Using One Question to Identify Women at Risk for an Alcohol-Exposed Pregnancy

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Context: Consumption of 8 alcoholic drinks per week or 5 alcoholic drinks on one occasion by a pregnant woman can affect the developing fetus. However, it can be difficult to determine which patients are at risk.

Objective: To evaluate how well the answer to a single question about binge drinking could help identify women at risk of an alcohol-exposed pregnancy (AEP).

Methods: Using data from a study of methods to prevent AEPs, the authors compared the efficacy of self-reported answers to a screening question about binge drinking (5 or more standard drinks on one occasion) within the past 90 days with answers to a question about drinking quantity (weekly consumption of 8 or more standard drinks) within the past 90 days.

Results: The participants were 354 women of childbearing age who met screening criteria for being at risk of an AEP. The binge question was answered positively by 346 women (97.7%) at risk, while only 209 women (59.0%) reported that they drank 8 or more drinks in a week.

Conclusion: A single question about binge drinking can effectively and quickly identify the majority of women at risk of an AEP.

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A critical first step in preventing AEPs is to identify women who are at risk. As noted in the report of the National Task Force on Fetal Alcohol Syndrome and Fetal Alcohol Effects, "physicians often have difficulty identifying problematic alcohol use," especially among women, and screening instruments developed to identify alcohol problems are less sensitive in identifying risk of AEPs. Although guidelines exist for evaluating risk in terms of contraceptive practices and frequency and intensity of drinking, several barriers have been identified (eg, lack of time, no reimbursement, lack of training, no perceived need) to explain why screening and counseling related to women’s reproductive health is not more prevalent. Moreover, maintenance of screening practices can also be difficult. For example, in one study it was found that primary care physicians could be trained to effectively screen their patients for unhealthy behaviors, including risky alcohol use, but that a year after training their screening levels had returned to baseline. Consequently, one means of identifying women at risk of an AEP is to make screenings uncomplicated and expeditious.

The objective of the present study was to determine how well a single question inquiring about binge drinking (consumption of 5 or more drinks on one occasion) could identify women at risk of an AEP due to their drinking.

Methods

The Institutional Review Board of Nova Southeastern University in Fort Lauderdale, Florida, approved the present study, and the subjects consented to participate in the study. Participants were part of a study to evaluate a mail-based intervention to prevent AEPs. The details of the interventions are not relevant to the present report, because this report is restricted to an analysis of assessment data. Women responded to media solicitations (eg, posters, flyers, and newspaper advertisements) placed throughout Florida from 2005 through 2007 and that stated, “If you drink alcohol, even in small amounts, you may be eligible to participate in an important research study.” Respondents were contacted and screened by telephone for eligibility (ie, at risk for an AEP) on the basis of the following criteria: the subject had to be of child-bearing age (18-44 years) and in the 90 days prior to screening (a) had heterosexual vaginal intercourse, (b) used no or ineffective contraceptive methods, and (c) either consumed an average of 8 or more standard drinks per week, had engaged in binge drinking (ie, consumed 5 or more standard drinks on one occasion), or both. A standard drink was defined as 14 g of any ethanol (eg, 12 oz of 5% [alcohol] beer, 5 oz of 12% [alcohol] wine, or 40% [alcohol] hard liquor or spirits). Eligibility according to drinking criteria was determined during the phone screening by using the Quick Drinking Screen, a self-report measure, and Quick Drinking Screen data were used in the analyses.

The women were randomly assigned to one of two interventions; one group received personalized feedback about their risk, while the other group received a pamphlet titled, “Think Before you Drink,” published by the Centers for Disease Control and Prevention (CDC). As part of the study procedures, eligible participants were sent assessment materials that they completed and returned by mail. These materials included a brief questionnaire to gather demographic, drinking, and health behavior information, as well as validity checks on reported contraceptive practices or their absence. These materials elicited more detailed data about participants’ drinking habits, and the health behavior questions broadened the focus beyond drinking and birth control practices. The assessment included the Timeline Followback, a psychometrically sound assessment tool that uses a retrospective self-report calendar format. The Timeline Followback provided a validity check on eligibility screening by confirming that participants exceeded the drinking minimum on both the screening and the assessment inquiries. Participants also took part in a 6-month follow-up interview to determine the relative efficacy of the two interventions for the risk of AEP. Because AEPs can be avoided by reducing drinking, effective contraception, or both, data were gathered on drinking and birth control practices over the interval.

Participants were paid $20 after completing the assessment materials and an additional $20 after completing the 6-month follow-up interview.

For data analysis, the percentage of women who fulfilled one of the two risk-drinking criteria (binge drinking, average weekly consumption) was calculated, and this analysis allowed an evaluation of each measure’s sensitivity for identifying the risk of AEP.

