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Children's Introduction to Alcohol Use: Sips and Tastes

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Abstract

Background—Sipping or tasting alcohol is one of the earliest alcohol use behaviors in which young children engage, yet there is relatively little research on this behavior. The present research describes the prevalence of sipping or tasting in a community sample of children, examines the sociodemographic correlates and social contexts of this behavior, and tests whether variables reflecting psychosocial problem-behavior proneness, that predict adolescent drinking, account for this behavior.

Methods—A sample of 452 children (238 girls) aged 8 or 10 and their families was drawn from Allegheny County PA using targeted-age directory sampling and random digit dialing procedures. Children were interviewed using computer-assisted interviews. Logistic regression analyses were used to examine the univariate and multivariate correlates of sipping/tasting.

Results—Thirty-nine percent of the sample had only sipped or tasted alcohol (35% of 8-year-olds and 48% of 10-year-olds), while 6% reported having had a drink of alcohol (5% and 7%, respectively). African American children were less likely than white children to be sippers. Neither gender nor mother's education related to sipping status. Most sipping was done in a family context. Sipping/tasting did not generally relate to variables reflecting psychosocial proneness for problem behavior. Instead, the variables most predictive of sipping/tasting were perceived parents' drinking status, perceived parents' approval for child sipping, mother's drinking frequency, and children's attitudes toward sipping/tasting alcohol.

Conclusions—Young children's sipping/tasting of alcohol reflects parental modeling of alcohol use and increased opportunities to try alcohol in the home rather than deliberate family socialization of alcohol use, and appears not to be a precocious manifestation of a psychosocial proneness to engage in problem behavior.

Keywords

Alcohol; Children; Epidemiology

INTRODUCTION

There is evidence that it is normative for teenagers in the U.S. and Europe to have had at least some experience with alcohol (Hibell et al., 2004; Johnston et al., 2006). This widespread use of alcohol and the possibility of negative consequences make it necessary for us to develop a better understanding of the progression into alcohol use among children and adolescents.

Developmental studies have shown that children as young as 3 to 5 years old can recognize alcoholic beverages by their smell (Fossey, 1994; Noll et al., 1990), that children as young as 3 have developed alcohol schema (Zucker et al., 1995), and that children as young as age 8 have developed a concept of alcoholic drinks (Jahoda and Cramond, 1972; Fossey, 1994). Several reviews have established quite clearly that children have definite attitudes about alcohol drinking, stereotypes about drinkers, and schema and expectancies concerning the effects of drinking (Lang and Stritzke, 1993; Maisto and Carey, 1985).

In developmental research investigating escalation of alcohol involvement, it may well be appropriate to examine different alcohol use behaviors for children than for adolescents. For example, there is little evidence that children exhibit problematic levels of involvement with alcohol such as alcohol abuse or dependence. In the few studies that have examined this, the incidence of diagnosed alcohol use disorders at age 12 and under is close to zero in the general population (Cohen et al., 1993; Giaconia et al., 1994; Sung et al., 2004). Subclinical levels of alcohol problems are only slightly more prevalent in childhood (see Chen et al., 1999; Stevens et al., 1991). There is thus an upper limit to the dimension of alcohol involvement in childhood that falls well short of the alcohol use disorders that are appropriately studied in adolescents and adults.

At the lower end of the dimension of alcohol involvement in childhood is the behavior of sipping or tasting alcoholic beverages, the focus of the present paper. This behavior is clearly relevant for investigations of children's alcohol use but has received little previous attention. In the literature on adolescent drinking, sipping or tasting alcohol has generally been ignored. For example, research on adolescent drug use often asks if adolescents had ever had any alcohol, an approach that does not distinguish between those who have only sipped or tasted others' drinks and those who have consumed their own drinks. In contrast to this are studies that explicitly exclude sipping and tasting by asking adolescents if they had ever tried more than a sip of alcohol or more than a few sips of alcohol (e.g., Johnston et al., 2006), treating sippers/tasters as abstainers never exposed to alcohol. This treatment of sippers/tasters makes the implicit assumption that this is a benign behavior.

At present, there are no good estimates of how many children or adolescents in the United States have only sipped or tasted alcohol. In the absence of explicit questions about this behavior, a crude estimate of its prevalence can nevertheless be derived. For adolescents, this can be done by taking the difference between prevalence estimates based on "any alcohol use" (which include sipping) and estimates based on "having more than a few sips" (which exclude sipping). The annual Monitoring the Future survey of American teenagers asked about "any alcohol use ever" from 1975 through 1992, and switched in 1993 to asking about "more than a few sips ever" (Johnston et al., 1995). In that year, half of the questionnaires administered used each approach. Among eighth graders, 67.1% reported use of any alcohol whereas 55.7% reported more than a few sips, from which we infer that 11.4% had sipped alcohol but had not progressed to more than a few sips. Analogous calculations lead to estimates that 9.2% of tenth graders (80.8% minus 71.6%) and 7.0% of twelfth graders (87.0% minus 80.0%) had only sipped or tasted alcohol according to these 1993 data. Within adolescence, then, the prevalence of having only sipped or tasted alcohol is low, and constitutes a smaller and smaller proportion of those exposed to alcohol as more and more adolescents transition from only sipping or tasting alcohol into drinking as they get older.

