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Feasibility And Acceptability Of A Pediatric Emergency Department (PED) Alcohol Prevention Intervention For Young Adolescents

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Abstract

Objective—To determine feasibility and acceptability of a brief pediatric emergency department (PED) prevention intervention to delay/prevent initiation of alcohol use in 12–14 yrs olds.

Methods—Medically stable 12–14 yr olds presenting to the PED who were accompanied by a parent and who had not initiated alcohol use were eligible. Adolescents-parent dyads completed a computerized assessment and were randomized to either Brief Prevention Intervention (BPI) or Enhanced Standard Care (ESC). BPI families participated in a PED-based motivational interviewing and skill building-based session with a trained counselor. BPI parents had telephone boosters at 1 & 3 months. ESC families received standard care and adolescent substance use pamphlets. All dyads completed 6 month follow up assessments to assess alcohol use-related outcomes.

Results—228 families were approached, 122 were eligible and 104 were enrolled (85%). Mean youth age was 13 years (SD =.83), 51% were female, and 90% of parents were females. Of the 104 enrolled, 5 withdrew; 99 (94%) completed the assessment battery in the PED in less than 30 minutes. All BPI dyads completed the counseling session in the PED. However, only 53% of BPI parents completed the booster telephone sessions. BPI acceptability items were rated favorably (82%–100%) by both parents and adolescents. There were no differences between the BPI and ESC on substance-related outcomes, although the study was not adequately powered for this purpose since it was designed as a feasibility study.

Conclusions—A BPI in the PED is both feasible and acceptable but phone boosters proved less feasible. Larger samples and further study are needed to identify efficacy of the BPI in delaying onset of alcohol use in teens.

Keywords

prevention; emergency department; adolescent; alcohol; substance abuse

Introduction

Both alcohol use and high-volume alcohol use increase over the course of adolescence¹, yet the most dramatic increase in alcohol use appears to occur in relatively young adolescents, typically between 7th and 9th grade². Evidence suggests that the earlier one initiates alcohol use, the higher the likelihood of alcohol related problems and disorders later in life^{3–5}. Consequently, early intervention has been recommended for adolescents who abuse substances⁶. The emergency department (ED) is one health care setting in which brief interventions for an alcohol-related incident have proven useful^{7, 8}.

Although intervention with substance-using teens remains an important public health objective, the prevention of early substance use in young adolescents is equally, if not more, important. By delaying or preventing alcohol and other substance use among younger adolescents, the number of adolescents who continue on to develop substance use disorders may be reduced. The majority of prevention programs have been school-based^{9, 10} and have demonstrated consistent but modest effects on substance-use initiation^{11–15}. One possible reason for these modest effects is that most school-based prevention programs involve primarily the child and do not address parent-related variables, such as communication and monitoring, that are strongly related to adolescent substance use¹⁶. In fact, programs that involve family-based skills training that are intended to increase protective factors and reduce risk factors have shown more success than teen-alone programs^{9, 10}. However, engaging parents in school-based prevention efforts is difficult and those who do attend are frequently the ones who need the program least¹⁷.

Given the limitations of school-based prevention interventions, it is necessary to identify and test additional sites for alcohol prevention interventions, particularly those that permit easy access to parents. To date, few if any alcohol prevention interventions have been conducted with adolescents in medical settings. The pediatric emergency department (PED) represents one such site and has been identified as an important prospective site for preventive services in youth¹⁸. As many as 1.5 million adolescents use the nation's emergency departments as their only source of care and these individuals are more likely to report substance use, worse health status, and mental health problems, highlighting a role for PED-based prevention¹⁹.

While a PED visit may be a novel and opportune time for interventions and prevention interventions, the feasibility of such interventions requires that they be succinct and minimally disruptive to families and staff. Brief interventions (BI) are particularly well suited for the PED as they can be delivered in an effective manner without seriously disrupting patient care and flow⁸. NIAAA has provided recommendations for such brief alcohol interventions in primary care²⁰. Further, the American College of Surgeons Committee on Trauma requires that Level 1 and Level 2 trauma centers have a mechanism to provide alcohol screening and that Level 1 trauma centers provide brief interventions for screen-positive patients. As pediatric trauma centers enact this model, providing a

prevention intervention for adolescent ED patients who screen negative may become more common²¹. The present study was designed to:

1. Examine the feasibility of implementing a brief PED-based prevention intervention with follow-up boosters to delay or prevent the initiation of alcohol use in young adolescents, 12–14 years old.
2. Preliminarily assess the effects of a brief PED-based intervention on parental monitoring and communication, adolescent peer influence on adolescent substance use, and adolescent intentions on future substance use.
3. As a secondary outcome, assess the effects of the intervention on adolescent initiation of alcohol use. We anticipated that given the short duration of the follow-up period (6 months) that alcohol initiation would be low.

Methods

Participants

Adolescents, age 12–14, who were being seen in a PED in the Northeast U.S. for a non life-threatening injury or illness, were medically stable, and had a parent present in the PED, were approached to participate. For a parent/adolescent pair to be eligible, the youth had to live with the parent (defined as biologic parent, other relative, or adoptive parent) at least 50% of the time and the child had to report not having initiated alcohol use, with the exception of an occasional sip offered by parents at a family or religious occasion or only having had one drink of alcohol in their lifetime.