Results

A total of 354 women were eligible and were included in the study. The mean (standard deviation [SD]) age of the 354 participants was 26.34 (6.96) years, and 198 participants (55.9%) were white, 88 (24.9%) were Hispanic, 38 (10.7%) were black, 12 (3.4%) were Asian, and 18 (5.1%) were of other race or ethnicity. One hundred forty-five participants (41.0%) were students. Among nonstudents (n=209), 168 (80.4%) were employed full- or part-time, and 92 (46.0%) of 200 nonstudents for whom occupational status was available were working in white collar jobs. A total of 332 women completed the materials in English, and the other 22 completed the materials in Spanish. These groups were combined for the present analysis, as pooling their data did not affect the results.

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Sobell et al • Special C om m unication

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about binge drinking days into their regular medical
assessment. When the present study was conducted, the
existing epidemiologic data suggested a risk criterion of 5 or
more drinks on one occasion.6 More recently, the CDC adopted
a threshold level of 4 or more drinks on one occasion.14,25 The
criterion of 5 or more drinks captured all but 2.3% of the cur-
rent study participants, but if it had been lowered to 4 or more
drinks, the use of a single question would have had even
greater sensitivity. To be consistent with the current CDC rec-
ommendation, the inquiry should be adjusted to reflect the new
criterion: “How many days during the past 90 days did you
consume 4 or more drinks in 1 day?” A woman who responds
that she drank 4 or more drinks on any 1 day would be con-
sidered as possibly at risk of an AEP. The use of a binge cri-

tion also is consistent with research summarized by Maier and West,26 suggesting that the blood alcohol concentration of
the mother (reflected more in binge drinking) rather than the
overall exposure to alcohol (reflected in drinks per week) is
more likely to pose a risk to the fetus. It also should be noted
that there were a few women (2.3%) whose alcohol con-
sumption did not satisfy the binge drinking criterion but
whose weekly consumption would put their pregnancy at
risk. Such cases could be identified by asking the binge drinking
question first and then asking women who screened nega-
tive on the binge drinking question about their weekly con-
sumption.

While it might seem that use of a single question is not suf-
cient to identify women at risk of an AEP, use of a single
question is common when screening for alcohol problems
generally.18,27-29 Since many women could drink enough to
be at risk of an AEP yet not meet criteria for an alcohol use dis-
order, it is vital to have a screening measure that is sensitive
to risk of AEP. Importantly, compared with use of longer
screening instruments, use of a single, minimally intrusive
question to identify women possibly at risk of an AEP could
easily be incorporated into routine health care screenings,
where time is at a premium.

Discussion
The present findings suggest that asking a single question
about binge drinking is a quick and highly sensitive method
for identifying women whose alcohol use would place them
at risk of an AEP if they were not using contraceptives effec-
tively. Thus, it is recommended that all health care profes-
sionals, particularly those in obstetric/gynecology settings
who are treating women of childbearing age, incorporate a
question about binge drinking days into their regular medical
The Table presents a contingency table based on data from
the Quick Drinking Screen reports and shows the percentage
of women at risk for an AEP who reported in their assess-
ment that they drank 8 or more standard drinks per week on
average or that they engaged in at least 1 day of binge drinking
(defined as 5 or more standard drinks on one occasion) during
the 90 days prior to the study. This cross-tabulation clearly
demonstrates that the binge drinking question identified almost
the entire sample of women (346 women [97.7%]) at risk of an
AEP; by contrast, their answers to the question about weekly
consumption identified only 209 (59.0%) of the at-risk women.

354 participants reported drinking a mean (SD) of 2.95
(1.59) days per week and consuming a mean (SD) of 3.81
(1.83) drinks per drinking day in the 90 days preceding the
intervention.

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Table

Number (% ) of W omen W ho W ere at Risk for A lcohol-Exposed
Pregnancy by Weekly Consumption and Binge Drinking

<table>
<thead>
<tr>
<th>Average Weekly Consumption of 8 or More Standard Drinks*</th>
<th>Binge Drinking</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Total</td>
</tr>
<tr>
<td>Yes</td>
<td>201 (56.9)</td>
<td>8 (2.3)</td>
<td>209 (59.0)</td>
</tr>
<tr>
<td>No</td>
<td>145 (41.0)</td>
<td>0</td>
<td>145 (41.0)</td>
</tr>
<tr>
<td>Total</td>
<td>346 (97.7)</td>
<td>8 (2.3)</td>
<td>354 (100.0)</td>
</tr>
</tbody>
</table>

* A standard drink is defined as 14 g of any ethanol (eg, 12 oz of 5%
[alcohol] beer, 5 oz of 14% [alcohol] wine, or 1.5 oz of 40% [alcohol] hard
liquor or spirits).

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