BRIEF ALCOHOL INTERVENTIONS: DO COUNSELLORS’ AND PATIENTS’ COMMUNICATION CHARACTERISTICS PREDICT CHANGE?
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Abstract — Aims: To identify communication characteristics of patients and counsellors during brief alcohol intervention (BAI) which predict changes in alcohol consumption 12 months later. Methods: Tape-recordings of 97 BAI sessions with hazardous drinkers were analysed using the Motivational Interviewing Skill Code (MISC). Outcome measures were (i) baseline to a 12-month difference in the weekly drinking quantity, and (ii) baseline to a 12-month difference in heavy drinking episodes per month. Bivariate analyses were conducted for all MISC measures, and significant variables were included in multiple linear regression models. Results: Patient communication characteristics (ability to change) during BAI significantly predicted the weekly drinking quantity in the multiple linear regression model. There were significant differences for some of the counsellor skills in bivariate analyses but not in the multiple regression model adjusting for patients’ talk characteristics. Changes in heavy drinking showed no significant association with patient or counsellor skills in the multiple linear regression model. Conclusion: Findings indicate that the more the patient expresses ability to change during the intervention, the more weekly alcohol use decreases. The role of the counsellor during the interaction, and influence on the outcomes was not clearly established. Implications for BAI and related research are discussed.

INTRODUCTION

Brief alcohol interventions (BAI) have been associated with approximately 20% decrease in alcohol consumption, and are often as effective as more intensive treatments (Bien et al., 1993; Dunn et al., 2001; D’Onofrio and Degutis, 2002; Emmen et al., 2004; Bertholet et al., 2005). Although evidence for the efficacy of BAI is accumulating, little is known about how it works and which counsellor and patient communication characteristics are most effective for triggering behaviour changes. So far, the main contribution to the literature in this field has been the identification of six common factors used in effective brief intervention trials, summarized under the acronym FRAMES (Bien et al., 1993; Miller and Sanchez, 1993): Feedback regarding personal risk or impairment, emphasis on personal Responsibility for change, clear Advice to change, a Menu of alternative change options, therapeutic Empathy as a counselling style, and enhancement of client Self-efficacy or optimism. The authors demonstrated that these six factors were present in effective brief interventions, but did not evaluate their role in stimulating patient change. So far, the communication characteristics of counsellors and patients during BAI have not been empirically tested.

BAI generally incorporates a motivational interviewing (MI) style and techniques for use in time-limited healthcare settings (Noonan and Movers, 1997; Dunn et al., 2001; Burke et al., 2003; Vasilaki et al., 2006). It typically includes such MI components as adopting an empathic and non-confrontational style, asking open questions, affirming, summarizing, asking permission, encouraging patient choice and responsibility in decision making, providing advice, reflective listening, variation in depth of reflections, eliciting change talk, and rolling with resistance (Rollnick et al., 2002). But even for MI, little is known about what specifically works during therapeutic sessions.

Miller et al. (1993) showed that a directive-confrontational counselling style created a lot of resistance in clients, which in turn predicted fewer reductions in drinking 1 year later. The Motivational Interviewing Skill Code (MISC) was developed to better quantify and qualify clinical interactions (Miller, 2000; Miller et al., 2003). This instrument quantifies communication characteristics and behaviours of counsellors and patients during MI sessions by analyzing video or tape-recordings. Moyers et al. (2005) found that therapist interpersonal skills (assessed by the MISC) were positively associated with patient involvement during MI sessions. Patient language during MI was studied by Amrhein et al. (2003) and the commitment strength of patients was described as predicting favourable drug use outcomes such as numbers of days abstinent. This research led to the revision of coding for patient behaviours in the second version of the MISC (Miller et al., 2003). Recent research showed that MI-consistent therapist behaviours were more often followed by patient self-motivational statements, whereas MI-inconsistent behaviours were more likely to elicit patient resistance (Moyers and Martin, 2006).

To date, there has been no attempt to investigate if the MISC can be used to explain which of the many facets of communication between counsellors and patients predict behaviour change through BAI. Thus, the purpose of this study is to document patient and counsellor behaviour during BAI sessions, and to identify communication characteristics that predict alcohol use changes.

METHODS

Study design
This study was a secondary analysis of data from a randomized controlled trial conducted in the emergency department.