Procedure

Eligible participants were identified by on-site study staff. After initial PED triage, parents and adolescents in the 12–14 year age group were given separate, brief written descriptions of the study to read. Subsequently, interested parents and adolescents were asked to give verbal consent/assent and then to complete a brief, non-identifiable eligibility screening form. Adolescent/parent pairs who met inclusion criteria then provided written consent and assent. Recruitment and study procedures occurred during times when the patient and family were waiting to be seen by a PED clinician or waiting the results of testing. Procedures were designed to minimize interference with PED care and patient flow.

After completion of informed consent and assent procedures, parents and youth were asked to independently complete a brief (15–30 minute) assessment battery. To ensure confidentiality and to encourage more honest responses, adolescents and parents completed the assessments in the same room but on separate tablet computers. The eligibility screening form and assessment protocol were administered via an interactive program on a tablet computer which had programmed skip patterns and value ranges for ease of administration.

Following completion of the baseline assessment, families were randomized to either the experimental condition, Brief Targeted Prevention Intervention (BPI), or the comparison condition, Enhanced Standard Care (ESC). All study procedures were approved by the

hospital Institutional Review Board. Parents and adolescents were each compensated \$40 for the time it took to complete baseline assessments.

Conditions

1. Brief Targeted Prevention Intervention (BPI) Group—This session, which took between 25 and 40 minutes, was directed primarily at parental monitoring and the importance of parent-adolescent communication as the precursor to successful monitoring. The session took place between clinical procedures in the PED patient room or after the patient received their medical care in a private counseling room within the PED. Procedures did not interfere with standard medical care. The primary goal of the prevention session was to support appropriate parenting and provide motivation to change ineffective parenting. The counselor assumed the role of a collaborator in this change process²². The BPI reviewed important components of successful parenting using a Motivational Interviewing (MI) ²² style, including placing an emphasis on the parent's own responsibility and choice; providing advice on how to change if given permission for such advice by parents; and attempting to increase self-efficacy with regard to parents ability to change^{23, 24}. While the primary focus of the intervention was the parents, adolescents were engaged in these sessions to promote their involvement in the monitoring and communication process.

A Masters-level, trained counselor, blind to baseline assessment results conducted sessions. The content of the intervention was developed and refined in an initial open trial with 12 families. In the final version, the counselor started each session with normative information regarding the characteristic escalation in alcohol and other drug (AOD) use rates from 6th through 12th grades. Then the counselor reviewed four areas of family functioning: expectations regarding alcohol and other drug use, limit setting, supervision/monitoring, including the role of peers and siblings in adolescent AOD use, and parent/teen relationships/ communication. After discussing basic information about each of these areas, the counselor noted any discussed incongruity between parental and adolescent responses with regard to each of the four areas of family practice. Positive aspects of parenting style were emphasized to instill parent confidence and the adolescent was asked to discuss his/her understanding of his/her parents' expectations and rules.

A primary focus of the session was on parental monitoring. Examples of common situations (e.g., going to parties without parental supervision) were used to discuss key parenting practices and the importance of generating plans for how to deal with these situations if and when they were to arise in the future. Information on how to monitor for AOD use, as well as how to monitor for whereabouts, was presented. The technique of monitoring the 5 W's (Who, What, Where, When, and Why) was introduced. Peers and siblings were presented as potential influences on teen AOD use that should be included in parent monitoring strategies. At the conclusion of this session, the counselor worked with the parent and adolescent to develop a brief, written "Family Agreement" regarding communication, family rules, expectations and supervision. Sample family agreements included having family dinners once per week, checking in more often with each other, changing the way parents and teens talk to each other, and specifying consequences for breaking family rules.

Booster Phone Sessions and Mailings (BPI only): Parents in the BPI condition received a brochure about parental monitoring in the mail at 1 month and another about parent-teen communication at 3 months following the BPI in the ED to supplement the prevention intervention. Parents in the BPI group also received two telephone booster calls by the same counselor who met with them in the PED. In the first booster session phone call at 1 month, the counselor reviewed the goals set in the Family Agreement developed in the PED. At the conclusion of the first phone booster, goals were set for the next two month period. The subsequent booster session, at 3 months, reviewed the Family Agreement developed in the preceding booster session. The counselor used the same motivational approach to explore parental implementation of the plan. If a parent was unable to be contacted for the first booster, they were still eligible to participate in the second booster.

Training and Supervision of Counselors: Counselor training started with an MI workshop prior to instruction in the PED protocol and the booster sessions. Material was reviewed, practiced by the counselor, and then role played with two doctoral level supervisors. Once counselors were trained, weekly supervision and audiotape review were conducted. Using the MITI-3 five-point scale rating system²⁵ on MI principles and methods (Evocation, Collaboration, Autonomy/Support, Direction, Empathy), over 97% of the supervisor-rated tapes met the performance criterion (a score of 3 or above) on each item. On the MITI-3, 39.1% of the ratings were good, 49.1% were very good and 11.8% were excellent. Inter-coder percent agreement was perfect for 41.9% of cases and agreement within one point on the rating scale was found in 52.4% of the cases. Only 3.7% of the interrater scores were more than one point apart.

