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Testing a Brief Substance Misuse Preventive Intervention for Parents of Pre-Adolescents: Feasibility, Acceptability, Preliminary Efficacy

Margie R Skeer, Konstantina E Yantsides,

Tufts University School of Medicine, Department of Public Health and Community Medicine, Boston, MA

Misha Eliasziw,

Tufts University School of Medicine, Department of Public Health and Community Medicine, Boston, MA

Allison Carlton-Smith,

Tufts University School of Medicine, Department of Public Health and Community Medicine, Boston, MA

Migdalia Tracy, and

Tufts University School of Medicine, Department of Public Health and Community Medicine, Boston, MA

Anthony Spirito

Alpert Medical School of Brown University, Division of Clinical Psychology, Department of Psychiatry and Human Behavior, Providence, RI

Abstract

Evidence-based interventions to reduce substance misuse among adolescents are resource and time intensive. We conducted a pilot RCT to evaluate a novel, adaptable, and resource-efficient substance misuse preventive intervention for parents/guardians, focusing on talking with children about substance use and on eating family meals. We randomized 70 parents of children in third-through-sixth grades within a large, urban public school system in New England to the intervention or control condition. Over a six-month follow-up period, we assessed feasibility and acceptability of the intervention and examined frequency of parent-child conversations about alcohol, marijuana, and other drugs, and frequency and duration of family meals. A total of 29 parents were assigned to the intervention and 35 to the control condition. The intervention was found to be feasible and acceptable to participants as evidenced by high recruitment and retention rates and positive feedback from qualitative exit interviews. At three- and six-month follow up, 64.3% and 44.5% of parents in the intervention condition were talking “a lot” to their children about alcohol, compared to 8.7% and 8.7% of the parents in the control condition, respectively ($p < 0.01$ and $p = 0.03$). Patterns in frequency and duration of family meals between the two conditions were not significantly different over time. In conclusion, a higher percentage of parents

randomized to the intervention condition spoke with their children about alcohol, marijuana, and other drugs, but the frequency and duration of meals was not impacted. Further testing of the brief intervention with a larger sample to assess efficacy is warranted.

Introduction

Substance use during early adolescence in the U.S. is highly prevalent. Over half (55.6%) of ninth-grade students report lifetime alcohol use, with 24.4% reporting current use, and 13.5% reporting current binge drinking (i.e., consuming five or more alcoholic beverages within a two-hour period) (Kann et al., 2014). Further, 31.1% of ninth-grade students report lifetime marijuana use and 17.7% report using marijuana once or more during the 30 days prior to being surveyed (Kann et al., 2014).

The adverse consequences of adolescent substance use problems include an increased likelihood of sexual risk taking, driving while intoxicated, and delinquency (Cook et al., 2006; Dembo et al., 1991). Furthermore, the earlier a child initiates alcohol consumption, the greater the risk for developing a substance use disorder (Flory et al., 2004, McGue et al., 2001). Given that almost one-quarter of ninth-grade students have had alcohol for the first time before age 13 (Kann et al., 2014), identifying interventions to reduce the risk of onset, use, and misuse, especially at an early age, could have both immediate and long-term public health benefits.

A child's family environment has been recognized as containing both risk factors, such as family conflict and heightened family stress (Bray et al., 2001; Skeer et al., 2009; Vakalahi, 2001), and protective factors, such as family cohesion and effective family management (Park et al., 2000; Spoth et al., 2005) for adolescent substance use. Universal prevention approaches, i.e., programs aimed at the general population without regard to individual level of risk (O'Connell et al., 2009) where, in general, all members of the target population have the opportunity to participate, have been studied as a means of addressing family risk and protective factors. In this regard, family-based prevention programs have traditionally demonstrated the greatest effect sizes (Kumpfer et al., 2003). Furthermore, family-centered approaches that focus on strengthening parent-child relationships, parental attitudes against substance use, and monitoring have been shown to be the most effective in preventing substance use among youth (Kumpfer et al., 2003).