Higher prevalence of sipping or tasting (but not drinking) alcohol could be expected among children aged 12 and under. For this population, the prevalence of sipping/tasting can be inferred by comparing prevalence estimates from two separate U.S. national surveys performed at about the same time. The first is a 1997–98 World Health Organization (WHO) survey of a national sample of 1,558 U.S. 11-year-old children carried out as part of a large international

study of health behavior (Currie et al., 2000). The second is the 1997 Partnership Attitude Tracking Study (PATS; sponsored by the Partnership for a Drug-Free America), which surveyed a national probability sample of 2,400 elementary school students (A. Lilliston, personal communication, December 20, 2002; see also Donovan, 2007). In the WHO U.S. sample (average age 11.9 years old), 62% of boys and 58% of girls had ever tasted alcohol. In the PATS study, 27% of 11–12 year old children had had more than just a sip of alcohol. Taking the difference, we infer that about a third of 11–12 year olds in the U.S. in 1997 had only sipped or tasted alcohol. This is a substantial number of children whose experience with alcohol has generally either been discounted or exaggerated. U.S. national survey data are unfortunately not available to estimate the prevalence of sipping or tasting alcohol among children younger than this. Nor are there U.S. national studies that permit us to characterize children who sip or taste alcohol at such young ages.

A single study in the U.S., the Bogalouza (Louisiana) Heart Study, supports this prevalence estimate of child sipping/tasting. In this study, carried out in 1993–94, 30% of the third- through sixth-graders (aged 8–11) had only tasted alcohol, and another 5% had somewhat more experience with alcohol (Johnson et al., 1997). Among those children who had tried alcohol, wine coolers were the beverage most often tried, followed by beer. Most (78%) had tried alcohol with someone in the family, and they usually either drank from someone else's drink (32%) or obtained the alcohol from someone in their family (56%).

Four studies outside of the U.S. have examined children's sipping or tasting of alcohol and the contexts in which it occurred. In a classic study of Scottish children, Jahoda and Cramond (1972) found that 60% of 6-, 8-, and 10-year-old children had tasted alcohol, and that boys were more likely than girls to have tasted it. Alcohol was most often tasted in the home and was provided by either the father (84%) or by the mother or another relative (16%). A recent study (Fossey, 1994) replicated these results in Edinburgh, Scotland and Birmingham, England. In a longitudinal study in Dunedin, New Zealand, 59% of 9-year-old boys and 74% of 9-year-old girls had had just a sip of alcohol, while another 29% of boys and 11% of girls had had a drink of alcohol (Casswell et al., 1991). By age 11, only 41% of boys and 50% of girls were still considered sippers, whereas another 44% of boys and 29% of girls had had their own drinks. Almost all of this child drinking took place at home and in the presence of parents, and two-thirds of them said they were given their first taste by their fathers (Casswell, 1996). In a third study, in Australia, Cameron et al. (2003) found that 61% of third graders and 78% of fifth graders had at least tasted beer, and that 65% and 84%, respectively, had at least tasted wine. Child sipping or tasting of alcohol may thus be more common in Britain, New Zealand, and Australia than in the U.S., a speculation that would need to be confirmed using more representative samples.

It is clear from these studies that alcohol sipping or tasting by young children occurs most often in the family context and that it may reflect explicit family socialization into alcohol use. This is in distinct contrast to what we know of adolescent drinking. Alcohol use among adolescents occurs more often in peer contexts such as outside the home, unsupervised parties, outdoors, and in cars than at home or with parents (Lee et al., 1997; Treno et al., 2000). While parental drinking and parental approval of teen drinking do relate to adolescent drinking, the variables that tend to be most predictive of the initiation and intensity of adolescent drinking are the adolescent's tolerance of deviance, involvement in delinquent and other problem behaviors, and adolescent perceptions of peer approval and models for drinking and drug use (Akers et al., 1979; Brook and Brook, 1988; Bucholz, 1990; Donovan, 2004; Donovan et al., 1999; Jessor and Jessor, 1977). These variables are also important components of the social-psychological framework of Problem Behavior Theory (Jessor and Jessor, 1977). According to this theory, the personality, social environment, and behavior variables of the framework act together to

increase the adolescent's psychosocial proneness for involvement in problem behavior, including alcohol and drug use.

Although formulated for the explanation of variation in problem behavior involvement in adolescence, Problem Behavior Theory can be considered at least potentially relevant for the explanation of alcohol use among children as well. This is because of the theory's focus on behaviors that are in violation of socially-shared norms and particularly behaviors that violate age-graded norms. Age-graded norms specify, for example, that drinking is acceptable and appropriate for adults (or those above some legally-defined acceptable age) but is proscribed for those younger than this. Precocious involvement in alcohol use, that is, use by children, is thus potentially explainable in terms of greater psychosocial proneness for problem behavior at younger ages.

However, given that most previous research suggests that child sipping and tasting, the alcohol use behavior of interest here, occurs in the family context and with the approval of parents, we hypothesize in contrast that the most important predictors of sipping and tasting alcohol in children will not be variables that reflect psychosocial proneness for problem behavior. Rather, the predictors of child sipping/tasting should reflect the child's perceptions of parental approval and modeling of alcohol use within the family and the child's internalization of parental approval of child sipping/tasting. Only one previous study (Johnson et al., 1997) has examined the child correlates of sipping or tasting. Significant predictors of having tried alcohol (most often tasting) were being white, male gender, higher mother's education, friend's drinking, family member drinking, and believing that drinking helps to calm people. Thus, only a few variables to date have been examined to characterize children who have sipped or tasted alcohol.