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COMMUNICATION CHARACTERISTICS DURING BAI

Between June 2003 and June 2004, all consecutive BAI sessions were tape-recorded when patient consent was obtained, resulting in 166 recordings. 97 of these were eligible for coding and analyses. Excluded were 33 lost to follow-up, 25 with incomplete records, 7 with mismatched identification codes, 3 who were not sufficiently fluent in French, and 1 whose wife intruded during the session. Two masters-level psychologists independently carried out coding of the 97 tape-recordings, blinded to assessment and follow-up data; both were trained in MI and in using MISC version 2.0 (Miller et al., 2003). MISC training consisted of simultaneous then independent coding of a BAI sessions with discrepancies resolved by an expert. Training lasted until the inter-rater reliability was sufficient for each code. Simultaneous coding meetings with discrepancies resolved by an expert were ongoing during the coding period on a weekly base. Sessions used during training were those excluded so that none of the sessions used in the present study were used for training.

The MISC data is comprised of global ratings and behaviour counts. Two passes were made through each tape-recorded session. The first, uninterrupted pass assessed global ratings. The coder listened the whole session and then assigned a number on a 7-point Likert scale from 1 (low) to 7 (high) on each of four dimensions: counsellor level of acceptance, empathy and MI spirit, and patient degree of self-exploration. Counsellor global ratings are intended to capture the rater’s overall impression of counsellor performance during the interview. Patient behaviour may change markedly over the course of a single session, thus global patient rating reflects the highest level of self-exploration period during this session, rather than the average for the entire session.

The second pass through the tape-recordings assigned specific behaviour counts. The coder listened to the session and categorized each counsellor and patient utterance with one of the proposed code. There are 19 categories of counsellor behaviour in the MISC 2.0: advise with permission, advise without permission, affirm, confront, direct, emphasize control, facilitate, filler (i.e. salutations, pleasantries, etc.), giving information, closed question, open question, raise concern with permission, raise concern without permission, simple reflections, complex reflections, reframe, structure, support, and warn. Counsellor scores for behaviour counts are the frequencies of each behaviour category during the session. Advise with permission, affirm, emphasize control, open question, both kind of reflects, and support are described as MI-consistent skills; advise without permission, confront, direct, raise concern without permission, and warn are described as MI-inconsistent skills; facilitate, filler, giving information, closed question, raise concern with permission, and structure are neutral skills. An expert level in MI implies using twice as many reflects than questions, twice as many complex than simple reflects, and having 70% of questions being open (Miller, 2000). Patient behaviour is categorized into six kinds of “change talk” (i.e. inclination toward, or away from, the target behaviour change): (i) Ability or inability to change, (ii) Commitment to change or not to change, (iii) Desire to change or not to change, (iv) Need to change versus lack of need to change, or a need not to change, (v) Reasons to change or reasons not to change, and (vi) Taking steps toward or away from change. After categorization, each utterance is assigned a strength value ranging from 5 (strong inclination toward change) to 5 (strong inclination away from change).

Tape-recording and coding

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Patient behaviour also includes neutral or following utterances (no inclination or link with the target behaviour change) as well as patient questions. Patient scores are the average strength of each of the six kinds of change talk as proposed by Amrhein et al., (2003) and the frequency of neutral/following utterances and questions.

Data analyses
Socio-demographic characteristics, baseline and follow-up alcohol consumption data were used to compare MISC-coded BAI to non-coded BAI groups to determine if the coded findings could be generalized to the whole BAI group. Pearson’s chi-square test was used for categorical variables, while Wilcoxon’s W non-parametric test was used for continuous variables since asymmetric distributions and non-equality of variances between groups were frequently observed. As suggested by Moyers et al., (2003), intra-class correlations (ICC), were used to measure inter-rater reliability between the two coders. We used the ICC absolute agreement, two-way, mixed-effects model. ICC were categorized according to Cicchetti (1994) as excellent (0.75 and above), good (0.60–0.74), fair (0.40–0.59), and poor (less than 0.40). As the two coders independently coded each of the 97 sessions, MISC data were then averaged between coders. Descriptive statistics (mean, standard deviation, minimum and maximum) for each MISC variable were computed to globally describe BAI. Kendall’s tau-b correlations were computed between MISC measures and two outcomes (i) baseline to a 12-month difference in heavy drinking quantity, and (ii) baseline to a 12-month difference in heavy drinking episodes per month. Variables with significant bivariate associations (P<0.05) were then included in multiple linear regression models with robust standard error to take into account issues concerning heterogeneity and lack of normality. These analyses were adjusted by age, sex, and alcohol-use severity (using an AUDIT score >12) to see which variables performed best in the context of other potential predictors of behaviour change; the variables controlled for were selected on the basis of both their clinical significance and their role in prior research suggesting that certain subgroups of patients were more likely to benefit from BAI (Fleming, 1993; Smith et al., 2003; Spirito et al., 2004; Bazargan-Hejazi et al., 2005). All analyses were carried out using SPSS 14.0, except multiple linear regression analyses carried out using Stata 9.2.