While exemplary universal preventive intervention programs (Molgaard and Kumpfer, 1994; Molgaard and Spoth, 2000; Park et al., 2000) have been found to be effective at achieving important substance use prevention goals, they can be both labor intensive and resource demanding, requiring several in-person sessions from parents and children. Several universal substance use prevention programs have attempted to reduce participant and resource burden by developing less intensive programs to prevent substance use problems among adolescents (Bauman et al., 2001; Werch et al., 2003), and while the effects are somewhat attenuated, they still demonstrate efficacy in reducing intentions to use substances and substance use (Bauman et al., 2001; Smit et al., 2008; Werch et al., 2003).

Prevention programs focusing on open communication, effective monitoring, and family cohesion have all been shown to be protective against substance misuse among adolescents, which even extend into young adulthood (Dishion et al., 1988; Ge et al., 1996; Hawkins et al., 1992). In particular, parent-child communication about alcohol and other drugs has been shown to increase negative attitudes about alcohol use and reduce the risk of early substance use initiation (Brody et al., 1998; Brody et al., 2002; Miller et al., 2000; Miller-Day and Kam, 2010; Perry et al., 2002). This practice is imperative, particularly among pre-adolescents, typically between the ages of 10 and 12 years, when parental attitudes have more influence than those of peers.

Strengthening parent-child relationships is another principle of substance use prevention (NIDA, 2014). One practice associated with stronger parent-child ties is family meals. It is thought that family meals provide children with structure and stability, which can serve to increase parent-child trust, and facilitate family communication (Skeer and Ballard, 2013). Multiple observational studies have demonstrated that eating meals together as a family reduces the risks of smoking, drinking, and other drug use among youth (Skeer and Ballard, 2013). However, only 58% of children report eating five or more meals with their parents each week, which is a significant decline since the late 1970s (CASA, 2012). While the majority of studies examining the effects of family meals have focused on nutrition and obesity (Berge, 2009; Neumark-Sztainer et al., 2003; Woodruff and Hanning, 2008), cross-sectional and longitudinal observational studies have demonstrated that the practice of eating family meals is consistently associated with a reduced risk of tobacco, alcohol, and other drug use, as well as with other behavioral problems (Franko et al., 2008; Fulkerson et al., 2006; Musick and Meier, 2012; Sen 2010).

To address some important gaps in the literature, we developed and tested a universal substance misuse preventive intervention. The intervention was designed to affect the mechanisms that have been shown to be associated with a reduction in child substance use, including increasing parent-child communication about substances and increasing family meals. It utilizes the “brief intervention model” (WHO, 2008) to target parents as facilitators in preventing substance misuse among their children by means of a framework that is easily adaptable, reduces participant burden, and is resource efficient, thus enhancing sustainability. Additionally, we used the promotion of five or more family meals together weekly as a primary intervention strategy, which, to the best of our knowledge, has not been studied to date with respect to adolescent substance use prevention. The purpose of the current pilot randomized control trial was to assess the feasibility and acceptability of the brief intervention, as well as to establish proof-of-concept with respect to parental outcomes that have been associated with a decreased risk of child substance use. We hypothesized that parents who received the intervention condition would report a greater number of conversations about alcohol, marijuana, and other drugs, and report eating more meals per week and spending more time at meals with their child compared to parents receiving the control condition. This paper reports the primary outcomes of The SUPPER Project (Substance Use Prevention Promoted by Eating family meals Regularly) trial.

Method

Program Goal

The current research was motivated by Ecodevelopmental Theory, which proposes that children can be positively influenced by their parents' attitudes, beliefs, and limit-setting practices, which, in turn, can further support the positive development of the family as a whole (Szapocznik and Coatsworth, 1999). Based on Ecodevelopmental Theory, the overarching goal of the current intervention was two fold: first, to increase the number of conversations parents have with their children about the harms associated with substance use, which has been shown to influence their children's decision-making regarding substance use, and second, to increase a consistent time that parents spend with their children through eating meals together, which is hypothesized to facilitate family bonding.