2. Enhanced Standard Care (ESC) Group—Families in this condition received regular medical care, as did the families in the BPI condition. Standard care was considered enhanced because they also completed an assessment battery in the PED, identical to the BPI condition, and studies have shown that assessment procedures in and of themselves can have positive reactive effects^{26, 27}. To control for contact time, the ESC Group also received mailings at 1 (about local family opportunities) and 3 (on the influence parents have on their adolescent's alcohol use) months after discharge and reminder calls to parents to assure receipt of these mailings.

Follow-up assessment: The main goal of this study was to determine if it was feasible to conduct an alcohol prevention study in the PED and, if it was feasible, whether it was acceptable to parents and teens who were being seen in the PED for medical care. In addition, at six-month follow-up, we readministered all baseline measures to examine whether there were any changes in adolescent attitudes toward alcohol and other drugs, any change in parenting behavior, and any change in peer influences. Adolescents were also asked to complete an online form with three questions on alcohol use at 2, 4 and 6 months. Adolescents who did not complete the questions online were contacted by phone and compensated \$5 for each alcohol use assessment they completed.

Measures

Feasibility and Acceptability—Feasibility was assessed based on the number of families enrolled in the study and number who completed the prevention intervention in the PED. The prevention intervention was considered feasible if 80% of eligible families agreed to participate. A second criterion for feasibility was that 90% of recruited participants could complete all aspects of the study protocol (screening, consenting, assessment, and if randomized, the intervention), during the PED visit.

Acceptability of the BPI was assessed using the Session Evaluation Form (SEF)²⁸. The SEF was administered to the parent and adolescent after the PED BPI session. It consisted of 10 items on a 4-point response scale ranging from strongly disagree (0) to strongly agree (3) about the adolescents' perception of the session (e.g., was it interesting, was it relevant to their life, did they learn from it) and 10 items assessing the parent's experience with the counselor (e.g. was easy to talk to; understood me).

Parental monitoring and communication: Parental monitoring was assessed using the *Parent Monitoring Questionnaire* (PMQ)³³. The 24-item PMQ is completed by both parents and adolescents and has four subscales measuring: 1. direct monitoring of their child (e.g. How often do your parents know what you are doing in your free time?), 2. child disclosure (e.g. How often do you keep a lot of secrets from your parents about what you do in your free time?), 3. parental solicitation (e.g. How often do your parents talk to your friends when they come to your house?), and 4. parental control (e.g. How often do you need your parents' permission to stay out late?). Responses to each item are on a 5-point scale (ranging from never to always) and the item responses were summed across the 24 items to give the total PMQ score; scores could range from 0 to 120; with higher scores indicating greater parental monitoring behaviors. Three items were reverse scored to be consistent with the overall direction of the scale. The original subscales have demonstrated good reliability and correlate with adolescent internalizing and externalizing maladjustment³³. In this study, only the results of the 24 item total score of the PMQ are reported. The total score had good internal consistency for both parent ($\alpha=.87$) and adolescent ratings ($\alpha=.87$).

The parent and adolescents assessment of parent-child communication was assessed through the *Parent-Child Communication Form* (PCCF)³⁴. The parent and adolescent separately completed this measure that assessed the frequency of both positive and negative parent-to-adolescent communication over the prior 30 days. Responses are on a 5 point scale (ranging from almost strongly disagree=1 to strongly agree=5). This measure has demonstrated adequate internal consistency (Cronbach's alpha = .70 for parent and .85 for adolescent)³⁴. The adolescents answered 19 questions (10 negative communications and 9 positive) and parents responded to 18 questions (9 positive and 9 negative: the item 'If I were in trouble, I could tell my mother/father' did not have an equivalent appropriate questions for the parent). Negative items were reverse scored, allowing the items to be summed to provide a total communication scale score for this study, with higher scores indicating more positive or beneficial communication. The internal consistency coefficient was $\alpha = .58$ for adolescents and $\alpha = .60$ for parents.

Adolescent Intention to Drink and Attitudes toward Alcohol: Four questions on a four-point scale (yes, probably yes, probably no, no) from the Youth Alcohol and Drug Survey (YADS)^{29, 30} were used to assess the adolescent's intention to drink: "Do you plan to drink alcohol in the next year"? "Do you plan to drink in the next 6 months"? "Do you plan to drink in the next 30 days"? And, "If a friend offered you a drink would you drink it"? In this study, the internal consistency coefficient for the four questions was 0.79.

Peer Measures: The Child Peer and Social Skills scale (CPSS) was developed by Dishion and Kavanagh³⁹ and is completed by both the parent and adolescent. This eight item scale measures the parent and adolescent report of the involvement by the adolescent with deviant and prosocial peers. There are three items measuring prosocial peer involvement, and five items measuring deviant peer involvement. Each item is measured on a five point scale (1 to 5) with higher scores on each scale reflecting greater involvement with deviant or prosocial peers respectively. Internal consistency for the parent version of prosocial peer score of the CPSS in this study was .79, and .64 for the deviant peer involvement scale. The adolescent version had an internal consistency of .68 for the prosocial peer involvement scale and .85 for the deviant peer involvement scale.