In the present paper, we describe the experience with alcohol of a community sample of 8- and 10-year-old children. In addition to examining gender, age, and racial differences in sipping and tasting alcohol, we carried out logistic regression analyses to determine the psychosocial variables that are associated with this behavior among these children. These analyses should advance understanding of children's initial experiences with alcohol use and should thereby set the stage for prospective study of the childhood precursors of adolescent drinking and problem drinking.

METHODS

Data were drawn from the first wave of an ongoing longitudinal study of the risk factors for early onset of alcohol use (the Tween to Teen Project). Human subject procedures used in the research were approved by the University of Pittsburgh Institutional Review Board. A Certificate of Confidentiality was provided by the National Institute on Alcohol Abuse and Alcoholism to help us protect the identities of participants in the research.

Procedures

Families were selected for participation using targeted-age directory and random digit dialing (RDD) sampling of families in Allegheny County, Pennsylvania (population 1.3 million) which includes the city of Pittsburgh. The directory listings were provided by Survey Sampling Inc. (Fairfield, CT) which uses sources such as school registration lists, magazine subscription lists, etc. to identify households likely to have children between the ages of 6 and 11. The goal was to locate families that included either an 8-year-old or 10-year-old target child and the child's biological mother. Cohorts of 8 and 10 year old children were recruited in order to capture children before they had initiated regular alcohol use, and to establish an accelerated longitudinal design. The stipulation that the children had to be living with their biological mother was an attempt to constrain the large potential variability in family structures that could

otherwise obtain (e.g., grandparent caretakers, single fathers, adoptive parents, etc.). Quotas were imposed to ensure that half of the families included an 8-year-old; half of each age-cohort would be female; and single-mother headed families were over-sampled as were African-American families (according to the 2000 U.S. Census, only 12% of Allegheny County is African-American; only 6% of households in the county were headed by a woman with no husband and with children under the age of 18). Single-mother and African-American families were over-sampled to ensure that group comparisons could be made. Additional RDD lists were purchased from Genesys, Inc. (Fort Washington, PA) to target telephone exchanges with more than 30% African-American families.

Initial contacts were carried out between March 2001 and June 2002 by the Survey Research Center of the University Center for Social and Urban Research (UCSUR) at the University of Pittsburgh. Telephone calls were placed to families listed in the targeted-age directory and later to families whose telephone numbers were provided on the RDD lists. Mothers were asked if they would be interested in being contacted about participation in a study that would involve interviewing their child every six months and themselves and their partner (if present) annually for 3 years. Contact information was gathered and a letter was sent describing the research. Tween to Teen Project staff then called to verify the family's eligibility and to determine if the family met one of the recruitment quotas. Eligible families were scheduled to take part in computer-assisted interviews either in their homes or at our research offices.

Signed parental consent was secured prior to the interviews. Children and parents also provided personal assent. Interviews were read to the children to ensure they were understood, and children responded using the computer mouse. Mother and father/partner computer-assisted interviews were completed independently in a separate room. Target children were paid \$15 and parents were each paid \$50.

Participants

Of the 1155 potentially eligible families identified by UCSUR, we were unable to recontact or screen 251 (did not return or answer our calls) and another 100 were ineligible (e.g., child was the wrong age or not a biological child, or the relevant quota had already been filled). Of the remaining 804 eligible families, 504 (63%) agreed to participate and 452 completed the Wave 1 interviews (90% of those who agreed and 56% of those eligible). Participants did not differ significantly from the other 703 families (Unable to Re-contacts, Ineligibles, Refusals, Non-completers) on variables collected by UCSUR in the screening interviews of mother's education ($\chi^2=9.2$, $df=6$, $p=.16$), race ($\chi^2=0.79$, $df=2$, $p=.67$), or age cohort of the target child ($\chi^2=1.7$, $df=1$, $p=.20$). Of these comparison groups, only the Noncompleting families had provided consent for us to use their data. Table 1 presents descriptive information on the participating sample.

Children's Self-Reports of Sipping/Tasting

The computer-assisted interview was read to the children by the project interviewers. Children were encouraged to ask for help at any point. The children themselves clicked on the mouse to answer. Following a statement that "drinks like beer, wine, and liquor contain alcohol," the first question on alcohol use asked children, "Have you ever had a sip or a taste of beer, wine, or liquor?" (Responses: No; Yes, once; Yes, 2 or 3 times; and Yes, more than 2 or 3 times). They were also asked if they had ever had a drink of alcohol (not just a sip or a taste of someone else's drink) in their life.

Description of Sipping or Tasting

The question on lifetime experience of sipping or tasting was followed immediately by the following additional questions about this behavior: Frequency of Sipping/Tasting, a question

asking how many times they had ever had a sip or a taste of beer, wine, or liquor in their life (once to more than 40 times); Contexts of Sipping/Tasting, a question asking respondents to mark all of the places (out of 6) where they had sipped or tasted beer, wine, or liquor including as part of a religious observance, with family at dinner, as part of a family celebration or party, with friends, by myself, and somewhere else; and Alcoholic Beverages Sipped/Tasted, a question asking respondents to mark all of the kinds of alcohol drinks they had sipped or tasted (beer, wine, wine coolers, liquor, I don't know). Popular brands of beer and types of liquor were named.

Measurement of Family Approval and Models for Alcohol Use

In various parts of the computer-assisted interview, children were asked about their own and others' attitudes and behavior with respect to alcohol use. In addition, parents were asked about not only their own drinking practices, but also their approval and knowledge of their child's sipping/tasting alcohol. For the present paper, items concerning sipping or tasting were extracted from longer multiple-item scales focused on drinking more generally.

