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Do patient intervention ratings predict alcohol-related consequences?

Christina S. Lee, Ph.D.[a], **Richard Longabaugh, Ed.D.**[a], **Janette Baird, Ph.D.**[b], **Ana M. Abrantes, Ph.D.**[c], **Belinda Borrelli, Ph.D.**[d], **Lynda A. R. Stein, Ph.D.**[e], **Robert Woolard, M.D.**[b], **Ted D. Nirenberg, Ph.D.**[b,c], **Michael J. Mello, M.D., M.PH.**[b], **Bruce Becker, M.D.**[b], **Kathleen Carty, Ph.D., M.S.W.**[f], **Patrick R. Clifford, Ph.D.**[g], **P. Alison Minugh**[a,h], and **Aruna Gogineni, Ph.D.**[i]

[a] Center for Alcohol and Addiction Studies, Brown University, Providence, RI 02912, USA

[b] Injury Prevention Center of Rhode Island Hospital, Department of Emergency Medicine/Brown Medical School, Providence, RI 02912, USA and the Department of Psychiatry and Human Behavior, Brown University, Providence, RI

[c] Butler Hospital/Brown Medical School, Providence, RI 02906, USA

[d] Center for Behavioral Medicine/Brown Medical School, Providence, RI 02912, USA

[e] Department of Psychology, Cancer Prevention Research Center, University of Rhode Island, Kingston, RI, USA; Rhode Island Training School, Department of Children, Youth, and Families, Cranston, RI, USA; Department of Psychiatry and Human Behavior, Brown University, Providence, RI 01912, USA

[f] School of Social Work, Boston College, Boston, MA, USA

[g] University of Medicine and Dentistry of New Jersey School of Public Health, Piscataway, NJ 08854, USA

[h] Datacorp, Providence, RI 02906, USA

[i] Johns Hopkins University School of Medicine, Baltimore, MD 21205, USA

Abstract

Little is known about treatment process for behavior change for brief interventions. Patient ratings of treatment process during a patient-centered brief intervention for alcohol were used to predict post-treatment alcohol use and consequences. We use data from a randomized clinical trial that compared the effects of BI (1 session) to BI and booster (BIB, 2 sessions) to reduce harmful drinking and alcohol consequences. Subjects were n=167 (BI) and n=82 (BIB). Five of the 12 ratings were rated significantly higher by those in the BIB condition compared to BI. The only predictor of reduced alcohol consequences at 12-months was higher ratings of, "I have obtained some new understanding," for BIB participants ($t=-2.50$, $p < .05$). Patient perspectives on treatment may have a role in patient outcomes and should be explored as a dimension of treatment process.

Corresponding author: Christina Lee, (401) 863-6558, fax (401) 863-6697, Christina_Lee@Brown.edu, Center for Alcohol and Addiction Studies, Box G-S121-8, Providence, RI 02912.

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Keywords

patient rating; brief intervention; alcohol treatment outcome

1. Introduction

Brief interventions (BI), lasting one to three sessions, are effective with problem drinkers (e.g., Hettema, Steele, & Miller, 2005). However, little is known about what processes drive behavior change. To understand treatment processes, coding systems using third parties to rate therapist and patient behaviors have been developed and shown to impact outcome (e.g., Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003). An under-explored dimension of treatment process is the how the patient's perspective of treatment may influence outcome. This oversight is surprising as behavioral BIs (e.g., Motivational Interviewing), highlight the patient as the primary agent of change. The aim of the current study is to assess patients' perspectives of the treatment process, and determine whether or not their ratings of treatment process predict consequences of drinking. The current study is a secondary analysis of a clinical trial which found that Emergency Department (ED) patients receiving two sessions of treatment experienced fewer alcohol-related consequences than those who received standard care (Longabaugh, Woolard, Nirenberg, et al., 2001). Our paper is the next logical step after the Longabaugh paper because we are examining whether or not treatment process factors are the reason why those who had two sessions did better than those with one session. We hypothesized that patients who received two sessions would rate the BI more highly on a measure of treatment process and helping alliance than those who received only one session, and that those ratings would predict better clinical outcomes (e.g., alcohol consequences) for the former group. Related, we predicted that patient and therapist ratings of the post-session items would be correlated. We also hypothesized that intervention ratings would not predict these clinical outcomes for participants who received only one session.

2. Materials and Methods

2.1 Procedure

In the parent study (Longabaugh et al., 2001) from which the current data are drawn, 539 participants were recruited (10% refusal) in the ED of an urban Level-1 trauma center serving southern New England. Eligible participants were 18 years or older, injured and met criteria for alcohol severity (≥ 8 on the AUDIT, BAC positive, or ingested alcohol 6 hours before injury. Participants were randomly assigned to either: standard care (SC, n=188), Brief Intervention (BI, n=182), or Brief Intervention plus booster (BIB, n=169). The total sample size (n=249, 71% of participants who received either BI or BIB) was comprised of BI participants who received the first session and who completed a PRF afterwards (n=167), and BIB participants who attended both sessions and who completed a PRF after each session (n=82). DrInC 12-month data were obtained from 80% of all participants who completed the PRF ratings. Most of the participants were male (75%), single (85%), with a mean age of 38 years (SD=9.5). The ethnic distribution was 71% Caucasian, 10% African-American, and 14% Latino.