Adolescent Alcohol Consumption: At the baseline assessment and at subsequent, bi-monthly contacts, adolescent alcohol use was assessed with a three-question panel: "During the past 30 days, on how many days (if any) did you have at least one drink of alcohol"?⁴⁰ "On the days that you drank alcohol during the past 30 days, what was the usual number of drinks that you had each day"?⁴¹ and "During the past 30 days, on how many days, if any, did you have 4 or more drinks of alcohol on the same occasion"?⁴¹

Data analyses

Descriptive statistics, percentage responding to an item, along with the mean, median, range and confidence intervals, were used to describe responses to the acceptability measures. The demographic characteristics and the baseline assessment scores of the two intervention conditions were compared using chi square statistics and t-tests. A two-way ANOVA model (intervention condition by time) was used to compare effects of the intervention on the outcome measures.

Results

The sample consisted of 99 parent-adolescent dyads (10 in an open trial and 89 in a randomized controlled trial, RCT). Data presented is from RCT participants only. The average age of the adolescent was 13 years ($SD = .83$), 51% were female, and 90% of parents were mothers. At baseline, there were no differences between those assigned to the BPI condition ($n = 44$) and ESC ($n = 45$) conditions on demographic variables (see Table 1) or any of the assessment measures (Table 1).

Objective 1: Feasibility and acceptability

As can be seen from the CONSORT diagram (Figure 1), a total of 228 families were approached about enrollment, 122 were eligible, and 104 were enrolled (85%). Five

subsequently withdrew from the study (2 from the open trial and 3 from the RCT) because they were discharged from the PED and did not want to stay longer to complete the intervention. Of these 104, 99 (10 in the open trial, 89 in the RCT) completed the assessment battery (95%) in the PED in less than 30 minutes. One additional family withdrew from the study during follow up. The BPI was considered feasible because, of those randomized to this group, 100% finished the intervention in its entirety in the PED. Feasibility of the online research follow-up assessment protocol was also demonstrated by our follow up rates: 85% of adolescents completed all the bimonthly follow ups assessing substance use and 94% of adolescents (95% of control adolescents; 90% of intervention adolescents) and 89% of parents (86% of control parents; 90% of intervention parents) completed the six-month follow up. Telephone booster rates were not as encouraging; 53% and 38% of those parents in the BPI condition completed their first and second telephone booster contacts, respectively.

Overall acceptability by the teen participants was evaluated with the items on the SEF. The percentage of teen participants rating the items as strongly agree or agree can be seen in Table 2 along with the mean, median, range and confidence interval for each item. Parents were additionally asked to complete two questions about the content of the session. A total of 93% of parents rated as “agree” or “strongly agree” with the item, “Made me feel it was up to me to make choices about my parenting”. Also, 93% rated as “agree” or “strongly agree” with the item, “Gave me some helpful ideas for helping my teen avoid alcohol, tobacco, and marijuana”.

Objective 2: Parental monitoring and communication, adolescent intentions regarding substance use, and peer influence on intentions to use substances

The PCCF, completed by adolescents and parents at baseline and at the six month follow-up surveys, was used to assess parent-adolescent communication (Table 3). Two-way ANOVAs were conducted on the difference between adolescent and parental reports of parental communication over time as a function of treatment received. Adolescent report of parental communication skills did not significantly vary by group [$F(1,165)= 1.78$; $p=.19$], but did significantly increase over time [$F(1,165)= 5.93$; $p=.02$], although this significant increase over time was not significantly different between groups [$F(1,165)= 1.02$; $p=.31$]. As can be seen from Table 3, parental reports of communication were lower at baseline than those of the adolescents, and significantly increased over time [$F(1,165) = 182.48$; $p < .001$], although this difference did not vary by group [$F(1,165) = 1.09$, $p = .30$].

Parental monitoring was assessed with the PMQ which was completed by the adolescents and parents at baseline and at the six month follow-up surveys (Table 3). The adolescent report of parental monitoring was not significantly different between groups [$F(1,165)= 0.42$; $p=.52$], did significantly decrease over time across the groups [$F(1,165)= 3.85$; $p=.05$], but the decrease over time was not significantly different between groups [$F(1,165)= 1.74$; $p=.19$]. Parental reports of monitoring also significantly decreased over time [$F(1,165) = 151.52$; $p < .001$], but this difference did not vary by group [$F(1,165) = 0$, $p = .99$]. Collapsing the percentage decrease in the reports of parental monitoring from baseline to the six month survey, the adolescents' mean decrease of 5% (95% CI = 1% to 9%) was

significantly less than the 25% (95% CI = 19% to 39%) mean decrease in parental reports of monitoring behavior.

Adolescent intentions toward alcohol use at baseline and 6-month follow-up are presented in Table 4. We created a binary outcome for each response (yes or no for intent to drink in the four listed scenarios). Using a binomial test of proportions, it can be seen from Table 4 that participants in both groups reported increased likelihood to drink in the four scenarios, but the only significant increase for both groups between the baseline and 6 month surveys was in the intent to use alcohol sometime in the next year (ESC increase 7% to 27%, $Z = 2.71$; $p = .006$; BPI increase 7% to 25%, $Z = 2.49$; $p = .012$).

