A COMPARISON OF BRIEF INTERVENTION VERSUS SIMPLE ADVICE FOR ALCOHOL USE DISORDERS IN A NORTH INDIA COMMUNITY-BASED SAMPLE FOLLOWED FOR 3 MONTHS

HEM RAJ PAL1*, DEEPAK YADAV2, SARITA MEHTA3 and INDIRA MOHAN4

1Consultant, Substance Misuse, North East Essex Drug and Alcohol Services (N.E.E.D.A.S) (Formerly Associate Professor, National Drug Dependence Treatment Center), UK, 2Medical Social Service Officer, National Drug Dependence Treatment Center, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, 3Assistant Nursing Supervisor, National Drug Dependence Treatment Center, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029 and 4Senior Resident, National Drug Dependence Treatment Center, All India Institute of Medical Sciences, Ansari Nagar, New Delhi 110029, India

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Abstract — Aim: To examine the change in alcohol use parameters following a brief intervention (BI) based on the FRAMES protocol, compared to simple advice (SA), in a community setting in North India. Method: Ninety male subjects, 20-45 years old, with an AUDIT score between 8 and 24, consented to participate in this study. They were recruited from an earlier study on treatment, non-seeking, and allocated alternatively to the BI or SA protocols. The subjects were compared on drinking parameters, Addiction Severity Index (ASI), WHO Quality of Life (WHOQOL; Brief) and readiness to change (RCQ) after 1 month and 3 months post intervention. The assessments were made by an investigator blind to the intervention status of the subject. Results: Of the 90 subjects, 87 (96.7%) were available for follow up in the first month and 86 (95.6%) in the third month. There was significant improvement across many drinking and QOL parameters in both the BI and SA groups. Significant differences were noticed across interventions, with a decrease in severity of dependence as measured by alcohol use in the last 30 days, composite ASI scores & improvement in physical and psychological quality of life, in those who received BI compared to those who received SA. Changes in motivation toward action were documented at first follow up, but were not sustained in either of the interventions. Conclusions: BI had a slight advantage over SA in excessive users of alcohol in this community setting in India. It is probable that booster sessions would be needed to achieve sustained effect.

INTRODUCTION

Alcohol-related disabilities have increasingly been recognized as a major source of concern both in the developed as well as developing nations (WHO, 1980). Between 3 and 5% of adult males have an alcohol dependence syndrome and another 10–15% appear to be problem drinkers. A nationwide survey of representative male population between the age of 12 and 60 years in India reported alcohol use in the last 30 days in 28% and alcohol dependence according to the International Classification of Diseases-(ICD-10) (WHO, 1992) in 4% of the population (Srivastava et al., 2003). The interpretation of the prevalence rate is subject to the cultural context and in a ‘largely abstinent’ (Saxena, 1997) Indian culture this high rate of problems would indicate the need to develop intervention strategies. Given the context of paucity of trained resources, these approaches must require a minimum of time and resources.

There is extensive literature on the importance of brief intervention (BI) approaches in alcohol users. Wilk et al. (1997) concluded that drinkers who received BI were twice more likely to reduce their drinking over a 6- to 12-month period than those who did not. Other authors reported positive effects of brief physician advice up to 48 months later, and there is evidence of a net benefit. (Moyer et al., 2002; Grossberg et al., 2004). A recent study reported that brief intervention is associated with decreased alcohol consumption and decreased health care utilization, motor vehicle events, and other related costs (Fleming et al., 1997; Fleming et al., 2002). A recent systematic review (Bertholet et al., 2005) of 17 studies included 8 studies that showed an overall beneficial reduction in alcohol use which was sustained over a 6- and 12-month period. However, most data was generated in the United States and the developed world, and little information is available on the use of this approach in countries with limited health care resources as India.

Miller and Sanchez (1993) have described the critical elements of BI as FRAMES. This (acronym) consists of ‘feedback’ of personal risk for impairment, emphasis on personal ‘responsibility’ for change, clear ‘advice’ to change, ‘menu’ of alternative change options, therapeutic ‘empathy’ as counseling style and enhancing ‘self-efficacy’ or optimism. Installation of hope and optimism rather than helplessness and powerlessness for change in the drug use habits is highlighted.

FRAMES has become an important component in the treatment programs used by the Drug Dependence Treatment Center at the All India Institute of Medical Sciences in New Delhi, India, because of its low cost and because it can be modified to suit the requirements of a particular setting. Our program has also developed a manual for use in this setting. (Pal et al., 2005)

The present study was planned to evaluate multiple outcomes associated with BI in Indian men who demonstrated alcohol problems on the Alcohol Use Disorders Identification Test (AUDIT) (harmful users) in comparison with simple advice (SA).