RESULTS

Patient characteristics and alcohol consumption data
There were no significant differences between MISC-coded BAI and non-coded BAI samples on socio-demographic, AUDIT scores, alcohol consumption variables, or hazardous drinking criteria indicating that these two groups were similar in makeup and background, and similar on baseline and follow-up drinking outcomes (Table 1).

Inter-rater reliability
MISC variables mean scores for the two coders, and ICC values and categorization according to Cicchetti (1994) are presented in Table 2. Inter-rater reliability was globally good. Only four variables had poor reliability (confront, structure, warn, and desire to change or not to change). These variables remained included in further analyses for exploratory reasons. In the 97 tape-recordings there were less than 5 utterances observed in the direct, facilitate, filler, raise concern with permission, raise concern without permission, and reframe categories; therefore, ICCs were inapplicable, extremely low or extremely high.

Counsellor and patient communication characteristics during BAI
Descriptive statistics (mean, SD, and range) for MISC variables are presented in Table 2. Global ratings of counsellor performance indicated satisfactory levels of acceptance, empathy and MI spirit. Counsellor behaviour counts showed that counsellors often asked questions, reflected patient statements or gave information; they asked questions about as much as they reflected and were more likely to ask open rather than closed questions, and used more of the simple than the complex reflections. On average, counsellors affirmed inclination toward change by patients about four times per BAI, and gave advice (with permission of the patient) and emphasized patient control and supported patients less often. There were few MI-inconsistent techniques (advice without permission, confrontations, and warnings) observed. In general, the global performance of counsellors was motivational to some extent, i.e. counsellors affirming and reflecting well, asking open questions, and using MI-inconsistent skills sparingly, but asking many questions, making many simple reflections, and using few other MI-consistent skills. Less than 5 utterances were observed in the direct, facilitate, filler, raise concern with permission, raise concern without permission, and reframe categories. This can be explained by interviewers’ skills: counsellors were strictly trained not to use direct statements (i.e. give an order, command, or direction) and not to raise concern with or without permission, and achieved well in this task on one hand; on the other hand, to reframe seemed to be a skill that was not mastered by the counsellors. Filler is assigned for pleasantness and salutations, and as counsellor and patient already interacted during assessment procedures, those were not recorded. Facilitate statements (e.g. ‘Mm hmm’, ‘I see’) apparently have not been distinguished by the coders. These five variables were excluded from further analyses.

Patient global ratings indicated a fair degree of self-exploration. Average change talk strength showed a global inclination not to change. Negative values were found for commitment to change or not to change, desire to change or not to change, need to change versus lack of need to change or a need not to change, and reasons to change or not to change. Desire not to change was particularly strongly expressed. Another observed trend was that some patients declared having already begun to change their own alcohol consumption (taking steps toward change). Globally, they perceived themselves as having the ability to change. Other patient behaviour counts showed a great number of neutral and following utterances (i.e. not linked to an alcohol theme) but only few questions asked.
Weekly drinking quantity
Correlations between MISC data and the baseline to a 12-month difference in weekly drinking quantities are shown in Table 3. Two variables were significantly correlated with the outcome. These were counsellor level of empathy and patient average expression strength in ability/inability to change. Both variables followed the expected direction, i.e. high empathy level and strength in ability to change, correlated with greater weekly alcohol use decrease.

When introduced in multiple linear regression analyses, change in the weekly quantity was predicted by the patient's ability to change and those were all in the expected direction, i.e. counsellors using more motivational skills, while patient language showed a global inclination toward change.