Participants

Between January and December 2014, a convenience sample of parents/guardians (referred to herein as parents) was recruited from five public K-8 schools within one school district in a large New England city. Study staff recruited parents at school pickup and within afterschool programs, and at open houses and parent-teacher conference events.

Additionally, posters and fliers were put up at the school and letters were sent home with children. Eligible participants: 1) had a child in third through sixth grade at the start of the study, 2) were in the same location as the child (e.g., any place that would facilitate a meal together) at least five days per week, and 3) spoke English or Spanish fluently. Parents of children with self-identified developmental disabilities who would have difficulty completing a computer-based survey were excluded from the study.

Procedures

The study PI, along with trained study staff [Project Coordinator (PC) and Research Assistant (RA)] recruited participants into the study. Once initial contact was made, study staff scheduled and completed all administrative procedures, including obtaining written informed consent from parents and assent from children. For data collection, both parents and children completed Computer-Assisted Survey Interview (CASI)-administered surveys at baseline. After the baseline survey was completed, parents were randomized to the brief intervention or the control condition. We employed an urn randomization technique (Stout et al., 2014) that balanced the number of boys and girls, as well the number of children in third through fourth grades and fifth through sixth grades, between the two conditions. All parents and children, regardless of study condition, were administered follow-up surveys in person at three and six months post intervention for the experimental condition and at three and six months post baseline for the control condition. All participants (both parent and child participants) received \$30 for their completion of the baseline and three-month follow up surveys and \$40 for the six-month survey. All study procedures were approved by the university academic medical center Institutional Review Board and from the research oversight office of the school district where the research was conducted.

Study conditions

Brief Substance Misuse Preventive Intervention—Parents in the experimental condition received a brief intervention that was comprised of two parts: an in-person session and a home-based element. For the in-person session, we provided parents with a handbook specific to the gender of the child, written at an eighth-grade reading level, that provided advice and information on five domains: 1) background on adolescent substance use (i.e., up-to-date statistics, effects of substance use on the developing brain); 2) parent-child communication, including the importance of open communication, monitoring, and ways to communicate effectively; 3) eating at least five meals per week with their children, which included information on which meals parents should eat with their children, what to avoid doing during meals (for example, watching television, or using phones to talk, text, or search the internet), and alternatives if eating meals together is not possible; 4) parent-child communication specifically about the harms of substance use; and 5) a study website with links to resources for additional information (which were printed out for any parent without internet access). Parents were instructed to read the handbook in its entirety before the in-person session. The handbooks were 8.5×4 ” in size and ranged in length from 24 pages for the English handbooks to 28 pages for the Spanish handbooks. Approximately two weeks after receiving the handbook, parents participated in a one-hour session with a communication specialist where the main points in the handbook that were most relevant to each participant were reviewed and parents were able to ask questions. Parents assigned to the intervention condition received a \$25 gift card for participating in the in-person session.

For the home-based component, two weeks after the initial intervention session, parents had a half-hour follow-up phone call with the same specialist. Additionally, over the course of the following three-months, parents were asked to keep a weekly log of the number of meals they ate per week with the target child, the type of meals eaten (e.g., breakfast, lunch, dinner), and how long each meal lasted. Parents were compensated \$5 for each meal log that was turned in by the end of the following week. In addition, parents received two text messages each week for 13 weeks (13 original messages resulting in 26 messages sent over the study period) with reminders and tips that reinforced the handbook information. Participants were reimbursed \$0.25 for each text message they received, and participants without their own mobile phone ($n=2$) were provided with a disposable one. Additionally, parents received a refrigerator magnet that reinforced the message about the importance of family meals. Qualified Spanish translators translated all of the study materials into Spanish.