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METHODOLOGY

The sample of 90 male subjects was recruited from participants of an earlier community-based study (Pal et al., 2003) which evaluated the reasons for non attendance in a sample of male drinkers having problematic alcohol use as defined by AUDIT. The 495 males in the earlier study had been recruited in a house-to-house survey targeting adult males and did not include females, as the prevalence of alcohol use among females was low and it seemed socially incorrect to interview females regarding alcohol use, given the socio-cultural context. Consequently, the sample group for this study, which consisted of individuals with problematic alcohol use, consenting to participate in the evaluation of the intervention, was all males. The current study subjects were between 20 and 45 years of age, had an AUDIT score between 8 and 24, and gave consent for participation while not demonstrating significant medical or psychiatric illnesses. At recruitment, the subjects gave informed consent to participate in the initial assessment and the two subsequent assessments at 1 and 3 months after recruitment. The upper cut-off AUDIT score of 24 was based on the earlier results that indicated this cut-off was useful for differentiating ICD-10 harmful use from alcohol dependence. (Pal et al., 2004).

All subjects were evaluated with the following instruments:

The AUDIT (Babor et al., 1992) has 10 items rated from 0–4 and takes about 5 minutes to administer. The suggested cut-off by WHO is 8 or 9 for hazardous use, and 10 or more for dependent use of alcohol respectively. The 10 items of the core instrument have been theoretically categorized into: (i) drinking behavior (1, 2 & 3) (ii) CAGE questions (6 & 7) and (iii) consequences (4, 5, 8, 9 & 10) (Allen and Litten, 2002). The Hindi translation of AUDIT has been validated in India recently. (Pal et al., 2004)

WHO Quality of Life (WHOQOL-BREF) Hindi translation (Saxena et al., 1998) is a 26-item multiple-choice questionnaire that produces a quality of life profile consisting of 4 domains of physical, psychological, social and environmental. The Addiction Severity Index (ASI) (McLellan et al., 1992) is a semi-structured interview designed to address seven potential problem areas in substance abusing patients: medical status, employment and support, drug use, alcohol use, legal status, family/social status, and psychiatric status. Taking about 1 hour, a trained interviewer gathers information on recent (past 30 days) and lifetime problems in all of the problem areas. The current study used a Hindi translation of the ‘Drugs And Alcohol Section (D)’ done by the principal author and had been used in a previous WHO study on Identification and management of Substance Use Disorders in primary Care settings: ASSIST Phase II.

Finally, the Hindi translation of the Readiness to Change Questionnaire (RCQ) (Heather, Gold and Rollnick, 1991) assesses the motivation of the individual and categorizes the stage of change for each regarding pre-contemplation, contemplation and action stages (Pal et al., 2003; 2005).

After informed consent, all subjects were assessed at baseline by interviewer 1 (Sarita Mehta) who was not involved in delivering treatment. All participants irrespective of their group allocation underwent an initial assessment which consisted of detailing the physical, psychological, social, legal and occupational harm associated with alcohol use using a semi-structured interview schedule and took about 30 minutes. None of the subjects refused participation in the study.

The first case was then allocated to the intervention arm by the toss of a coin and subsequent cases were allocated alternatively to BI or SA. The first case was allocated to BI if the coin came up ‘heads’, or to SA if it was ‘tails’. Interviewer 2 (Deepak Yadav) carried out the intervention for all the subjects after which they were followed up at 1 month and 3 months, and assessments were done by interviewer 1 who was unaware of the intervention allocation of the subjects. The subjects were not provided any incentives for participation.

Interventions

The BI (experimental arm) based on motivational interviewing, consisted of two sessions separated by a 3- to 5-day gap. In session 1, lasting 45 minutes, feedback was given regarding the harmful consequences of drinking, establishing clear links between alcohol consumption and the consequences while emphasizing the patient’s personal responsibility to change, and facilitating self-efficacy and optimism. Before the session ended, alternatives to drinking were explored. Session 2, lasting 45 minutes, consisted of discussing alternative activities and highs, evaluation of high-risk situations and implementation of alternative highs and coping in the subsequent period. For the study to be culture specific, a reduction in stress on personal responsibility was included. The details of the intervention are available in Brief Intervention: A Manual for Practice (Pal et al., 2005).

SA (Control arm) consisted of a 5-minute session that was carried out in a face-to-face setting and involved empathic expression of concern based on consequences, with an advice to cut down or stop alcohol use. Any additional query was handled in a separate session outside the therapy and in no case was BI attempted.

