

## YOU CAN DO IT! – REDUCING THE RISK OF ALCOHOL-EXPOSED PREGNANCIES USING MOTIVATIONAL INTERVENTION

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**A CRITICAL REVIEW OF “Reducing the risk of alcohol-exposed pregnancies: a study of a motivation intervention in community settings.”<sup>1</sup> *The Project CHOICES Intervention Research Group. Pediatrics 2003;111(5):1131-35***

The deleterious effects of chronic alcohol consumption during pregnancy have been well documented over the past 30 years.<sup>2,3</sup>

Despite the clear characterization of alcohol as a teratogen and various attempts at mass public education against alcohol use during pregnancy, there was substantial increase in alcohol use amongst women during pregnancy from 1991-1995, as shown by the Centers for Disease Control (CDC).<sup>4</sup> Further, many women who are regular drinkers often do not know that they are pregnant until several weeks or even months into their pregnancies. Given the possibility of inadvertent fetal exposure to alcohol *in utero*, intervention prior to conception can be considered a prudent course of action.<sup>1</sup>

The specific aims of this investigation, a part of project CHOICES, were to test the feasibility and efficacy of motivational intervention (MI) in reducing the risk of alcohol exposed pregnancies (AEPs) in a group of women determined to be at high risk for AEPs, and to assess the ability of MI to target and treat more than one behaviour at a time. The study intervention attempted to either reduce the amount of alcohol being used by the women or increase their effective use of contraception by the end of the study period.

Informed consent was obtained from a total of 190 women who were enrolled from several different demographic groups. Most of the women enrolled were either of African-American (45.3%), or Caucasian (37.4%) descent with an average age of 30.9 years. Study subjects were primarily recruited from a large urban jail (54 women). Other sites of recruitment included an urban primary care medical practice, two drug and alcohol abuse treatment centers, one hospital

based obstetrics/gynecology ward and a community based primary care facility. These facilities were located throughout the United States.

The authors prescreened all study subjects to determine each woman’s individual risk for an AEP. Patients were screen for the severity of their alcohol intake using the Alcohol Use Disorders Identification Test (AUDIT) and temptation to drink was assayed via an adapted Brief Situational Confidence Questionnaire (BSCQ-T, BSCQ). Contraceptive use and personal views on contraception were also collected. Additionally, an obstetrical and gynecological history was taken from all study patients. The authors believed that prescreening of this nature was necessary to individualize MI sessions to each patient. These data were also used later in the authors’ analyses to identify factors predictive of the success of MI in reducing the risk of an AEP in these patients.

All study patients, based on prescreening studies, were determined to be at high risk for an AEP. Further, all women included in the study were required to be fertile and must have reported drinking > 7 standard drinks, or ≥ 1 binge drinking episode (≥ 5 standard drinks at one sitting) at some point within the 3 months immediately prior to the investigation. The women were also required to have had sexual intercourse with a man and have not used (or ineffectively used) contraception within the 6 months immediately prior to the study.

The MI intervention consisted of a total of five sessions, of which four were devoted to decreasing alcohol intake and of which the last was devoted to use of contraception. Through the sessions, the authors provided information on risks associated with alcohol use during pregnancy and motivated the women to change their risky behaviours by emphasizing self-efficacy. The goals of these sessions were to decrease the temptation of these women to engage in risky behaviours (alcohol consumption and

unprotected sexual intercourse, in this case), and increase their confidence to avoid such behaviours. Patients, through this approach, were encouraged to set their own goals and develop their own plans for change.

All MI sessions were conducted by either master or doctoral-level psychologists or trainees. Further, all medical history and physical examinations were conducted by licensed medical personnel.

Data on risk status were collected at three and 6 months post intervention. The three month follow-up was a brief telephone interview, whereas the 6 month follow-up was an in-person consultation. The primary outcome measure reflecting the success and feasibility of MI was risk status at the 6 month follow-up.

The authors conducted extensive analyses to ensure that there were no statistically significant differences between the groups of women who completed and those who did not complete the 6 month follow-up.

Upon analysis of their data, the investigators found that of the 190 women who began the study, 143 women completed the 6 month assessment. Of these women, 98 (68.5%) successfully reduced their risk for an AEP. The authors found that 18 (12.6%) women reduced their AEP risk by reducing only their alcohol consumption, while 33 (23.1%) other women reduced their likelihood of conception only. It should be noted that a large proportion of their study population, 47 women (32.9%) reduced their drinking and minimized their likelihood of conception.

It is interesting to note that of the women who were unsuccessful in reducing their risk of an AEP, the vast majority (75 of 78) reported one or more binge drinking episodes before the end of the 6 month follow up. Also interesting is the authors finding that only 12 of the 80 women who reduced their risk of pregnancy did so via abstinence.

The authors confirmed that there were no significant baseline differences between those women who completed the 6 month assessment and those who did not. Further, the authors found that low baseline AUDIT and BSCQ-T scores were significantly associated with a successful reduction in the risk of an AEP following MI

therapy.

Based upon the data gathered, the authors concluded that MI was successful in reducing the risks of AEPs among their study subjects, and that MI successfully targeted and changed more than one behaviour over the course of their study. Their conclusions were based on the finding that 68.5% of their patients were no longer at risk for an AEP following MI therapy. The authors further contend that the addition of all women who did not complete the 6 month follow-up to the group who did not successfully reduce their risk of an AEP would not invalidate their conclusions; in this case, over half of their subjects (51.6%) would still have successfully reduced their risk for an AEP via MI therapy.