Control condition—Parents in the control condition did not initially receive any additional information from the study team. After the last survey visit (six month follow up), parents in this condition received all of the intervention materials, including the handbook, magnet, access to the website, and resources.

Measures

Feasibility and acceptability—Feasibility and acceptability of the intervention were determined by: (1) comparing the number of participants enrolled into the trial to the recruitment goal, as well as the retention rate; (2) comparing the demographic characteristics of the sample to the larger population from which it was drawn; and (3) receiving feedback

from participants in the intervention condition about their thoughts on the different intervention components through exit interviews.

Communication about substances: alcohol, marijuana, and other drugs—

Participants were asked how frequently they spoke with their child about alcohol, marijuana, and other drugs, separately. For each category of substance, parents were asked how many times they had ever communicated with their child about it, and how many times they communicated about it in the past three months. Parents who responded that they ever spoke with their child about the substance were then asked how frequently they had those conversations over the past three months. Response options included “once,” “a few times,” “a lot,” and “I don’t want to answer.” For the current analysis, we dichotomized this outcome to: (1) “a lot” and (2) “never,” “once,” or “a few times,” separately, for alcohol, marijuana, and other drugs.

Family meals—Family meals were defined for the participants as “a meal where you sat down with your child (the one in the study with you) and at least one of you was eating, regardless of what type of food was served.” Family meals were measured through two methods: First, we employed a timeline follow-back survey (Robinson et al., 2014), in which parents were asked to report the number and duration of each breakfast, lunch, and dinner that they ate with the child in the study for every day over the past seven days that, starting with the day before the survey administration. In a separate section, we inquired how many breakfasts, lunches, and dinners participants ate on average with their child during a typical week during the past month, and how long these meals typically lasted. Because the timeline follow-back questions and overall meal questions for each meal were strongly correlated (all with Pearson correlation coefficients > 0.70), we averaged the two to create single measures of mealtime frequency and mealtime duration for each meal. Finally, for both frequency and duration, we aggregated breakfast, lunch, and dinner to derive the following outcomes: 1) total number of meals eaten together per week, and 2) total number of minutes spent eating meals together per day in an average week.

Data Analyses

The baseline characteristics were compared between the two conditions using chi-square tests for percentages and t-tests for means. Repeated measures log binomial regression analyses, using a compound symmetric covariance structure and adjusting for baseline, were used to assess differences in the percentage of parents talking to their child “a lot” about substances at each of the follow-up visits. Repeated measures analyses of covariance, using a compound symmetric covariance structure and adjusting for baseline measures, were used to assess differences in the mean number of meals per week and the mean number of minutes per meal at each of the follow-up visits. Between-group differences were quantified using Cohen’s *d* effect sizes, where values of 0.2 were considered small, 0.5 as moderate, and 0.8 as large. All analyses were conducted using SAS v. 9.3 (SAS Institute Inc, Cary, NC) and results with $p < 0.05$ were considered to be statistically significant.

Results

Feasibility and Acceptability

At the outset of the trial, we aimed to enroll 68 parent-child dyads with the overall goal of having 60 completers (i.e., 12% attrition). All five schools that we had approached were supportive of the project and allowed study staff access to the students and parents for recruitment. A total of 138 parents provided contact information for involvement in the study and were contacted up to three times with an invitation to participate. Half (49.3%) of those who initially provided contact information ultimately chose not to participate; once study staff contacted them for participation, they declined to enroll for the following reasons: lack of time, not interested, felt that their child was too young, too busy with work schedule, child is too busy with after school activities, or they already talk to child and do not need/want additional information. In addition to these reasons, some participants simply did not return phone calls, text messages, or emails, and others had phone numbers that were no longer working, out of service, or had full voice mailboxes. See Figure 1 for a flow chart of participation in the study.