Peer influences on the Child Peer and Social Skills Scale are reported in Table 5. Two-way ANOVAs were conducted to examine adolescent and parent ratings of adolescent prosocial and deviant peer involvement at the baseline and six month surveys. The adolescents' ratings of their association with prosocial peers showed a decrease from baseline to six months for both groups, although this change was not significant across groups [$F(1,165) = 2.11$, $p = .15$], or between groups [$F(1,165) = .27$, $p = .60$]. Adolescents' report of association with deviant peers did not significantly increase over time [$F(1,165) = 2.38$, $p = .13$] and there was no difference across groups [$F(1,165) = 0.08$, $p = .77$]. For parent ratings of their adolescents' association with prosocial peers there were no effects of group [$F(1,165) = 0.22$, $p = .64$], or time [$F(1,165) = 0.71$, $p = .40$], or an interaction, [$F(1,165) = 0$, $p = .96$]. There were also no significant effects for parent's ratings of their adolescent's association with deviant peers by group [$F(1,165) = 1.24$, $p = .27$], time [$F(1,165) = 0.93$, $p = .34$], or group by time interaction [$F(1,165) = .02$, $p = .88$].

Objective 3: Adolescent alcohol use

Three adolescents reported alcohol use of more than a sip, at baseline. As expected, there was very little alcohol use reported in the six month time frame in the group of young adolescents who did not use alcohol at baseline. During the six month follow-up period, 4 teens in the BPI condition and 1 teen in the ESC condition reported alcohol use of more than a sip, during follow up.

Discussion

The primary focus of this investigation was to conduct a pilot study within the PED to determine the acceptability of an alcohol prevention intervention among parent and adolescents and to demonstrate that such a prevention intervention can be feasibly conducted within the PED. Our data suggest that most eligible parents and adolescents were willing to engage in such a prevention intervention, and reported finding it a helpful experience. About 85% of the eligible parents approached to participate agreed to do so and all completed the assessment in the PED while awaiting their medical care. Five families completed the assessment but not the intervention because they were discharged from the PED and did not want to stay longer. Interestingly, there were a few families who were discharged but did choose to stay and finish the intervention. The large majority of adolescents and parents completed the online follow-up assessments suggesting that families seen in a PED can be successfully contacted to provide data online. Completing follow-ups

online decreases cost and therefore greatly increases the feasibility of future studies due to the fact that a large sample will be necessary to establish the potential effects of the prevention intervention in an appropriately powered randomized controlled trial.

The BPI described here is unique in that it is primarily parent-targeted, delivered where parents are found – the PED – and individually-tailored to the parent rather than being a generic skills-based program that is identical for all participants. Individually-tailored approaches, while common in intervention protocols, are uncommon in prevention intervention programs. Nonetheless, even with the personal tailoring, sessions were typically completed in 25 to 40 minutes, which would appear to be a feasible duration for most PEDs given current lengths of stay. Comments about the session indicated that nearly all of the teen participants felt it was useful, relevant, and enjoyable and would recommend it to others. Parents were equally, if not more, positive about the content of the intervention.

Parent willingness to complete telephone booster sessions was low, suggesting that continued booster intervention by phone is neither acceptable to parents nor feasible for investigators. As this was a prevention intervention, parents may have felt less motivated to participate in an active booster intervention because the boosters were set to occur within 3 months of enrollment, and few teens would have initiated alcohol use and parents would typically not have new issues to address with the counselor. Future studies might consider other methods of administering booster prevention interventions. Mailings, online material, or text messaging, over a longer period of time may be better ways to provide booster information to parents after a brief intervention in PEDs.

Although the primary goal of this project was to determine if it was feasible to deliver a prevention intervention in the PED, we also collected data regarding any change in teen intentions to use alcohol and attitudes towards alcohol use, given that these are strongly predictive of subsequent use^{42, 43}. We were not able to detect any between-group differences in these constructs. It is likely that this was, at least in part, due to the small number of subjects in each group. In addition, the endorsement of intent to drink under different circumstances was reported by very few teens at baseline, and remained low at the six-month follow up for both groups suggesting that there was a ceiling effect, i.e., there was not much room to improve at the 6 month follow-up, regardless of treatment condition. Other measurement issues may have also affected our ability to detect differences in the constructs studied here. The internal consistency of several of our measures was lower than that found by the scale developers. Thus, the applicability of some of the measures, especially those assessing parenting, could be questioned. Future studies might consider more sensitive measures of parent adolescent interaction.

Several factors may have affected our ability to detect differences between conditions. First, younger adolescents are more strongly affected by attitudes of their parents⁴³ than older adolescents, which was part of the rationale for selecting 12 to 14 year olds for this study. If we had selected an older cohort for inclusion in the project, then it is possible that we would have been able to detect a treatment condition difference, because the rates of use would have, in all likelihood, been higher. Second, if we had selected adolescents who were at high risk to start drinking, e.g. those with older siblings who drink alcohol or teens with existing

behavioral and/or school problems, then we might have been able to detect an effect on initiation of alcohol use. And third, any positive effects of the intervention may have been much more likely to be detected at a longer follow-up period as the teens transitioned into high school and had more exposure to AOD use. Because the major goal of this study was to test the feasibility of conducting a prevention intervention in the PED, we did not have funding to conduct such long term follow-up.