This study has several notable strengths in its methodology. First, the authors chose to include only women who were determined *a priori* to be at high risk for AEPs. As such, degree of risk upon which MI therapy was tested represented a true test of the efficacy of the MI approach. This in itself may be considered a robust choice from a methodological perspective, however it did not allow for a randomized control group. To their credit though, the authors were cognizant of this methodological weakness and showed that there were no statistically significant differences in various relevant characteristics between the group of women who did complete the 6 month follow-up and those that did not. It should also be noted that the authors examined the effect of the completion of all four ethanol related MI sessions on their outcomes and found that the completion of all four sessions was not a significant predictor of success of MI therapy.

Second, patients were recruited from a variety of institutions, in geographically diverse locations throughout the United States. Thus, the authors ensured the participation of women from various socioeconomic, educational and cultural backgrounds. Such sampling allows for generalization of the results. It should be noted however, that 54 study participants were obtained from an urban jail, while only 11 were recruited from the one of the primary care facilities. A more even balance among patients recruited from the various institutional settings would have served the authors better, in terms of their desire for a truly representative population.

Finally, the authors chose to assay temptation

towards alcohol consumption as well as confidence to cease alcohol intake at baseline using the AUDIT and BSCQ-T surveys. Both of these surveys have been validated through previous work,<sup>5,6</sup> and thus were dependable tools with which to obtain data. Given the established validity of both of these experimental tools, one can have more confidence in the authors' conclusions. The authors did neglect, however, to provide any reference for a validated survey used to assess attitudes towards contraception (one the baseline variables tested) in their study.

There were two notable limitations of the methodology used in this investigation. The most problematic of these limitations was the fact that all data with respect to the success of MI therapy in reducing the risk for AEPs was self-reported. As is the case of most self-reporting scenarios, there is the risk of reporting bias associated with the data obtained. Such a bias in this case decreases the validity of the conclusions made based on the experimental data. However, the authors do provide reference to other investigations where self-reported data on alcohol consumption has accurately reflected biochemical measurements of the same.

Monetary compensation (cash) was provided to the study participants based on the number of sessions they attended. Such compensation may also have inadvertently biased the data collected, as women may have felt obligated to respond to the authors' questions in a manner suggesting therapeutic success. It is critical to note, however, that this investigation was a pilot study and was being used as a prelude to a randomized control trial. In the context of a pilot study, the self-reporting methodology used and the results obtained can be considered satisfactory to warrant further study.

Another limitation inherent within the methodology of this investigation pertained to the time point at which the final follow-up was conducted. By conducting the final follow-ups at 6 months following the completion of the investigation, the authors limit the validity of their conclusions regarding MI. It is known that treatment centers and various support groups, such as Alcoholics Anonymous, require their

patients to attend meetings and support sessions well beyond 6 months post therapy. As such, the 6 month follow-up would seem rather insufficient to assess the long-term impact of MI therapy on the reduction of risk of AEPs. However, it should be noted again, that this investigation was a pilot study.

One of the major aims of this investigation was to show whether or not MI could target more than one behaviour at a time. The authors choices of alcohol intake and unprotected sexual intercourse as behaviours to be treated using MI was appropriate considering their respective contributions to AEP risk. However, the MI procedure used in this investigation separated the alcohol and contraception counseling sessions such that all counseling on a given behaviour was completed before counseling on a second behaviour commenced. Such a design does not necessarily confirm that MI can successfully target more than one behaviour at a given time, but instead only suggests that it can be used consecutively to target two different behaviours with minimal time between counseling sessions. To their credit, however, the authors were aware of and cited both of the above methodological limitations in their manuscript.

This investigation centered upon the use of an individually tailored motivational intervention to reduce the risk of alcohol exposed pregnancies in a group of women. The intervention aimed to decrease both alcohol intake and unprotected sexual intercourse among the study subjects all of whom were at high risk for an AEP. Through their investigation, the authors of project CHOICES showed that MI was indeed successful in decreasing the risk of AEPs among two-thirds of their study patients.

Given the study limitations cited above, one must await documentation of the ability of MI to affect a long-term change in AEP risk and its ability to target more than one behaviour concurrently. The authors plan further study in the form of a randomized control to explore the potential of this innovative and preventative measure to reduce the risk of fetal alcohol exposure and its related teratogenic effects in women at high risk for alcohol exposed pregnancies.

## REFERENCES

1. The Project CHOICES Intervention Research Group. Reducing the risk of alcohol-exposed pregnancies: A study of a motivational intervention in community settings. *Pediatrics* 2003;111(5):1131-35
2. Jones KL, Smith DW. Recognition of the fetal alcohol syndrome in early infancy. *Lancet* 1973;2:999-1001.
3. Gladstone J, Nulman I, Koren G. Reproductive risks of binge drinking during pregnancy. *Repro Tox.* 1996;10(1): 3-13
4. Centers for Disease Control and Prevention. Alcohol consumption among pregnant and childbearing-aged women-United States, 1991 and 1995. *MMWR Morb Mortal Wkly Rep.* 1997;46:346-360
5. Bohn MJ, Babor TF, Kranzler HR. The alcohol use disorders identification test (AUDIT); validation of a screening instrument for use in medical settings. *J Stud Alcohol.* 1995;56:423-432
6. Breslin FS, Sobell LC, Sobell MB, Agrawal S. A comparison of a brief and a long version of the Situational Confidence Questionnaire. *Behav Res Ther.* 2000;38:1211-1220