We surpassed recruitment goals and were able to enroll 70 parent/child dyads into the trial, all of whom were biological parents of children. We also surpassed our retention goals as 64 dyads (91.4%) completed the assessments at three months (8.6% attrition) and all 64 were retained three months later for their the final assessment. Loss to follow up was comparable between the two groups, consisting of four in the intervention condition and two in the control.

The majority of parents completed study procedures as anticipated, with the exception of filling out the intervention meal logs, which only 21.2% of parents (n=14) did at the scheduled time; four parents completed all 13 logs and ten parents completed between 2 and 12. Additionally, data from the brief exit interviews indicated that the parents found the intervention acceptable, as all but one (96.6%) responded extremely favorably to the study components including the handbook, meeting with intervention specialist and text messages. In addition, these parents reported that the intervention was educational, extremely helpful and resource rich, and very much enjoyed the meeting with the communication specialist and, as such, felt better equipped to talk to their kids about drugs and alcohol. Furthermore, we found all five schools approached were supportive of the project and allowed study staff access to the students and parents for recruitment.

Description of the Study Sample

Demographic characteristics of the 64 participants used in the analyses are presented in Table 1. Slightly more than half of parents reported being married or living with a partner. One-half of the sample identified as black, approximately one-third as Hispanic/Latino, and one-quarter as white. Education levels varied, with less than 10% reporting less than a high school degree, and over one-half reporting some level of post-secondary education. Family income also varied, with approximately one-quarter reporting less than \$15,000 per year of household income while another quarter reporting over \$50,000 per year.

Talking with Children about Substances

At baseline, few parents in both groups reported speaking with their children “a lot” about alcohol, marijuana, and other drugs (Table 2). The following describe the differences in talking behaviors between parents in the intervention and control conditions over the 6-month follow-up period.

Alcohol—At three months, 64.3% of parents in the intervention condition reported speaking a lot to their children about alcohol compared to 8.7% of parents in the control condition ($p<0.01$), which suggests a large effect size ($d=1.15$). A large and significant effect size was sustained at six months ($d=0.81$), where the percentage of parents talking a lot to their children about alcohol was 44.5% and 8.7% for the intervention and control conditions, respectively.

Marijuana—Although the effects were of moderate size, the results did not reach statistical significance. Nonetheless, at both three- and six-month follow up, 35.5% of parents in the intervention condition reported talking to their children a lot about marijuana compared to 13.8% and 18.2% of parents in the control condition.

Other drugs—The results at three and six months also indicated that, while the effect sizes were of small to moderate size and the differences were not statistically significant, a higher proportion of parents in the intervention condition spoke to their children about other drugs at both three- (39.9%) and six-month (18.5%) follow ups compared to parents in the control condition (13.9% at three months and 9.3% at six months).

Family Meals

Tables 3 and 4 present the mean number of meals per week and mean number of minutes per day that parents reported eating with their children over the study period.

Frequency of family meals—At baseline, parents in both the intervention and control conditions were eating a large number of meals per week. As a result, there were no observed differences between conditions in the total number of meals eaten or in the number of specific meals (breakfasts, lunches, or dinners), and almost all of the effect sizes were small.

Duration of family meals—Similar to frequency, at baseline, parents in both groups were spending a lot of time eating meals with their children. On average, parents in both conditions spent approximately half an hour with their children eating breakfast, about two-thirds of an hour eating lunch, and three-quarters of an hour eating dinner. The results indicate that the intervention was not significantly associated with duration of family meals, with all of the effects sizes being small to moderate.

Discussion

In the present trial, we pilot tested a brief, substance use preventive intervention for parents of pre-adolescents. The study revealed that implementing the brief intervention was both feasible and acceptable to parents and schools. In addition, we found that a greater

proportion of parents who were randomized to the intervention group talked a lot with their children about alcohol compared to those in the control condition. We did not find, however, that the intervention was associated with the frequency and duration of family meals that parents ate with their children.