The PED is an important site for alcohol screening and brief intervention. The NIAAA Alcohol Screening and Brief Intervention for Youth: A Practitioner's Guide²⁰ recommends brief advice for teens identified as having low alcohol risk. This research protocol utilized a brief MI-based approach, addressing parenting techniques (monitoring and communication). The two approaches complement each other. Nonetheless, in order for PED clinicians to consider implementing AOD prevention, research is necessary in PEDs to determine if alcohol prevention interventions conducted in the PED successfully prevent or delay the initiation of alcohol use. While some outcome data are presented here, this study was primarily a feasibility study. The current study did not allow us to recruit an adequate number of families to measure prevention/delay of teen alcohol initiation over an adequately long period of time. In fact, prevention studies are typically conducted with much larger samples. For example, in order to find a 20% improvement in parenting in the experimental group versus a 10% improvement in the control group, the study would require 200 subjects per group. Future, larger, fully powered studies are necessary to determine the effectiveness of PED based prevention interventions.

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References

1. SAMHSA. Results from the 2006 National Survey on Drug Use and Health: National Findings. Rockville, MD: Office of Applied Studies; 2007.
2. [Accessed July 18, 2012] 1991–2011 High School Youth Risk Behavior Survey Data. at <http://apps.nccd.cdc.gov/youthonline>.
3. Dawson DA, Goldstein RB, Chou SP, et al. Age at first drink and the first incidence of adult-onset DSMIV alcohol use disorders. *Alcohol Clin Exp Res*. 2008; 32:2149–2160. [PubMed: 18828796]
4. Gruber E, DiClemente RJ, Anderson MM, et al. Early drinking onset and its association with alcohol use and problem behavior in late adolescence. *Prev Med*. 1996; 25:293–300. [PubMed: 8781007]
5. Hawkins JD, Catalano RF, Kosterman R, et al. Preventing adolescent health-risk behaviors by strengthening protection during childhood. *Arch Pediatr Adolesc Med*. 1999; 153:226–234. [PubMed: 10086398]
6. Williams R, Chang S. A comprehensive and comparative review of adolescent substance abuse treatment outcome. *Clin Psychol Sci Prac*. 2000; 7:138–166.
7. Monti PM, Colby SM, Barnett NP, et al. Brief intervention for harm reduction with alcohol-positive older adolescents in a hospital emergency department. *J Consult Clin Psychol*. 1999; 67:989–994. [PubMed: 10596521]
8. Spirito A, Monti PM, Barnett NP, et al. A randomized clinical trial of a brief motivational intervention for alcohol-positive adolescents treated in an emergency department. *J Pediatr*. 2004; 145:396–402. [PubMed: 15343198]

9. Mason WA, Kosterman R, Hawkins JD, et al. Reducing adolescents' growth in substance use and delinquency: randomized trial effects of a parent-training prevention intervention. *Prev Sci.* 2003; 4:203–212. [PubMed: 12940470]
10. Spoth R, Redmond C, Lepper H. Alcohol initiation outcomes of universal family-focused preventive interventions: one- and two-year follow-ups of a controlled study. *J Stud Alcohol Suppl.* 1999; 13:103–111. [PubMed: 10225494]
11. Faggiano F, Vigna-Taglianti FD, Versino E, et al. School-based prevention for illicit drugs' use. *Cochrane Database Syst Rev.* 2005:CD003020. [PubMed: 15846647]
12. Tobler NS, Roona MR, Ochshorn P, et al. School-based adolescent drug prevention programs: 1998 meta-analysis. *J Prim Prev.* 2000; 20:275–336.
13. Chun TH, Linakis JG. Interventions for adolescent alcohol use. *Curr Opin Pediatr.* 2012
14. Foxcroft DR, Tsertsvadze A. Universal school-based prevention programs for alcohol misuse in young people. *Cochrane Database Syst Rev.* 2011; 5:CD009113. [PubMed: 21563171]
15. Foxcroft DR, Tsertsvadze A. Universal multi-component prevention programs for alcohol misuse in young people. *Cochrane Database Syst Rev.* 2011; 9:CD009307. [PubMed: 21901732]
16. Mauss AL, Hopkins RH, Weisheit RA, et al. The problematic prospects for prevention in the classroom: should alcohol education programs be expected to reduce drinking by youth? *J Stud Alcohol.* 1988; 49:51–61. [PubMed: 3347076]
17. McKnight A. Intervention with alcohol-impaired drivers by peers, parents and purveyors of alcohol. *Health Educ Res.* 1990; 3:225–236.
18. Gittelman MA, Durbin DR. Injury prevention: is the pediatric emergency department the appropriate place? *Pediatr Emerg Care.* 2005; 21:460–467. [PubMed: 16027582]
19. Wilson KM, Klein JD. Adolescents who use the emergency department as their usual source of care. *Arch Pediatr Adolesc Med.* 2000; 154:361–365. [PubMed: 10768673]
20. [Accessed December 1, 2011] Alcohol screening and brief intervention for youth: a practitioner's guide. 2011. at www.niaaa.nih.gov/YouthGuide).
21. Pediatric Trauma SBIRT Workgroup. Implementation of Alcohol Screening, Brief Intervention and Referral to Treatment Policies in Pediatric Trauma Centers. Providence RI: Injury Prevention Center at Rhode Island Hospital; 2012.
22. Miller, WR.; Rollnick, S. Motivational interviewing: Preparing people for change. New York, NY: Guilford Press; 2002.
23. Miller WR. Motivation for treatment: A review with special emphasis on alcoholism. *Psychol Bull.* 1985; 98:84–107. [PubMed: 3898175]
24. Miller, WR.; Sovereign, RG. The check-up: A model for early intervention in addictive behaviors. In: Loberg, T.; Miller, WR.; Nathan, PE.; Marlatt, G., editors. Addictive behaviors: Prevention and early intervention. Amsterdam: Swits & Zeitlinger; 1989.
25. Revised Global Scales:Motivational Interviewing Treatment Integrity 3.1.1 (MITI 3.1.1). University of New Mexico; 2010. (Accessed at http://casaa.unm.edu/download/MITI3_1.pdf)
26. Clifford PR, Maisto SA. Subject reactivity effects and alcohol treatment outcome research. *J Stud Alcohol.* 2000; 61:787–793. [PubMed: 11188483]
27. McCambridge J, Kypri K. Can simply answering research questions change behaviour? Systematic review and meta analyses of brief alcohol intervention trials. *PLoS One.* 2011; 6:e23748. [PubMed: 21998626]
28. Harper G, Contreras R, Bangi A, et al. Collaborative process evaluation: Enhancing community relevance and cultural appropriateness in HIV prevention. *J Prev Interv Community.* 2003; 26:53–71.
29. Werch, CE. The Youth Alcohol and Drug Survey. Jacksonville, FL: University of North Florida; 1996.
30. Werch CE, Carlson JM, Pappas DM, et al. Risk factors related to urban youth stage of alcohol initiation. *Amer J Health Behav.* 1997; 21:377–387.
31. Fromme K, Stroot E, Kaplan D. Comprehensive effects of alcohol: Development and psychometric assessment of a new expectancy questionnaire. *Psychol Assessment.* 1993; 5:19–26.