Heavy episodic drinking
Table 3 also shows correlations between MISC data and heavy episodic drinking (baseline to a 12-month difference in the number of heavy drinking episodes per month). Five variables were significant: counsellor level of empathy and frequency of advise with permission and affirm, and patient average strength in ability/inability to change, and in taking steps toward change/away from change. All variables followed the expected direction, i.e. counsellors' increasing levels in empathy, and frequency of affirm and advice with permission, and patients' increasing average strength in ability/inability to change, and taking steps toward change/away from change were associated with decreasing number of heavy drinking episodes.

In the multiple linear regression model adjusting for age, sex, and alcohol use severity using AUDIT score >12 (Table 4), no variable was significant.

DISCUSSION
The goals of this study were to describe the content of BAI and to find those elements of counsellor and patient language that predicted change in alcohol consumption 1 year later. Counsellors globally adopted a motivational counselling style even if there was room for improvement in the use of specific skills, while patient language showed a global inclination not to change. Some counsellor and patient variables were correlated with change and those were all in the expected direction, i.e. counsellors using more motivational skills and patients expressing more inclination toward change were related to a greater decrease in alcohol use. When introduced in multiple regression analyses, change in the weekly drinking quantity was predicted by the patient's ability to change expression, and change in heavy drinking showed no significant association with MISC variables.
In agreement, the present study demonstrated the importance of patient commitment to change. For example, Amrhein (2003) empirically demonstrated the importance of patient commitment to change in BAI sessions some patient communication characteristics are indeed predictive of change. However, we observed change predicted by ability to change and not commitment to change, as found by Amrhein et al. (2003). Brief interventions conducted in settings such as EDs are more impersonal than in primary care and inpatient or outpatient treatment program settings (e.g. only a one-time contact with an unknown counsellor vs regular follow-up), and might make commitment given less important than the patient’s own feelings about ability to change.

Counsellor communication characteristics of counsellors and patients.

Strength of change talk best predicts weekly drinking outcome. This could be expected from MI theory (Miller and Rollnick, 2002), though process research on MI only recently showed that in BAI sessions some patient communication characteristics are indeed predictive of change. However, we observed change predicted by ability to change and not commitment to change, as found by Amrhein et al. (2003). Brief interventions conducted in settings such as EDs are more impersonal than in primary care and inpatient or outpatient treatment program settings (e.g. only a one-time contact with an unknown counsellor vs regular follow-up), and might make commitment given less important than the patient’s own feelings about ability to change.

Counsellor skills and communication characteristics of patients were both expected to be instrumental in changing drinking outcomes, so the failure of counsellor skills to show significant effects in the regression models was surprising. Several of the counsellor skills were initially related to treatment program settings (e.g. only a one-time contact with an unknown counsellor vs regular follow-up), and might make commitment given less important than the patient’s own feelings about ability to change.

Differences in the associations of BAI content with the two outcomes were interesting. Weekly drinking outcome was predicted by communication characteristic observed during BAI, while heavy drinking episodes outcome was not. Some factors not measured in the present study may be more influential in modifying heavy drinking. Perhaps heavy episodic alcohol use is a fluctuating, unstable behaviour, making changes in modifying heavy drinking. Perhaps heavy episodic alcohol use is a fluctuating, unstable behaviour, making changes in modifying heavy drinking.
### Table 3. Correlations between MISC data and alcohol use outcomes