We designed and implemented a brief intervention that was resource efficient for both parents and schools in order to ultimately increase disseminability and sustainability. We demonstrated that the intervention was feasible and acceptable, as evidenced, in part, by exceeding our recruitment goal and losing less than 10% of the participants to follow up. Furthermore, the five schools that participated were not administratively burdened by the study. Finally, based on information from the exit interviews, the vast majority of parents who received the brief intervention did not find the program burdensome, and were generally pleased with the intervention components and with the knowledge and skills that they gained from participating.

Although a higher proportion of parents who were randomized to the intervention condition spent a lot of time talking with their children about substances during the follow-up period, the effect sizes were smaller for marijuana and other drugs. In comparison to alcohol, which had a large effect size, this level of attenuation is expected as parents may have found it more difficult to talk to their children about harder substances. It is possible that parents feel more comfortable and confident in talking with their pre-adolescent children about alcohol compared to marijuana and other drugs because alcohol is legal for adults and their children may have been exposed to people drinking alcohol around them. Furthermore, parents may have a greater knowledge of alcohol compared to other drugs, which may play a role in how frequently they choose to discuss these substances with their children. Finally, this variability in parental discussion about different substances could be related to parents possibly feeling that their children are more likely to experiment with alcohol before other substances, making discussing alcohol a more immediate priority. Despite the differing levels of effects, the literature identifies that parent-child communication about alcohol and other substances is associated with a reduced risk of substance use initiation (Spoth et al., 2001, 2002; Smit et al., 2008). Therefore, this positive effect on this mechanism could ultimately translate into reduced rates of substance use initiation over time for youth of parents in the intervention condition.

While we hypothesized that parents assigned to the intervention condition would report a greater number of meals per week and a greater number of minutes spent at each meal compared to those randomized to the control condition, there was not much room for improvement because of the pre-existing ceiling effect of high initial levels observed at baseline. While the intervention did not appear to have an impact on meal behavior, meals may be a vehicle with which parents are using to spend time talking with their children about substances, which this study did not measure. Future work would benefit from asking parents when and in what situations they talk with their children about these topics.

The current study has several limitations. First, the small sample size limited our ability to declare moderate effect sizes as being statistically significant, as well as to test for effect modifications or conduct subgroup analyses. Nonetheless, the observed differences in the

proportion of parents who spoke with their children about alcohol in particular, and also marijuana and other drugs, point to a signal in favor of the intervention. Second, the measures were collected via self-report, which could lead to overestimations of conversations or meals. Third, this was a convenience sample and parents self-selected into the study, which, in addition to the small sample size, may limit generalizability. However, based on data on the larger population of students in the school system, the sample was representative of the population from which it was drawn. Parents came from a range of backgrounds where some of their children had never been exposed to substances in the home or elsewhere, whereas others had substance use and addiction in their families and lived in neighborhoods where children saw people dealing and using drugs daily. Fourth, the sample was small and based in one city in the Northeast, and is therefore not nationally representative. Finally, the response options for the outcome measure of frequency of conversations about substances were subjective and allowed for interpretation, which likely differed across participants. Future research should be more specific about quantifying the number of conversations on this topic.

In summary, this study is the first randomized controlled trial to pilot test a new brief substance use preventive intervention that targets parents to eat meals together with their children and to talk with them about alcohol and other drugs. While the intervention did not impact frequency or duration of meals, it may have changed the conversations that parents were having with their children at meals, and the meals could be a conduit for having important talks about substance use and other risks that youth face. Parents talking with their children about substances is vital to prevention. A brief intervention that is easily implemented and adaptable, reduces participant burden, is resource efficient, and also increases parent-child communication about substances could reduce substance misuse outcomes among youth. If found to be efficacious in a fully powered trial, this intervention could be used to create or augment school-based prevention efforts. Additionally, this work could have policy implications, specifically for those that promote practices that are supportive of families and family time. Future research is needed to further examine these preliminary findings.