Child-reported perceptions of parental attitudes and behavior included the following: Perceived Parent Approval of Sipping/Tasting, a single question asking how their parents feel about someone their age having a sip of someone else's drink (high score = greater approval); Parental Alcohol Socialization, a 5-item scale asking the child how often his/her parents talked to her/him about not drinking, about how they felt about children his/her age drinking, about the dangers of drinking, about what would happen if they were caught drinking, and about how alcohol makes people act ($\alpha=.87$); Mother's Perceived Drinking Status, a question asking if their mother drinks beer, wine or liquor; and Father's Perceived Drinking Status, a similar question about their father.

Measures derived from the mother and father interviews include the following: Mother's Approval of Child Sipping, a 3-item scale assessing her approval of someone her child's age sipping or tasting someone else's drink or having a sip during a family dinner ($\alpha=.76$); Father's Approval of Child Sipping, a 3-item scale assessing his approval of someone his child's age sipping or tasting someone else's drink or having a sip during a family dinner ($\alpha=.69$); Mother's Alcohol Socialization, a 5-item scale identical to the child measure above, asking how often the mother talked to her child about drinking ($\alpha=.88$); Father's Alcohol Socialization, the same 5-item scale asking how often the father talked to the child about drinking ($\alpha=.92$); Mother's Knowledge of Child Sipping, a single question asking the mother if her child had ever had a sip or a taste of someone else's beer, wine, or liquor; Father's Knowledge of Child Sipping, a single question asking the father if the child had ever had a sip or a taste of someone else's beer, wine, or liquor; Mother's Drinking Frequency, a 3-item measure assessing how often the mother drank beer, wine, and liquor in the past six months; Father's Drinking Frequency, the same 3-item measure assessing how often the father drank in the past six months; Density of Family Alcohol Problems, a measure of the proportion of the child's first- and second-degree biological relatives who the mother reported as having an alcohol problem on the Mann Family Tree (Mann et al., 1985); Mother's Religion's Alcohol Doctrine, a question asking whether her religion thought drinking alcohol was acceptable or forbidden (0 versus 1; "no religion" scored as 0); and Father's Religion's Alcohol Doctrine, a question asking whether his religion thought drinking alcohol was acceptable or forbidden.

Measurement of Child Psychosocial Proneness for Problem Behavior

Problem Behavior Theory (PBT: Jessor and Jessor, 1977) comprised one of the main theoretical frameworks relied upon in this research. In this framework, variables from the personality system, the perceived environment system, and the behavior system contribute to an overall level of proneness to problem behavior. Measures of selected variables were modified for use

with children and incorporated into the computer-assisted interviews. In the present paper, the variables included are those that relate most consistently to adolescent drinking. The following personality system measures were assessed: Value on Academic Achievement, a 5-item scale reflecting the personal importance of doing well in school ($\alpha=.60$); Expectation for Academic Achievement, a 5-item scale assessing the child's subjective likelihood of doing well in school ($\alpha=.72$); Attitudinal Intolerance of Deviance, a 10-item scale reflecting the rated "wrongness" of behaviors like defacing property, lying to parents, shoplifting, aggression ($\alpha=.84$); Personal Attitude toward Sipping/Tasting, a 3-item scale assessing child approval of sipping or tasting someone else's drink or having a sip during a family dinner ($\alpha=.64$); and Religiosity, a 6-item scale measuring the personal importance of religious guidance for the direction of daily life ($\alpha=.82$).

Measures of the following perceived environment system variables were also assessed: Susceptibility to Peer Pressure, a 4-item measure developed by Dielman et al. (1993) asking how likely it would be for them to tear a page out of a library book, skip school, smoke a cigarette, or have a drink, if a friend dared them or offered a cigarette or a drink ($\alpha=.63$); Peer Pressure for Smoking, a 2-item scale asking if close friends ever tried to get the child to try a cigarette or offered him/her one ($\alpha=.82$); Perceived Friends' Approval of Sipping/Tasting, a single question asking how their close friends feel about someone their age having a sip of someone else's drink (high score = greater approval); and Peer Pressure for Drinking, a 2-item scale asking if friends ever try to get the child to try a drink of beer and if friends have offered the child a drink of beer, wine or liquor ($\alpha=.77$).

Measures of the following behavior system variables were assessed using child self-reports: General Deviant Behavior, a 14-item measure of frequency of lying, cheating, stealing, and aggression in the past 6 months ($\alpha=.76$); Religious Behavior, a 3-item measure of frequency of church attendance, religious instruction, and religious youth group involvement in the past 6 months ($\alpha=.70$); School Activities, a 3-item index reflecting the number of clubs and additional activities, helping out at school, and doing jobs at school; and Prosocial Activities, a 3-item measure of the child's involvement in activities such as helping homeless people or the elderly, cleaning up the environment, and collecting toys or clothes for the needy in the past six months ($\alpha=.61$).

Greater proneness for problem behavior is indicated by lower value and expectation for academic achievement, greater personal approval of sipping/tasting alcohol, lower religiosity, lower intolerance of deviance, greater susceptibility to peer pressure, greater peer pressure for smoking and drinking, greater friends' approval of sipping/tasting alcohol, more frequent deviant behavior, less frequent religious behavior, less involvement in school activities, and less prosocial activity. It is hypothesized that these measures of psychosocial proneness for problem behavior will not relate strongly to child sipping/tasting despite their history of relation to adolescent drinking.

