settings with alcohol misuse to specialty addiction treatment. Barriers to linking patients to addiction treatment are well documented and can be categorized as those pertaining to the patient, provider and care system [2]. Patient-level barriers include not perceiving oneself as in need of services, difficulties accessing treatment, stigma associated with |

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<tr>
<th>CHALLENGES AHEAD IN DEVELOPING AND TESTING REFERRAL TO TREATMENT INTERVENTIONS</th>
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<tr>
<td>We are grateful for these thoughtful commentaries on our meta-analysis [1]. Saitz [2] and Cucciare &amp; Timko [3] raise important issues about the numerous challenges related to linking individuals with alcohol use disorders who are identified in medical care to appropriate alcohol treatment services. As described by Saitz [2], a 10–15-minute brief intervention is probably too brief to help most people develop sufficient motivation to seek addiction treatment. Cucciare &amp; Timko [3] have described additional barriers to seeking treatment and potential solutions to providing treatment linkages [4]. Medical patients in primary care settings with more severe unhealthy alcohol use exhibit higher levels of readiness to change [5], and thus may be further along on the pathway of being ready to seek treatment. However, our meta-analysis [1] supports the assertion that Screening, Brief Intervention and Referral to Treatment (SBIRT) may be insufficient to lead to help-seeking, regardless of patient severity, even when supplemented by a booster session. There is consensus in these commentaries that repeated contact and monitoring over time seems to be a more sen-</td>
</tr>
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</table>

- **Comprehensiveness and feasibility** – are they at odds?

Enhancing RT

• Addressing limitations of prior studies

RT

Treatment Utilization

Drinking Outcomes

Barnett et al., *Addiction*, 2010
Bertholet et al., *JGIM*, 2010
Conclusions

• Brief alcohol interventions as currently tested and implemented are not efficacious in linking patients to specialty treatment services
• More dialogue is needed on RT development
Thank you!