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Figure 1.
Participant Flow Chart for The SUPPER Project Pilot Randomized Controlled Trial.

Table 1

Demographic characteristics of participants.

	Total (n=64)	Intervention (n=29)	Control (n=35)	<i>p</i>
Age of parent in years; mean (standard deviation)	37.9 (7.0)	36.0 (6.4)	39.6 (7.2)	0.041
Parent gender; n (%)				
Female	58 (90.6)	24 (82.8)	34 (97.1)	0.049
Male	6 (9.4)	5 (17.2)	1 (2.9)	
Child gender; n (%)				
Female	34 (55.1)	15 (51.7)	19 (54.3)	0.84
Male	30 (46.9)	14 (48.3)	16 (45.7)	
Child grade; n (%)				
3 rd or 4 th	36 (56.3)	16 (55.2)	20 (57.1)	0.87
5 th or 6 th	28 (43.7)	13 (44.8)	15 (42.9)	
Race/ethnicity; n (%)^a				
Hispanic/Latino/Latina/Spanish	19 (29.7)	10 (34.5)	9 (25.7)	0.44
Black	32 (50.0)	14 (48.3)	18 (51.4)	0.80
White	16 (25.0)	4 (13.8)	12 (34.3)	0.06
Asian	1 (1.6)	1 (3.4)	0 (0.0)	0.27
Multi-racial/other	17 (26.6)	10 (34.5)	7 (20.0)	0.19
Born in the U.S.; n (%)				
Yes	38 (59.4)	17 (58.6)	21 (60.0)	0.91
No	26 (40.6)	12 (41.4)	14 (40.0)	
Marital status; n (%)				
Married	22 (34.4)	8 (27.6)	14 (40.0)	
Living with partner, unmarried	13 (20.3)	8 (27.6)	5 (14.3)	0.21
Single, never married	23 (35.9)	12 (41.4)	11 (31.4)	
Separated/divorced	6 (9.4)	1 (3.4)	5 (14.3)	
Number of caretakers in household; n (%)				
Single-parent	19 (29.7)	5 (17.2)	14 (40.0)	0.047
Multiple caretakers	45 (70.3)	24 (82.8)	21 (60.0)	
Number of siblings in household; n (%)				
0	17 (26.6)	7 (24.1)	10 (28.6)	
1	20 (31.2)	10 (34.5)	10 (28.6)	0.78
2	16 (25.0)	6 (20.7)	10 (28.6)	
3 or more	11 (17.2)	6 (20.7)	5 (14.2)	
Education; n (%)				
No high school	6 (9.4)	2 (6.9)	4 (11.4)	
High school/GED	24 (37.5)	13 (44.8)	11 (31.5)	0.27
Some college/ 2 year degree	19 (29.7)	10 (34.5)	9 (25.7)	
4 year degree	4 (6.2)	0 (0.0)	4 (11.4)	
Graduate degree	11 (17.2)	4 (13.8)	7 (20.0)	

	Total (n=64)	Intervention (n=29)	Control (n=35)	<i>p</i>
Household income in U.S. dollars; n (%)				
14,999	17 (26.6)	8 (27.6)	9 (25.7)	0.84
15,000-49,999	28 (43.7)	11 (37.9)	17 (48.6)	
50,000	15 (23.4)	8 (27.6)	7 (25.0)	
Not reported	4 (6.3)	2 (6.9)	2 (5.7)	

^aRace/ethnicity does not sum to 100% as respondents were able to select multiple options.