Analytic Procedures

Analyses describing the relation of socio-demographic variables to sipping/tasting were performed using cross-tabulations and logistic regression analyses, using SPSS Version 13.0. Analyses describing the characteristics of sipping/tasting within the sample relied upon frequency distributions and Pearson chi-square tests. Sippers who also reported drinking ($n=18$) were excluded from the logistic analyses in order to avoid confounding the comparisons of abstainers and sippers.

Logistic regression analyses were performed within each age cohort (8-year-olds and 10-year-olds) predicting variation in the binary (0,1) dependent variable of sipping/tasting status (Hosmer & Lemeshow, 2000). The univariate relations of the predictor variables to sipping/

tasting were determined by performing logistic regression analyses consisting of just the predictor and the constant. For each variable, its regression coefficient, standard error, and the Wald test are reported in the tables. Odds ratios, estimated as $\text{Exp}(B)$, and their 95% confidence intervals (95% CI) are also reported in the tables. Significant confidence intervals for the odds ratios are those that do not include the value of 1.00. All variables with a significant Wald test in the univariate logistic analyses were entered into a multivariate logistic regression for each age-cohort using forward stepwise selection procedures. At each step, the variable with the smallest significance level of its score statistic was selected for entry if its significance was below the threshold level of $p < .05$. Additional steps were performed until none of the remaining unselected variables still had a score statistic with a probability less than .05. The overall fit of the logistic model at the final step was determined by the (non)significance of the Hosmer-Lemeshow Test.

RESULTS

This section is organized into five parts. First, we present information on the prevalence of sipping and tasting among the children. Second, we describe the characteristics of this behavior. Third, we present the univariate logistic regression analyses predicting sipping/tasting using the measures of family approval and models as predictors. Fourth, we examine the utility of the measures of psychosocial proneness for problem behavior as predictors of child sipping/tasting. Lastly, we present the results of the multivariate logistic regression analyses.

Prevalence of Sipping and Tasting Alcohol

Of the 452 children in the sample, 195 (43%) reported that they had ever had a sip or a taste of beer, wine, or liquor in their life. Only 26 (6%) of the 452 children reported having had a drink of alcohol (“not just a sip or a taste of someone else’s drink”). The majority of these 26 drinkers (18 or 69%) also reported having sipped or tasted alcohol, and this group constitutes 9% (18 of 195) of the sippers/tasters. In order to constitute a group in which the children had only sipped alcohol, the 18 sippers who were also drinkers were excluded, resulting in a group of 177 sippers/tasters (39% of the overall sample). This is the group examined in all subsequent analyses.

Age Cohort Differences—Comparison of the two age-cohorts shows that 48% of the 10-year-olds were sippers versus 35% of the 8-year-olds ($\text{OR}=1.71$, 95% CI = 1.16, 2.53). Few of the sippers in either cohort had much experience: 62% of the 8-year-olds and 54% of the 10-year-olds had sipped just once; 14% and 20% had sipped twice; 13% and 12%, respectively, had sipped 3–5 times; and only 11% and 14%, respectively, had sipped 6 or more times in their lives.

Gender Differences—Overall, boys and girls did not differ in the percent sipping or tasting alcohol: 43% of the boys versus 41% of the girls ($\text{OR}=0.91$, 95% CI = 0.62, 1.35). Nor did they differ in their frequency of sipping. Within each age-cohort, similar percentages of boys and girls had sipped alcohol: among 8-year-olds, 38% of boys and 33% of girls had sipped alcohol ($\text{OR}=0.79$, 95% CI=0.44, 1.41); among 10-year-olds, 47% and 49%, respectively, had sipped alcohol ($\text{OR}=1.08$, 95% CI=0.64, 1.83).

Racial Differences—White children were nearly twice as likely as African-American children to have sipped or tasted alcohol: 46% versus 27%, respectively ($\text{OR}=2.35$, 95% CI=1.44, 3.85). (“Other” children were excluded due to small numbers.) Among 8-year-olds, the prevalence of sipping was 40% for white children versus 20% for African-American children ($\text{OR}=2.58$, 95% CI=1.23, 5.40). Among 10-year-olds, 52% and 34%, respectively, had sipped alcohol ($\text{OR}=2.08$, 95% CI=1.06, 4.09).

Socioeconomic Differences—Children were more likely to be sippers if their mother had attended or graduated from college: 46% of the children of college-educated mothers had sipped alcohol versus 33% of the other children (OR=1.70, 95%CI=1.11, 2.59). However, mother's education did not relate significantly to sipping within either age-cohort: for the 8-year-olds, OR=1.70 (95%CI=0.91, 3.20); and for 10-year-olds, OR=1.66 (95%CI=0.93, 2.97). Furthermore, when racial/ethnic group was held constant, the relationship was not statistically significant for either the African-American or the white children.

Family Composition—Rates of sipping or tasting did not differ for children in families headed by single mothers versus in families with partnered mothers. In single-mother families, 44% of the children had sipped alcohol versus 41% of children in partnered-mother families (OR=1.14, 95%CI=0.73, 1.79). The odds ratios were also not statistically significant within either the age-cohorts or within the two racial groups.

Description of the Sipping/Tasting

Contexts of Sipping/Tasting Alcohol—The top half of Table 2 presents the percentage of sippers in the sample as a whole and within each age cohort who marked each of the possible contexts within which they had sipped or tasted alcohol. Percentages in each column do not sum to 100% because respondents could mark as many as applied. In the sample as a whole, the most frequent context of sipping was as part of a family celebration (36%), followed by sipping at a family dinner (33%), and sipping as part of a religious observance (25%). Sipping with friends and sipping alone were both very rare (2% for each). Sipping in contexts other than those named above was reported by 23% of the sippers. The two age-cohorts generally sipped in the same contexts. The only significant difference between age-cohorts was that older children were more likely to have sipped as part of family celebrations (23% vs. 45%; $\chi^2=9.5$, $df=1$, $p=.002$). Sipping with the family at dinner was reported by 41% of 8-year-old sippers and by 28% of 10-year-old sippers ($p>.05$). None of the 8-year-old sippers had sipped alone or with friends.