2.2 Intervention

An interventionist administered a baseline assessment battery in the ED to all participants before randomly assigning them to treatment condition. SC participants received medical care for their injury only. Patients assigned to BI or BIB received a motivational intervention conducted in the ED. After completing the BI, the interventionist opened a sealed envelope indicating whether the participant was to be offered a booster session (BIB). The booster

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session took place in the same location (ED) 7–10 days after the first session. The first session included a discussion about the injury and alcohol use, pros and cons of the target behavior, and completing a change plan. In the booster session, participants were encouraged to discuss their post-discharge experiences with focus on the change plan they made in the first session, to strengthen or alter the plan as they wished. The Change Plan worksheet listed: 1) the changes I want to make are 2) The most important reasons why I want to make are 3) the steps I plan to take are 4) the ways other people can help me are, 5) I will know my plan is working if, and 6) some things that could interfere with my plan are. Interventionists were trained using didactic and role play methods, and met with supervisors to discuss clinical sessions and to monitor treatment fidelity. After each treatment session, patients were asked to complete the PRF (Longabaugh, 1996) and were assured that the research interventionist would not view the PRF.

2.3 Measures

The PRF is a 12-item measure of treatment process and helping alliance adapted from the Penn Helping Alliance Rating Scale (Luborsky, Crits-Christoph, et al., 1983) on a 6-point Likert scale (1=I strongly feel it is untrue, 2=I feel it is untrue, 3=More untrue than true, 4=More true than untrue, 5=I feel it is true, 6=I strongly feel it is true). The scale showed good reliability (Cronbach's alpha=.88). Therapist ratings of the PRF items significantly correlated with patient ratings of the items, (range across 12 items=.19–.55), indicating construct validity. The Drinker Inventory of Consequences (DrInC) is a 45-item questionnaire that measures negative consequence experienced from drinking.

2.4 Methods of analysis

Factor analysis of the 12 PRF items was conducted. We compared patient ratings of the last intervention session received by BI (n=167, after session one) to the last intervention session received by BIB (n=82, after session two) using Independent samples t-test. For PRF items what were significantly different between treatment conditions, regression analyses were conducted to determine if these items and the interaction of each item with treatment condition predicted alcohol consequences at the 12-month follow-up after controlling for baseline DrinC scores.

3. Results

3.1 Differences in PRF ratings in one versus two sessions

The factor analysis of the PRF yielded three factors, none of which predicted DrInC outcome. Given the exploratory nature of this research and to minimize the risk of missing potential findings (Type II error) we conducted an item level analysis to capture any unique variance that was not captured by the overall factor. This approach in investigating new areas of research is not new (e.g. Longabaugh et al., 2001; Rohsenow, Monti, Martin et al., 2004).

Treatment participants (BI or BIB) were not significantly different on demographic, alcohol severity, type of injury, baseline DrInC, and readiness to change variables. Compared to BI (n=167), BIB participants (n=82) gave significantly higher ratings on the following PRF items: I believe the counselor has helped, I believe the counseling has helped, I have obtained some new understanding, I feel the counselor understands me, and the counselor wants me to achieve my goals (Table 1). These items were tested separately in regressions.

3.2 Relationship between PRF ratings in both treatment conditions and treatment outcome

Regression results revealed a significant interaction between the item "I have obtained some new understanding" (item 3) and treatment condition $F(1,195) = -2.53$, $p < .05$) (n=249). Post-

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hoc analyses using a two-way ANOVA revealed that it was BIB that was driving the effect. BIB participants who strongly endorsed (5=I feel it is true, 6=I strongly feel it is true) that they had "gained a new understanding" had significantly fewer DrInC consequences at 12-months compared to BIB participants who either did not endorse this item or who did not endorse it as strongly, $F(1,64)=14.06$, $p < .001$. On the other hand, ratings of the same item given by one session participants did not predict 12-month alcohol consequences. If "new understanding" was associated with better alcohol outcomes for BIB, we hypothesized that ratings would *increase* from the first to the second session. A t-test comparison of means for BIB participants attending both sessions (N=82) revealed that ratings on this item significantly increased at the second session compared to the first session ($t=2.98$, $p < .01$).