32. Fromme K, D'Amico EJ. Measuring adolescent alcohol outcome expectancies. *Psychol Addict Behav.* 2000; 14:206–212. [PubMed: 10860120]
33. Kerr M, Stattin H. What parents know, how they know it, several forms of adolescent adjustment: Further support for a reinterpretation of monitoring. *Dev Psychol.* 2000; 36:366–380. [PubMed: 10830980]
34. Barnes, H.; Olson, D. Parent-Adolescent Communication Scale. In: Olson, M Barnes; Larsen; Muxen; Wilson, editors. *Family Inventories: Inventories used in a national survey of families across the family life cycle.* St. Paul, MN: University of Minnesota; 1982.
35. Miller KS, Kotchick BA, Dorsey S, et al. Family communication about sex: what are parents saying and are their adolescents listening? *Fam Plann Perspect.* 1998; 30:218–222. 235. [PubMed: 9782044]
36. Mounts NS. Parental management of adolescent peer relationships in context: The role of parenting style. *J Fam Psychol.* 2002; 16:58–69. [PubMed: 11915411]
37. Chassin L, Pillow D, Curran P, et al. Relation of parental alcoholism to early adolescent substance use. A test of three mediating mechanisms. *J Abnorm Psychol.* 1993; 102:3–19. [PubMed: 8436697]
38. Chassin L, Curran P, Hussong A, et al. The relation of parental alcoholism to adolescent substance use: A longitudinal follow-up study. *J Abnorm Psychol.* 1996; 105:70–80. [PubMed: 8666713]
39. Dishion, TJ.; Kavanagh, K. *Intervening in adolescent problem behavior: A family-centered approach.* New York: Guilford Press; 2003.
40. Information Works! School Year 2005–2006. National Center on Public Education and Prevention. 2007 (at <http://www.infoworks.ride.uri.edu/2006/default.asp>).
41. U.S. Department of Health and Human Services. National Survey On Drug Use And Health, 2005 [Computer file]. ICPSR04596-v1. Research Triangle Park, NC: Research Triangle Institute [producer], 2006. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor]; 2006. Substance Abuse and Mental Health Services Administration, Office of Applied Studies. 2006-11-16
42. Alfonso J, Dunn ME. Differences in the marijuana expectancies of adolescents in relation to marijuana use. *Subst Use Misuse.* 2007; 42:1009–1025. [PubMed: 17613960]
43. Aas HN, Leigh BC, Anderssen N, et al. Two-year longitudinal study of alcohol expectancies and drinking among Norwegian adolescents. *Addiction (Abingdon, England).* 1998; 93:373–384.

Figure 1.
Recruitment flow for Project Parent

Table 1

Demographic characteristics of the adolescent sample

Variable	ESC (n = 45)	BPI (N = 44)	Statistic
Age	Mean = 13.1 (SD = 0.86)	Mean = 13.07 (SD = 0.79)	$F(2,95) = 0.02$; $p = .98$
Gender	Female = 46%	Female = 700%	$\chi^2 (2) = 1.96$; $p = .37$
Latino	Yes = 30%	Yes = 27%	$\chi^2 (2) = 0.17$; $p = .92$
Race	White = 75%	White = 67%	$\chi^2 (4) = 4.31$; $p = .37$
Type of parent present in the ED	Mother = 86%	Mother = 91%	$\chi^2 (2) = 1.76$; $p = .42$

Table 2
Baseline Intervention Session-Acceptability among Adolescent and Parent Participants