Statistical analysis

SPSS 11.0 (SPSS, 2001) was used for analysis. Comparisons between the two intervention groups were made using the students t-test and by Generalized Linear Model Repeated Measures 2 × 3 Analysis of Variance (ANOVA) for comparing observations across the three contact periods to demonstrate a treatment intervention × time interaction. Appropriate corrections (Huynh Feldt or Greenhouse Geisser) were applied when the sphericity assumption was not met (Field, 2005). Records with incomplete (3 at 1 month and 4 at 3 months) information were not included in the analysis.

RESULTS

A total of 90 subjects with 45 subjects in each intervention arm were included in the study. The mean age for the whole sample was 29.7 years (SD 9.89) and there was no difference in the age and the number of years at school between the two intervention categories. The majority of subjects (67.7%) were married and there was no difference in marital status
between the two groups. The mean age at starting daily use of alcohol was 20.16 years (SD 7.01) and the range was 14 to 62 years.

At baseline, there was no significant difference between the two interventions on the age at daily use, days per month alcohol used, average amount, heaviest consumption in a day or amount of alcohol used in the last episode prior to inclusion. However, there was a significant difference between the two groups with the subjects in the BI group having initiated alcohol use at a later age ($F = 5.51, P = 0.021$). There was no significant difference between the two groups on the baseline ASI parameters, the AUDIT scores, physical, psychological, social & environmental domains of WHOQOL and in the number of individuals in the stage of change across the two intervention arms. There were 17 (37.78%) subjects in pre-contemplation and 21 (46.67%) subjects in the contemplation stages in the BI group at baseline as compared to 6 (13.33%) and 32 (66.67%) subjects in the contemplation stages in the SA group. The numbers in the action stage were the same at 7 (15.56%) in both the groups at baseline. There were more subjects in the contemplation stage in SA as compared to BI ($\chi^2 = 7.54, df = 2, P = 0.023$).

At follow-up, 87 (96.7%) subjects were available for the first follow-up at 1 month and 86 (95.6%) subjects for the second follow-up at 3 months. The mean number of days to first follow-up was 40.81(SD 19.37) and the mean number of days to second follow-up was 99.27(SD 13.27). There was no significant difference between the days to follow-up in the two intervention arms.

There was significant change in the composite ASI between baseline and first follow-up ($t = 10.58, df = 62, P = 0.000$) and baseline and second follow-up ($t = 6.87, df = 64, P = 0.000$) but not between first and second follow-ups ($t = 0.89, df = 61, P = 0.39$) for the group as a whole. There was significant change between the baseline and first follow-up ($t = 11.45, df = 33, P = 0.000$), first and second follow-up ($t = 3.30, df = 33, P = 0.002$) and between baseline and second follow-up in the BI group ($t = 3.19, df = 31, P = 0.003$). In the SA group though, a similar pattern of change between baseline and first follow-up ($t = 5.59, df = 28, P = 0.000$) was noticed, though the change between the first and the second follow-up was not significant ($t = 1.60, df = 29, P = 0.12$).

Repeated measures analysis was done for change in alcohol use in the last 30 days, Composite ASI scores, Problem with alcohol use on ASI (Table 1) and WHOQOL domains (physical, psychological, social and environmental) (Table 2) using a 2 × 3 ANOVA with intervention as the between-subjects factor. The sphericity assumption was met for the 30–days’ use of Alcohol on ASI ($Chi-square = 0.61, df = 2, P = 0.74$). There was a significant change (main effects) in the ASI score for change in alcohol consumption in the last 30 days ($F = 88.1, df = 2, P = 0.000$) and there was significant interaction between the intervention and the change in ASI alcohol use in last 30 days ($F = 7.89, df = 2, P = 0.001$) denoting the effect of BI being significantly higher than SA in reducing alcohol use in past 30 days. For the repeated measures analysis of composite ASI scores, sphericity assumption was not met ($Chi-square = 7.75, df = 2, P = 0.021$). There were significant main effects ($F = 41.22, df = 1.85, P = 0.000$). There was also significant

### Table 1. Change (main effects) in alcohol ASI scores across the three contact points at baseline, 1 month and 3 months