<table>
<thead>
<tr>
<th>Counsellor</th>
<th>Weekly drinking quantity (baseline to a 12-month difference)</th>
<th>Heavy drinking episodes per month (baseline to a 12-month difference)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kendall tau-b</td>
<td>P value</td>
</tr>
<tr>
<td>Global ratings (Likert scale 1–7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acceptance</td>
<td>0.05</td>
<td>0.52</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.16</td>
<td>0.04</td>
</tr>
<tr>
<td>MI spirit</td>
<td>0.13</td>
<td>0.10</td>
</tr>
<tr>
<td>Behaviour counts (frequencies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advise with permission</td>
<td>0.11</td>
<td>0.17</td>
</tr>
<tr>
<td>Advise without permission</td>
<td>0.03</td>
<td>0.71</td>
</tr>
<tr>
<td>Affirm</td>
<td>0.07</td>
<td>0.32</td>
</tr>
<tr>
<td>Confront*</td>
<td>-0.08</td>
<td>0.33</td>
</tr>
<tr>
<td>Emphasize control</td>
<td>0.02</td>
<td>0.78</td>
</tr>
<tr>
<td>Giving information</td>
<td>-0.02</td>
<td>0.79</td>
</tr>
<tr>
<td>Question closed</td>
<td>-0.03</td>
<td>0.72</td>
</tr>
<tr>
<td>Question open</td>
<td>-0.08</td>
<td>0.27</td>
</tr>
<tr>
<td>Reflect simple</td>
<td>0.02</td>
<td>0.82</td>
</tr>
<tr>
<td>Reflect complex</td>
<td>0.08</td>
<td>0.26</td>
</tr>
<tr>
<td>Structure*</td>
<td>-0.04</td>
<td>0.63</td>
</tr>
<tr>
<td>Support</td>
<td>-0.02</td>
<td>0.83</td>
</tr>
<tr>
<td>Warn*</td>
<td>0.10</td>
<td>0.22</td>
</tr>
<tr>
<td>Patient Global rating (Likert scale 1–7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-exploration</td>
<td>0.02</td>
<td>0.84</td>
</tr>
<tr>
<td>Average change talk strength (+5 to −5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment to change or not to change</td>
<td>0.21</td>
<td>0.005</td>
</tr>
<tr>
<td>Desire to change or not to change*</td>
<td>0.01</td>
<td>0.85</td>
</tr>
<tr>
<td>Need to change/lack of need to change or a need not to change</td>
<td>0.01</td>
<td>0.90</td>
</tr>
<tr>
<td>Reasons to change or not to change</td>
<td>-0.01</td>
<td>0.93</td>
</tr>
<tr>
<td>Taking steps toward change/away from change</td>
<td>0.01</td>
<td>0.88</td>
</tr>
<tr>
<td>Behaviour counts (frequencies)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutral/follow</td>
<td>0.00</td>
<td>0.97</td>
</tr>
<tr>
<td>Questions</td>
<td>0.11</td>
<td>0.14</td>
</tr>
</tbody>
</table>

* Variable with poor inter-rater reliability. Considered only for exploratory reasons.

Patient characteristics and adjustment variables were added to the models. For example, counsellor empathy was strongly related with both outcomes in the bivariate analyses, and carries large theoretical support in the MI literature (Bien et al., 1993; Miller and Rollnick, 2002), but did not perform well in predicting positive change in the regression models. A plausible explanation for this might be that counsellor skills are correlated with patient change talk expressions, and partly depend on patient behaviours and their effect on the counsellor. These might be subtle reactions to positive change talk from patients. This might also be that counsellor communication characteristics influenced the patient, but that in the end, the patient’s own impression about change was the most important. Future research should, thus, consider trying to determine whether motivational behaviours precede or follow positive change talk utterances during BAI sessions.

Despite several strengths such as a large sample size for this kind of analyses, good global inter-rater agreement, and no differences in socio-demographic and alcohol consumption data between coded and non-coded patients allowing generalization to the main BAI sample, several potential limitations should be taken into account. The MISC instrument was designed for analyses of MI, not BAI, although common skills and a common target (behaviour change) of MI and BAI suggest that the MISC might well be used to study BAI content. Using the MISC in French might also be a concern as it is a linguistic coding instrument, developed in English and so far not validated in French. Another limitation might arise due to the nature of EDs, where time and medical constraints are quite different than those found in other settings (e.g. primary care), and might lead to specific behaviours and attitudes that unduly influence BAI. Self-selection bias may have been introduced by assessing only those patients who were willing to participate and have their data recorded, and to cooperate with a follow-up 1 year later.
Another caveat is that we did not measure patient level of readiness to change before intervention. This might have permitted us to distinguish between what arose from the interaction and what came from the patient’s prior level of motivation. Future research should take this into account and introduce level of motivation as part of baseline assessment measures.

Nonetheless, using the MISC to describe BAI content appeared as a promising approach. It provides a description of the communication content of BAI and some clues as to how this might help predict changes in drinking outcome. The present study suggests that the more the patient expresses ability to change during the intervention, the more the alcohol use will decrease. If the role of the counsellor is still not clearly established, this does not diminish in any case the importance of BAI, since an environment where patients can begin to think and talk about changes may be critical. Further research is needed to stress BAI content as a sequence in intervention course. Refining the instrument itself, perhaps by adapting it to certain specific features of BAI and by creating summary measures that correspond clearly to BAI content, could potentially be of great use.

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### REFERENCES