Eighty-four percent of the sippers reported having sipped alcohol in just a single context (those percentages in parentheses in the table). Almost one-sixth (15%) of the sippers had only had alcohol as part of religious observances. One quarter (24%) of the sippers had only sipped alcohol with the family at dinner. One quarter (27%) had only sipped alcohol as part of a family celebration. Sixty-four percent of the sippers reported sipping in either or both of these two family contexts (family dinners and celebrations). One percent had only sipped alone, and 1% had sipped only with friends. One-sixth (16%) had only sipped “somewhere else.”

Beverages Sipped—Table 2 also reports the alcohol beverages that sippers reported having consumed. Overall, wine had been sipped by more of the sippers than had beer (by 55% and 38% of sippers, respectively). Few of the sippers had sipped either wine coolers (5%) or liquor (3%). A substantial number (14%) did not know what type of beverage they had sipped. None of the beverages was significantly ($p < .05$) more popular or less popular as a function of age. Most sippers (85%) had tried only a single type of alcohol beverage (27% beer, 41% wine, 3% wine cooler, 1% liquor, 13% unknown beverage). The only frequent pattern of experience with several beverages involved beer and wine, reported by 10% of the sippers. Two percent of sippers had had both wine and liquor. Other combinations were reported by one percent or less of the sippers.

Family Correlates of Child Sipping/Tasting

Table 3 presents the univariate relations of the 16 family variables to sipping/tasting status derived from logistic regression analyses within each age-cohort. As may be seen, nine variables related significantly (by the Wald test) to sipping/tasting for the 8-year-old cohort,

and ten variables related significantly for the 10-year-old cohort (see table for Odds Ratios and 95% CIs). The eight variables significant for both age-cohorts were the following: Perceived Parent Approval of Sipping/Tasting; Perceived Mother's Drinker Status; Perceived Father's Drinker Status; Race; Mother's Approval of Child Sipping; Mother's Knowledge of Child Sipping; Father's Knowledge of Child Sipping; and Mother's Drinking Frequency. In addition to these variables, Father's Drinking Frequency related significantly for the 8-year-old cohort; and Father's Approval of Child Sipping and Father's Religion's Alcohol Doctrine related significantly for the 10-year-old cohort. None of the Alcohol Socialization measures related significantly to child sipping/tasting. Density of Family Alcohol Problems also failed to relate. Fully a third of the mothers and over half of the fathers did not know that their child had ever had a sip or a taste of alcohol. Mothers who did not know their child had sipped ($n=77$) were less hostile, monitored less, drank less, and approved less of children sipping than mothers who did know ($n=118$). Fathers who did not know their child had sipped ($n=80$) scored higher on the Psychoticism scale of the BSI (Derogatis and Melisaratos, 1983) and were less approving of child sipping than father who did ($n=60$).

Psychosocial Proneness Correlates of Child Sipping/Tasting

Table 4 presents the univariate logistic regressions predicting sipping/tasting using the measures of psychosocial proneness for problem behavior as predictors. Of the 13 variables examined, only three were significant predictors for the 8-year-old cohort, and two were significant predictors for the 10-year-old cohort. Two variables related significantly for both cohorts: Attitude toward Sipping/Tasting and Perceived Friends' Approval of Sipping/Tasting. Expectations for Academic Achievement related significantly and negatively for just the 8-year-old cohort. In summary, only those variables in this set that explicitly reference sipping and tasting bear a consistent significant relation to this behavior. Variables reflecting problem-behavior proneness more generally did not relate to child sipping/tasting.

One-way analyses of variance were performed to compare abstainers ($n=249$), sippers ($n=177$), and drinkers who also had sipped or tasted ($n=18$) on the 29 family and psychosocial proneness variables examined above (results not tabled). While 17 of the analyses (6 on proneness variables) resulted in statistically significant F-ratios, Scheffé multiple range tests found only one significant difference (on peer susceptibility) between the sippers and the sippers/drinkers. Had we included these 18 sippers/drinkers in the sipper group examined above, this would have had little to no influence on the results obtained.

Multivariate Logistic Regressions Predicting Child Sipping/Tasting

Table 5 presents the results of the logistic multiple regressions predicting sipping/tasting status within each of the two age-cohorts. The coefficients tabled are from the final step of the stepwise analyses. In these analyses, there were only three significant predictors within each of the two age-cohorts. For the 8-year-old cohort, the significant predictors, in order of entry, were Perceived Parent Approval of Sipping, Perceived Father Drinking Status, and Child Attitude toward Sipping. For the 10-year-old cohort, the significant predictors were Perceived Mother Drinker Status, Mother's Drinking Frequency, and Child Attitude toward Sipping. In both cohorts, two family variables were selected for entry into the logistic regressions before the measure of child attitude toward sipping.