<table>
<thead>
<tr>
<th>ASI</th>
<th>Intervention</th>
<th>Baseline mean(SD)</th>
<th>1st FU mean(SD)</th>
<th>2nd FU mean(SD)</th>
<th>F</th>
<th>df</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days used alcohol in last 30 days</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>24.71 (8.37)</td>
<td>9.67 (9.31)</td>
<td>10.07 (9.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>26.07 (6.47)</td>
<td>2.73 (9.92)</td>
<td>19.05 (10.63)</td>
<td>88.07</td>
<td>2</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Experienced problems (days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>2.02 (6.75)</td>
<td>4.22 (9.51)</td>
<td>4.33 (9.64)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>4.7 (9.97)</td>
<td>4.48 (8.38)</td>
<td>7.90 (11.5)</td>
<td>2.63</td>
<td>1.59</td>
<td>0.075</td>
<td></td>
</tr>
<tr>
<td>Composite ASI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>0.36 (0.18)</td>
<td>0.22 (0.19)</td>
<td>0.18 (0.22)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>0.42 (0.19)</td>
<td>0.28 (0.21)</td>
<td>0.33 (0.24)</td>
<td>41.22</td>
<td>1.85</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

*Using GLM Repeated measures ANOVA.

### Table 2. Change in quality of life dimensions scores across the three contact points at baseline, 1 month and 3 months

<table>
<thead>
<tr>
<th>Domain</th>
<th>Intervention</th>
<th>Baseline mean(SD)</th>
<th>1st FU Mean(SD)</th>
<th>2nd FU Mean(SD)</th>
<th>F</th>
<th>df</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>15.07 (2.11)</td>
<td>16.08 (2.19)</td>
<td>16.72 (2.16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>14.08 (2.79)</td>
<td>15.07 (2.96)</td>
<td>14.46 (3.32)</td>
<td>5.56</td>
<td>1.89</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>12.81 (3.07)</td>
<td>13.89 (3.16)</td>
<td>14.51 (3.58)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>12.42 (3.29)</td>
<td>12.56 (3.41)</td>
<td>12.25 (3.73)</td>
<td>4.5</td>
<td>1.64</td>
<td>0.012</td>
<td></td>
</tr>
<tr>
<td>Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>13.54 (2.93)</td>
<td>14.11 (2.48)</td>
<td>14.05 (2.65)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>13.27 (3.69)</td>
<td>13.24 (3.35)</td>
<td>13.35 (3.47)</td>
<td>0.60</td>
<td>1.80</td>
<td>0.52</td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BI</td>
<td>13.69 (1.72)</td>
<td>14.26 (1.63)</td>
<td>14.98 (1.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>13.19 (2.51)</td>
<td>13.47 (1.99)</td>
<td>14.06 (3.84)</td>
<td>8.26</td>
<td>1.30</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

* Using GLM Repeated Measures ANOVA.

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interaction between the intervention and the composite scores ($F = 7.59, \text{df} = 1.85, P = 0.001$) with the scores in BI condition being significantly less than the scores in the SA condition. The sphericity assumption was not met for the problems due to alcohol use in past 30 days on ASI (Chi-square = 20.46, $\text{df} = 2, P = 0.000$). There were no significant main effects ($F = 2.63, \text{df} = 1.59, P = 0.075$).

For the change in WHOQOL scores in physical (Chi-square = 7.89, $\text{df} = 2, P = 0.01$) and psychological (Chi-square = 24.4, $\text{df} = 2, P = 0.000$) domains, the sphericity assumption was not met. There were significant main effects for the physical ($F = 5.56, \text{df} = 1.89, P = 0.005$) and psychological ($F = 4.54, \text{df} = 1.64, P = 0.018$) domains. There was significant interaction for the physical ($F = 9.96, \text{df} = 1.89, P = 0.000$) and psychological ($F = 6.37, \text{df} = 1.64, P = 0.004$) domains showing a significantly greater change with BI than SA. The sphericity assumption was not met for the social (Chi-square = 12.75, $\text{df} = 2, P = 0.002$) and the environmental domains of the QOL (Chi-square = 64.1, $\text{df} = 2, P = 0.000$). There were no main effects for the social domain of QOL ($F = 0.66, \text{df} = 1.8, P = 0.52$). There were significant main effects for the environmental domain ($F = 8.26, \text{df} = 1.30, P = 0.002$) but there was no significant interaction between the intervention and the environmental domain scores of WHOQOL ($F(0.31, \text{df} = 1.30, P = 0.62$).

At the first follow up a month after intake, there was no subject in the pre-contemplation stage, 16 (37.21%) were in pre-contemplation and 23 (52.27%) and 19 (43.19%) were in the contemplation and action stages respectively. At 3 months however, 22 (54.76%) subjects were in pre-contemplation, contemplation and action stages respectively. At 3 months however, 22 (54.76%) subjects were in pre-contemplation, 13 (30.95%) were in contemplation and 7 (16.67%) were in action in BI with the SA group reflecting a similar trend with 13 (29.95%) subjects in pre-contemplation, 26 (59.10%) in contemplation and 5 (11.35%) in the action stages.

