

MOTIVATIONAL INTERVIEWING WITH INJURED ADOLESCENTS IN THE EMERGENCY DEPARTMENT: IN-SESSION PREDICTORS OF CHANGE

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Abstract. This paper reports the process outcomes of a randomized trial of a one-session Motivational Interviewing (MI) intervention¹ conducted with youth (12–20 years) in a hospital emergency department (ED) while undergoing medical care for an injury. The interventions targeted six behaviors placing youths at high risk for injury. Those youth whose counselors perceived their readiness to increase between the start and end of the MI session were 4.5 times more likely to have improved their use of seat belts 6 months later compared with youth who were not perceived to have increased in readiness during the session.

Keywords: Injury prevention, motivational interviewing, behavior change, counseling.

Introduction

Prior randomized trials of MI interventions with injured youth undergoing emergency department (ED) treatment have successfully targeted single, high-risk behaviors including smoking (Colby et al., 1998) and harmful drinking (Monti, Colby, Barnett, Spirito, & Rohsenow, 1999). Unfortunately, high risk behaviors resulting in the traumatic injury of youth often occur in clusters. We used a brief screening and MI intervention protocol to address during an ED visit multiple high-risk behaviors. As documented elsewhere (Johnston, Rivara, Droesch, Dunn, & Copass, 2002), both groups reported improvements compared to baseline in all six risk behaviors when interviewed 6 months post-injury: wearing seat belts, wearing bike helmets, carrying weapons, binge drinking, driving after drinking, and riding with a driver who had been drinking. However, at 6 months post-injury, 34% of intervention group youth improved seatbelt use compared to 23% of the control group. The relative risk of a positive change in seatbelt use was 1.47 (95% CI 1.09, 1.96). Similarly, for bicycle helmet use, 24% of those receiving MI versus 12% of controls improved, (RR = 2.0 95% CI 1.00, 4.00). Seventy-one percent of youth who received an intervention discussed only one of the six behaviors during their session with a counselor. There were no differences in behavioral outcomes between the four MI counselors. In the current paper, we report process analyses for seat belt use, because the number of youth receiving seatbelt interventions and providing

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¹A counselor manual of this intervention is available from the first author. It provides full detail on counselor training, intervention operations, clinical content, and data on the logistics of the screening and intervention protocol.

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follow-up outcome data was adequate for analyzing in-session, process predictors of behavior change.

To better understand the MI counseling process, other investigators have recently examined the patterns of “commitment language” by clients during clinical sessions as predictors of future, intentional change. Amrhein, Miller, Yahne, Palmer and Fulcher (2003) reported that over the course of a single MI session a steady increase in the strength of commitment language (“I’ll deal with this sometime” versus “I’ll take action now”) correctly predicted the drug using status of 85% of substance abusing clients one year later. In the ED setting, if counselors could rapidly assess the likelihood of change after a single counseling session, they could then accurately refer those youth needing further MI to prepare them for change.

Our counselors found that, as with many populations not seeking help for behavior change, eliciting commitment statements from youth during these opportunistic interventions was their most challenging task. Each encounter left counselors with strong clinical opinions on the likelihood that a youth might change in the future. We investigated whether these clinical opinions, operationalized as their ratings of the youth’s readiness before and after the MI session, would accurately predict behavior change 6 months after the encounter.

Method

After consenting and being screened by paper and pencil to assess the prevalence of the six high-risk behaviors, youth received their interventions in the ED before leaving the hospital. Immediately after these encounters, the counselors retrospectively rated the youth’s stage of change readiness at both the start and end of the session (Prochaska & DiClemente, 1986). Youth were classified as “improved” in readiness during the session if their counselor rated their stage of readiness higher at the end of the session than at the start. They were rated as “not improved” if readiness ratings at the start and end of the session were the same or worse. At 6 months, youth were classified as “improved” in behavior if they reported to a blinded interviewer any improvement on a Likert scale rating their frequency of wearing seatbelts as “never”, “sometimes”, “usually”, or “always”.