	Percentage rating agree/ strongly agree	Mean	Median	Range	Confidence Interval (95%)
Adolescent (n=39)					
From this session:					
Learned a lot	97%	2.54	3	1-3	2.45-2.63
Able to apply what I learned	100%	2.69	3	2-3	2.62-2.76
Given an opportunity to participate	97%	2.51	3	1-3	2.42-2.60
Session was well organized	100%	2.67	3	2-3	2.59-2.75
Topic of session was interesting	100%	2.49	2	2-3	2.40-2.58
Presenter stimulated my interest	97%	2.46	2	1-3	2.38-2.54
Topic of this session was relevant to my life	82%	2.21	2	0-3	2.06-2.36
Session was enjoyable	100%	2.51	3	2-3	2.43-2.59
I would recommend session	95%	2.54	3	1-3	2.44-2.64
I felt comfortable participating	95%	2.54	3	1-3	2.44-2.64
Parent (n = 39)					
The counselor was:					
Easy to talk to	100%	2.97	3	2-3	2.90-3.03
Concerned about me	87%	2.43	3	0-3	2.10-2.77
Understood me	100%	2.83	3	2-3	2.69-2.97
Helped me believe that I can help my teenager	100%	2.86	3	2-3	2.74-3.00
Argued with me	17%	.53	0	0-3	.16-.91
Told me what to do	27%	.90	0	0-3	.43-1.37
Treated me like an equal	100%	2.78	3	2-3	2.61-2.93
Made me feel that it is up to me to make choices about my parenting	93%	2.50	3	1-3	2.26-2.74
Gave me some helpful ideas for helping my teen avoid alcohol, tobacco and marijuana	93%	2.50	3	1-3	2.26-2.74
Gave me the chance to ask questions	100%	2.80	3	2-3	2.65-2.95

Table 3

Adolescent and Parent Report on Parenting Measures of Monitoring and Communication

Measure	Baseline Mean (SD)	6 months Mean (SD)
Parent Child Communication Form (PCCF) Adolescent Version	ESC (n=44) M = 71.38 (9.06) Range 41–85	ESC (n=41) M = 77.41 (10.53) Range 55–93
	BPI(n=45) M = 70.81 (8.31) Range 52–84	BPI (n=39) M = 73.31 (16.50) Range 52–95
Parent Child Communication Form (PCCF) Parent Version	ESC (n=44) M = 53.73 (9.24) Range 44–69	ESC (n=37) M = 73.96 (8.93) Range 44–86
	BPI(n=45) M = 58.28 (9.18) Range 44–79	BPI (n=39) M = 75.61 (7.20) Range 57–86
Parental Monitoring Questionnaire (PMQ) Adolescent Version	ESC (n=44) M = 93.91 (13.92) Range 59–120	ESC (n=41) M = 92.38 (15.99) Range 32–112
	BPI(n=45) M = 95.51 (15.99) Range 54–93	BPI (n=39) M = 87.68 (17.18) Range 43–112
Parental Monitoring Questionnaire (PMQ) Parent Version	ESC (n=44) M = 101.64(21.17) Range 11–120	ESC (n=37) M = 72.32 (13.00) Range 33–87
	BPI(n=45) M = 102.62 (10.19) Range 77–117	BPI (n=39) M = 73.35 (13.30) Range 30–89

Table 4

Adolescent Intention to Drink and Attitudes towards Alcohol Use

	Treatment	Baseline % Yes	6 Month % Yes)
Would drink if a friend offered you a drink	ESC	5%	10%
	BPI	7%	16%
Intend to use alcohol in the next year	ESC	7%	27%
	BPI	7%	25%
Intend to use alcohol in the next 6 months	ESC	7%	10%
	BPI	2%	11%
Intend to use alcohol in the next month	ESC	0%	5%
	BPI	2%	5%

Table 5

Adolescent and Parent Child Peer and Social Skills Scale (CPSS)

Measure	Baseline Mean (SD)	6 months Mean (SD)
Prosocial Peer Involvement Adolescent Version	ESC (n=44) M = 9.56 (2.01) Range 3–13	ESC (n=41) M = 9.20 (2.32) Range 4–13
	BPI(n=45) M = 9.02 (2.52) Range 1–12	BPI (n=39) M = 8.26 (2.95) Range 1–13
Prosocial Peer Involvement Parent Version	ESC (n=44) M = 8.11 (1.21) Range 4–10	ESC (n=37) M = 7.92 (8.93) Range 44–86
	BPI(n=45) M = 8.00 (1.30) Range 5–12	BPI (n=39) M = 7.84 (1.43) Range 3–10
Deviant Peer Involvement Adolescent Version	ESC (n=44) M = 7.58 (2.92) Range 2–16	ESC (n=41) M = 8.38 (4.01) Range 5–22
	BPI(n=45) M = 8.21 (4.29) Range 5–24	BPI (n=39) M = 9.37 (4.81) Range 5–23
Deviant Peer Involvement Parent Version	ESC (n=44) M = 22.39(4.50) Range 2–25	ESC (n=37) M = 22.85 (3.87) Range 7–25
	BPI(n=45) M = 22.93 (3.23) Range 9–25	BPI (n=39) M = 23.55 (1.89) Range 19–25