We addressed a number of competing explanations to clarify our findings. It is possible that among BIB, those who were assigned to receive two sessions but only attended one session (n=54) were different in some way from those who attended both sessions (n=115). There were, however, no significant differences on demographic, alcohol severity, injury status, baseline DrInC, or readiness to change variables. Among BIB, we explored whether the group who attended the second session and completed the PRF (n=82) were different in some way compared to those who attended the second session but did not complete the PRF after the second session (n=33). Groups were not significantly different on demographic, alcohol severity, injury status, baseline DrInc, or readiness to change variables. Further, no significant differences were found between BI and BIB on their ratings of the item "new understanding" after session one, suggesting that all participants viewed their intervention similarly after receiving the first session. Related, irrespective of whether participants received one or two sessions, their ratings on item 3 after the first session were not correlated with 12-month DrInC outcomes.

It was also found that patient and therapist ratings of "new understanding" significantly correlated ($r=.30$, $p < .001$), suggesting they were endorsing a similar construct. Also, exploration revealed that those who strongly endorse a new understanding were more likely to have an (alcohol-related) change plan that was high-quality (complete, well-detailed).

4. Discussion

Participants who returned for a second session and who strongly endorsed having a "new understanding" after their session experienced diminished alcohol-related consequences a year later. This is the first study to show that patient ratings of treatment process can predict long-term alcohol outcomes. Our findings suggest that something unique happens in the second session that increases treatment effectiveness, and that an increase in self-understanding may be associated with better clinical outcomes. Of note, ratings given by participants who received one session did not predict clinical outcomes. Further, the correlations between therapist and patient ratings of the same items suggest they were responding to the same constructs. We also found that having a new understanding was significantly correlated with having a high-quality alcohol-related change plan. We hypothesize that the review of pros and cons of drinking and the development of a change plan helped patients gain a new understanding of how their drinking may undermine important values and goals. Developing a discrepancy between current behavior and future goals is a key ingredient of Motivational Interviewing, and hypothesized to be a critical ingredient of change (Miller & Rollnick, 2002). Future research studies might include qualitative interviews of what patients felt was their new understanding, or could investigate whether people who have one session have a different understanding than those who had two sessions. For both clinical and for research purposes we decided to analyze the PRF at an item level. This analysis yields valuable and specific information for the clinician that would be obscured by factor-level analysis.

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The Patient Rating Form, designed to evaluate patient-centered counseling from the patient's perspective, pre-dates the recent MI treatment process research. Despite some overlap, such as the PRF focus on measuring collaboration, and patient self-understanding (consistent with the principles of MI spirit), other PRF items reflect general therapeutic processes. Because the PRF does not comprehensively assess all of the MI elements purported to influence treatment, the PRF is conceptualized to be a more general measure of patient-centered counseling than a specific measure of MI treatment process. The advantage of the PRF over MI coding techniques is that it is short, does not have to be coded by professionals, and can be filled out by the patient. Future investigations might include both an observer measurement of MI and a version of the PRF (adapted to be a measure of MI treatment process), to see an association between the two and to predict outcomes. The PRF might be used as a tool for more general treatment process analyses in substance abuse or to provide a conceptual starting point to develop more comprehensive and specific measures of treatment processes.

Our decision to examine only those who completed treatment and PRF ratings is a first step to understanding treatment processes. In this preliminary investigation, we focused on participants who completed treatment as well as completed the PRF. Therefore, generalizability is limited because this group may be a select sample. The original study (Longabaugh et al., 2001) reported that study accepters were significantly more likely to be older (31 vs 27) and married (22% vs 12%) than study refusers. However, no differences were found between BIB treatment completers and non-completers, and no differences were found between those BIB participants who were asked to complete the PRF and those who did not.

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Table 1

Comparison of Patient Rating Form (PRF) item means by treatment condition

	Brief Intervention (BI); n=167			Brief Intervention and Booster (BIB); n=82		
Item	***t* value**	**M**	**SD**	**M**	**SD**	**P value**
1. I believe the counselor has helped.	2.34	4.73	1.07	5.02*	.84	.020*
2. I believe the counseling has helped.	2.53	4.43	1.18	4.83	1.06	.012*
3. I have obtained some new understanding.	2.59	4.65	1.22	5.00	.083	.010*
4. I feel better than I did before I saw this counselor.	1.45	4.33	1.29	4.57	1.14	.148
5. I feel the counselor understands me.	2.82	5.06	.094	5.40	.72	.005**
6. The counselor wants me to achieve my goals.	2.09	5.23	.78	5.48	.73	.037*
7. I worked together with the counselor.	.71	5.26	.70	5.33	.79	.479
8. We have similar ideas about my problems.	.26	4.89	.97	4.93	.94	.796
9. I understand myself better.	1.12	4.44	1.30	4.63	1.19	.263
10. Gained information on relation between drinking and risky behavior.	.93	5.01	1.09	5.14	1.09	.355
11. The counselor encouraged me to make a change plan.	1.52	4.68	1.30	4.95	1.22	.130
12. The counselor helped me feel that I am capable of changing.	.77	4.97	1.12	5.09	1.11	.440

* $p < .05$

** $p < .01$

*** $p < .001$