Counselors were trained by their supervisor (first author) to assess readiness by attending to statements about change that youth made during sessions. *Pre-contemplators* expressed few or no concerns about the status quo and no intention to change in the near future. *Contemplators* expressed ambivalence about their status quo or change and a vague intention to change, but little or no planning. Youth in the *Preparation* stage participated in action planning and expressed at least a weak intention during the session to take action. Youth were in *Action* if they had already changed the behavior before the injury and in *Maintenance* if they had maintained this change for at least a month before injury (some interventions were done preventatively with youth who had already changed or who did not endorse a given behavior but wished to discuss this risk behavior with the interventionist). The supervisor and each counselor listened together to a convenience sample ($n = 22$) of session audiotapes used to monitor MI integrity. Each tape was played in its entirety and discussed individually with counselors. These discussions included reaching agreement on the youth’s readiness at the start and end of sessions. The number of audible audiotapes of sessions was too small to code and analyze client statements.

To assess whether MI had a better effect on risk behavior when the behavior discussed happened to match the cause of the youth’s injury, we reviewed medical records to determine

the mechanism of injury. Youth injured in motor vehicle crashes and also received seatbelt interventions were considered “matched”.

Results

Sample and intervention characteristics

Of the 187 seatbelt non-users in the MI intervention arm of the study, 127 received seatbelt interventions and 6-month follow-up data were collected from 97 (76%) of these youth, who constitute the sample. The mean age of subjects was 16.79 (*SD* 2.46); 34% were female, and 64% were in school. Twenty-seven percent of these youth endorsed 0 risk behaviors on the screening questionnaire (but received preventive interventions), 30% endorsed one risk behavior, and 43% endorsed more than one. Twenty-four percent of the interventions covered more than one risk behavior. The counseling sessions lasted approximately 20 minutes, ranging from 5 minutes to over one hour. Thirty-four percent of youth receiving seatbelt interventions were injured in motor vehicle crashes, but there were no differences in behavioral outcomes for this “matched” variable.

Clinical impressions of readiness improvement

There were no differences in counselor ratings of readiness to change seatbelt use by counselor nor by any demographic variable. At 6 months, 38 (72%) of youth whose counselors had rated their readiness as improved during the session and 7 (16%) of readiness non-improvers had increased their seatbelt use ($p < .001$). The relative risk of improving seatbelt use was over four times greater for perceived readiness improvers [IRR = 4.51, 95% CI 2.01, 10.09]. Counselors’ clinical impressions of improvement or no improvement in readiness during the session correctly classified 72% of improvers and 84% of non-improvers in seatbelt use 6 months later. The sensitivity and specificity of these assessments was 70% and 84%, respectively.

Conclusions

MI was successful in improving seatbelt usage among youth, but the strength of this effect was not influenced by which counselor did the intervention, any demographic variables, nor whether the intervention topic matched the mechanism of injury. The ability to predict which youth need further counseling beyond an ED intervention would improve patient care. Standardized readiness questionnaires administered before and/or after brief interventions have demonstrated mixed results in predicting behavior change and would require too much time for assessing multiple risk behaviors in an ED as a daily clinical service. We found that our counselors’ impressions, rapidly formed while actually doing the interventions, had a level of accuracy in predicting behavior change comparable to Amrhein’s objectively coded utterances. This finding is promising but tentative.

Because we did not analyze audiotapes of these sessions, we do not know exactly which client statements or other behaviors counselors were actually attending to when they made their “readiness” assessments. Was it commitment statements that were most salient to them? Statements of needing to change or confidence in ability to change? The lack of negative statements? Were all counselors attending to the same things? Future investigations should

identify the client language that influences these counselor assessments of readiness. One could then test whether this language can be strengthened during the session by using MI strategies and then, most importantly, whether these strategies could enhance subsequent behavior change.

Acknowledgements

Support: EMS-C Targeted Issues Grant from HRSA/MCHB (6H34 MC 00068-02). Dr Johnston is supported by an NICHD Career Development Award (5 K23 HD01341-02).

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