**DISCUSSION**

This study was undertaken to evaluate the impact of BI, an established form of intervention in comparison with SA for alcohol users who had AUDIT scores between 8 and 24. This range of AUDIT scores has been shown to correspond to the group of harmful users (ICD-10) in a previous study by the principal author in this setting (Pal et al., 2004). The study set out to test the impact of a structured two-session FRAMES-based BI, and compared with a short unstructured SA intervention with the knowledge that there is literature to support the beneficial effects of brief unstructured interventions (Grossberg et al., 2004). This was also done so that the ethical dilemma of not offering any intervention in the control condition is managed. To obviate the impact of assessment on outcome subjects in both, the groups underwent the same assessment prior to allocation. It can, however, still be debated that the process of assessment could still have contributed to the changes in drinking parameters.

Though the study participants were allocated alternatively to the intervention groups, they were comparable with regard to age, education, marital status, age at daily use of alcohol, the average amount of alcohol used, number of days of alcohol use in the past month, heaviest consumption in a day, mean AUDIT score, amount used on the last occasion and QOL domains at baseline in the two groups of BI and SA in the present study. There was a difference between the two groups on the age of onset, with the BI group having an onset later than that of the SA group, though age at onset is not known to be a predictor of outcome. The study was, however, limited by a lack of laboratory or social corroboration of the reported status by participants. Another limitation, arguably, is the fact that both the interventions were carried out by the same therapist. Yet another possible drawback is the short duration of study limiting the conclusions to be drawn over a longer period of time.

FRAMES based BI, as delivered in this study as well as SA, lead to a reduction in ASI parameters. A significant main effect of intervention indicated improvement in drinking parameters due to alcohol use in the past 30 days, composite ASI scores, physical, psychological and environmental domains of WHOQOL. There was no change in the problems due to alcohol use on ASI and the social domain of the WHOQOL. This probably indicates that the problems due to alcohol use and the social changes related to changes in alcohol use probably take longer than the 3 months over which the study was conducted. Reduction in alcohol use as evidenced by a change in alcohol use in 30 days, would mean an overall reduction in alcohol use, but it is quite likely that individuals continued to drink to intoxication in those few episodes when they used alcohol. Composite ASI is derived using alcohol use problems, events, and other related costs have been documented by other studies also. (Lock et al., 2006)

There was significant interaction observed in the use of alcohol in the past 30 Days, composite ASI scores, physical and psychological domains of WHOQOL, thus reflecting that those who underwent brief intervention benefited more than those who had simple advice. The changes in drinking parameters are in line with the effects reported by Fleming et al. (1997). A systematic review of 17 trials had 8 trials with significant reduction in alcohol consumption at 6 and 12 months. (Bertholet et al., 2005). The beneficial effects of BI including decreased health care utilization, motor vehicle events, and other related costs have been documented by other studies also. (Wilk et al., 1997; Fleming et al., 2002; Moyer et al., 2002).

In this study there was a definite change from a pre-contemplation and contemplation to action in both the BI and SA groups in the first follow-up but the change was not sustained and by the second follow-up there was a loss of motivation. Though there were excess contemplators in SA group this would have biased the findings in favour of BI which was the group that appeared to have advantage.

Overall, some of the beneficial changes in drinking measures as measured by ASI parameters, improvement in QOL and possibly, the motivation enhancement as a consequence of intervention, seem more apparent in the BI than in the SA.
group even though some of the other parameters are similarly affected by the two interventions. This study supports findings by Kunz et al. (2004) that intervention subjects receiving brief intervention had better 3-month outcomes than the control subjects.

It thus appears, that a culture specific two-session brief intervention based on FRAMES for harmful alcohol use as defined by AUDIT in the community in India is an effective intervention and leads to improvement in the outcome in the short-term. This study also shows that both the BI and SA are effective tools for motivation enhancement in the short term. To be an agent of sustained change, the interventions need to be supported by booster sessions. These booster sessions could include a brief contact either in person or through telephone, to assess high-risk situations, reinforce coping behaviors and improve compliance. About 40 to 50% patients change their alcohol use behaviour and reduce risk for alcohol-related adverse events when physicians spend some time talking about alcohol use for a few minutes (Grossberg et al., 2004). The study supports a more prevalent application of BIs in busy medical and primary care settings. However, for those with more severe alcohol problems in a treatment setting, brief intervention may be appropriate only as an initial treatment followed by receiving more extensive/intensive treatment (Moyer et al., 2002).

REFERENCES