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Table 2

Percentage of parents reporting talking to their child “a lot” about different substances over the study period.^a

Substance Discussed	Baseline ^b	3-Month Follow Up ^c	6-Month Follow Up ^c
Drinking alcohol			
Intervention (n=29/29/29)	6.9	64.3	44.5
Control (n=35/35/35)	2.9	8.7	8.7
	$p=0.45$	$p=0.005$	$p=0.028$
		$d=1.15$	$d=0.81$
Using marijuana			
Intervention (n=29/29/29)	6.9	35.5	35.5
Control (n=35/35/35)	5.7	13.8	18.2
	$p=0.85$	$p=0.14$	$p=0.24$
		$d=0.50$	$d=0.39$
Using other drugs			
Intervention (n=29/29/29)	10.3	39.9	18.5
Control (n=35/35/35)	0.0	13.9	9.3
	$p=0.05$	$p=0.10$	$p=0.43$
		$d=0.58$	$d=0.26$

^aVersus “Never” or “Not in past 3 months” or “Once or few times in past 3 months”

^bBaseline percentages comparing intervention and control conditions using a chi-square test.

^cFollow-up percentages comparing intervention and control conditions using repeated measures log binomial regression analysis adjusted for baseline, and corresponding Cohen’s effect size d .

Table 3

Mean number of meals per week that parents reported eating with their child over the study period.

	Baseline ^a	3-Month Follow Up ^b	6-Month Follow Up ^b
Total			
Intervention (n=29/29/29)	9.9	11.5	11.5
Control (n=35/35/35)	11.2	10.9	10.7
	<i>p</i> =0.19	<i>p</i> =0.53	<i>p</i> =0.37
		<i>d</i> =0.16	<i>d</i> =0.25
Breakfast			
Intervention (n=29/29/29)	2.8	4.0	4.0
Control (n=35/35/35)	4.0	3.2	3.3
	<i>p</i> =0.02	<i>p</i> =0.08	<i>p</i> =0.13
		<i>d</i> =0.45	<i>d</i> =0.42
Lunch			
Intervention (n=29/29/29)	1.9	2.6	2.4
Control (n=35/35/35)	1.9	2.7	2.2
	<i>p</i> =0.96	<i>p</i> =0.83	<i>p</i> =0.66
		<i>d</i> =0.05	<i>d</i> =0.12
Dinner			
Intervention (n=29/29/29)	5.4	5.5	5.4
Control (n=35/35/35)	5.7	5.5	5.4
	<i>p</i> =0.68	<i>p</i> =0.99	<i>p</i> =0.99
		<i>d</i> =0.01	<i>d</i> =0.01

^aBaseline means comparing intervention and control conditions using a t-test.

^bFollow-up means comparing intervention and control conditions using repeated measures analysis of covariance adjusted for baseline, and corresponding Cohen's effect size *d*.

Table 4

Mean number of minutes per meal that parents reported eating with their child over the study period.

	Baseline ^a	3-Month Follow Up ^b	6-Month Follow Up ^b
Total			
Intervention (n=28/29/28)	99.3	79.2	86.4
Control (n=35/35/34)	79.1	94.3	97.5
	$p=0.13$	$p=0.11$	$p=0.24$
		$d=0.41$	$d=0.30$
Breakfast			
Intervention (n=27/26/27)	32.0	27.2	34.0
Control (n=35/33/31)	29.1	28.5	28.1
	$p=0.59$	$p=0.71$	$p=0.10$
		$d=0.10$	$d=0.44$
Lunch			
Intervention (n=26/27/25)	48.0	41.2	41.7
Control (n = 32/32/32)	33.8	38.0	39.4
	$p=0.06$	$p=0.55$	$p=0.66$
		$d=0.16$	$d=0.12$
Dinner			
Intervention (n=27/29/28)	51.8	37.9	40.3
Control (n=34/34/34)	38.9	46.8	50.1
	$p=0.05$	$p=0.13$	$p=0.10$
		$d=0.38$	$d=0.42$

^aBaseline means comparing intervention and control conditions using a t-test.

^bFollow-up means comparing intervention and control conditions using repeated measures analysis of covariance adjusted for baseline, and corresponding Cohen's effect size d .