Taken together, these three psychosocial variables accounted for 41.4% of the variance (from the conservative Cox-Snell R -square) in sipping for the 8-year-old cohort and for 25.6% of the variance for the 10-year-old cohort. The logistic regression equations fit the data well in both cohorts according to the Hosmer-Lemeshow Test ($\chi^2=5.00$, $p=.66$, $df=7$ for 8-year-old cohort; $\chi^2=10.41$, $p=.24$, $df=8$ for the 10-year-old cohort). The logistic regression equations correctly

classified 83.0% of the 8-year-olds and 72.2% of the 10-year-olds on their observed sipping-tasting status.

DISCUSSION

Substantial numbers (39%) of the 8- and 10-year-old children in our sample report having sipped or tasted alcohol in their lives, whereas few of them (only 6%) report having had a drink of alcohol (not just a sip or taste of someone else's drink). These rates for sipping and for drinking in young children are consistent with the rates found in earlier U. S. research by Johnson et al. (1997), in which 30% of the 3–6th graders were sippers and 5% were drinkers. Present results also show an age-related difference in sipping/tasting rates, ranging from 35% for 8-year-olds to 48% for 10-year-olds. Similar to results found in research on adolescent drinking, there were no significant differences between rates of sipping/tasting for boys and girls. Our finding that African-American children were less likely to have sipped or tasted alcohol at these young ages than were white children is similar to results found in adolescents. In that literature, African-American adolescents are generally less likely to be drinkers than are white or American Indian adolescents (Johnston et al., 2006).

The majority (almost two-thirds) of child alcohol sippers/tasters in this sample reported that their sipping occurred in family contexts, either as part of family dinners or as part of family celebrations. This sipping within family contexts, to the extent that it is a regular occurrence, could be interpreted as evidence for parental socialization of their children's alcohol use. Few of these sippers, however, report frequencies of sipping that would support this interpretation. Most had sipped alcohol only once or twice, implying that this was opportunistic behavior rather than part of a family or cultural tradition or part of a structured introduction to the use of alcohol in a family context.

This interpretation of sipping as an opportunistic behavior is bolstered by the finding that, for most sippers, their exposure to alcohol occurred either in one or the other of the two family contexts—either as part of a family dinner or during a family celebration. Few children (just 6%) reported having sipped alcohol in both of these family situations. In conjunction with the infrequency of their experience, this specificity of context argues for a more opportunistic exposure to alcohol within households where parents are drinkers and alcohol is available, in contrast to a more deliberate introduction to alcohol by their parents. That child sipping/tasting failed to relate to either child or parental reports of explicit discussions about alcohol use further bolsters this interpretation. While parental knowledge of their child's sipping was predictive in the analyses, fully a third of the mothers and over half of the fathers did not even know that their child had ever had a sip or a taste of alcohol. Parents who knew their child had sipped alcohol tended to also approve of children's sipping and to monitor their child more than those who did not know. The most likely explanation for many parents not knowing about their child's sipping is that many of the sippers in our sample either sneaked a sip when their parents (particularly their father) were not watching or were given a sip on the sly by another family member (older siblings, aunts, uncles, etc.).

Parental modeling of alcohol use is clearly a factor in children's sipping/tasting, beyond the sheer availability of alcohol in the home. Both children's exposure to parental drinking, as captured in the measures of perceived parental drinking status, and parents' self-reported frequency of drinking increased the likelihood of child sipping and tasting, as did children's perceptions of parental approval of child sipping/tasting and parental reports of their own approval of child sipping. If child sipping/tasting were a consequence of the mere availability of alcohol in the home, that is, if perceived parental drinking status were simply a proxy indicator for the likely presence of alcohol in the home, more frequent parental drinking and greater approval of child sipping would not further increase the likelihood that children in the

home would have tried sipping alcohol. The significant influence of parental models and approval for alcohol use thus argues against a “mere availability” interpretation of the results.

One of the most intriguing questions about this early exposure to alcohol concerns its implications for risk for later involvement in problematic alcohol use. Early onset alcohol use has been shown to be significantly associated with an increased likelihood of developing alcohol problems in adolescence (Gruber et al., 1996; Hawkins et al., 1997; Pedersen & Skrondal, 1998) and alcohol use disorders in adulthood (DeWit et al., 2000; Grant & Dawson, 1997). Alcohol is also one of the gateway drugs in the progression into illicit drug use (Kandel, 2002). Whether sipping/tasting alcohol in middle childhood increases risk for these later outcomes or whether it serves as a protective factor reducing risk for such outcomes is unclear and warrants further research. Having some alcohol as a regular part of mealtimes in a family context has long been viewed as a forerunner of moderation in alcohol use (Bacon & Jones, 1968), despite the absence of empirical verification.

The absence of patterns of sipping alcohol across multiple social contexts and of reports of exposure to several different alcohol beverages in these data are probably due to the low frequency of sipping and tasting in this sample of young children. If a child has only sipped alcohol once or twice, patterns involving multiple contexts or multiple beverages are either impossible or unlikely. Children older than 8 or 10 years of age might be expected to show greater frequency of use and greater variability of both contexts of use and of beverages consumed.

The location of child sipping and tasting in the family context led to our hypothesis that such alcohol use would be unlikely to reflect the same characteristics as later and more intensive adolescent drinking, which generally does not occur in family contexts. This expectation was generally confirmed in the logistic regression analyses. Usually, the lack of statistical significance is not interpreted as a positive finding. In the present case, however, in the context of hypotheses predicting this result, the generally satisfactory inter-item reliability ($\alpha \geq .70$) of the measures, their previous history of relation to drinking in adolescence, and the fact that these measures show their theoretically-predicted intercorrelations in this sample, the general lack of relation of these measures to sipping/tasting is interpreted as a positive finding. It should be clear, however, that this lack of relation of problem-behavior proneness measures to child sipping/tasting does not imply that these variables would not relate as expected to greater levels of alcohol involvement in children, just as they do in adolescents.

The two psychosocial proneness variables that did correlate with sipper status in these child cohorts were the highly proximal variables of child attitudes toward sipping/tasting and their perceptions of their friends' approval of this behavior. Children with positive attitudes toward sipping not only were more likely to be sippers, they also perceived that both their parents and their close friends approved of sipping or tasting alcohol. In the multivariate analysis, however, perceived friends' approval became nonsignificant, probably due to its correlation with both personal attitudes toward sipping and perceived parent attitudes toward sipping/tasting. Longitudinal analyses are, of course, necessary to determine whether the alcohol sipping/tasting of these children is the result of internalization of parental attitudes toward alcohol, their imitation of their parents' drinking, or whether it reflects the selection of friends with congruent attitudes who come from like households.

Several considerations should be kept in mind when evaluating these findings. First, this research is based on children from families drawn from a single county in the northeastern United States. While geographically localized, the sample does include families from both urban and suburban areas, white and African-American families, and families headed by single mothers as well as two-parent families. Like the county from which it was drawn, however,

the sample does not include many Hispanic or Asian American families. Given our over-sampling of African-American families and given the lower rate of sipping we found among African-American children, the prevalence of children's sipping/tasting in this sample probably underestimates its actual prevalence in Allegheny County. In contrast, the present over-sampling of single-mother headed families probably had little effect on the estimated prevalence of children's sipping/tasting (given the lack of relation of this variable to child sipping). The prevalence of child sipping/tasting found in this sample, however, may not apply to areas of the U.S. that are substantially different from this. Clearly, statewide and national surveillance studies of children's alcohol use (including sipping and tasting) are needed (see Donovan, 2007).

Second, like other studies requiring a commitment for multiple waves of participation by many family members, including mothers, fathers, and older siblings, the participation rate among eligible families was somewhat low. Comparison of the refusing families with those who did take part, however, showed no significant differences in mother's educational attainment, an important factor influencing children's health-related behavior (Hauser, 1994; Zill, 1996), race, or age of the target children. Third, the measure of child sipping/tasting is based only on self-reports. Self-reported alcohol use data, however, have been shown to be valid in both adolescent (Brener et al., 2003; Smith et al., 1995; Winters et al., 1990–91) and child samples (Dielman et al., 1995; Donovan et al., 2004), and the use of computer-assisted interviewing has been shown to result in higher levels of self disclosure of sensitive information (Turner et al., 1998). A fourth limitation is our failure to ask which parent in two-parent homes actually gave the child a sip or a taste of alcohol. This would have been important descriptive information.

The present findings are important because they extend our concern with alcohol use further "upstream" developmentally and because they remind us of the importance of the family context in the early involvement of children in alcohol use (see Donovan et al., 2004). Continued follow-up of these children as they move into preadolescence and adolescence should permit us to describe the natural history of their involvement with alcohol from this earliest stage onward as well as to determine whether such early alcohol exposure has implications for later problematic use.

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Table 1

Description of the Sample of Participants (452 Families).

	% (n)
Child Age-Cohorts by Gender	
8-year-old Boys	20% (92)
8-year-old Girls	26% (118)
10-year-old Boys	27% (122)
10-year-old Girls	27% (120)
Racial/Ethnic Background	
African-American	24% (110)
White	73% (331)
Other	2% (11)
Family Structure	
Mother and Husband/Partner	77% (346)
Single Mother	23% (106)
Parental Age	(Mean/SD)
Mother (n=452)	39.0 (5.7)
Father/Partner (n=320)	41.6 (6.6)
Mother's Highest Education	
Some High School	4% (17)
Graduated High School	15% (67)
Vocational-Technical Training	14% (64)
Some College	24% (109)
Graduated from College	32% (146)
Post-graduate Education	11% (49)
Mother's Religion	
Protestant	40% (182)
Roman Catholic or Orthodox	43% (193)
Non-denominational Christian	3% (14)
Jewish	2% (10)
Non-denominational	2% (7)
No Religion	8% (35)
Atheist or Agnostic	1% (6)
Other Unspecified, Muslim, or Buddhist	1% (5)

Table 2
Contexts of Sipping/Tasting and Beverages Sipped, by Age Cohort—Sippers Only.

	Total Sample (n=177)	8-Year-Olds (n=71)	10-Year-Olds (n=106)
<u>Contexts of Sipping/Tasting^a</u>			
1. As Part of a Religious Observance	25% (15%)	24% (16%)	26% (14%)
2. With Family at Dinner	33% (24%)	41% (32%)	28% (18%)
3. As Part of a Family Celebration	36% (27%)	23% (18%)	45% (32%)
4. With Friends	2% (1%)	0% (0%)	4% (2%)
5. By Myself	2% (1%)	0% (0%)	4% (1%)
6. Somewhere Else	23% (16%)	27% (23%)	21% (11%)
<u>Alcohol Beverage Consumed^a</u>			
Beer	38% (27%)	45% (37%)	34% (21%)
Wine	55% (41%)	49% (38%)	59% (43%)
Wine Cooler	5% (3%)	1% (1%)	8% (4%)
Liquor	3% (1%)	4% (1%)	3% (0%)
Do Not Know	14% (13%)	11% (11%)	16% (14%)
Beer & Wine	----(10%)	----(9%)	----(10%)
Beer & Wine Coolers	----(1%)	----(0%)	----(2%)
Wine & Liquor	----(2%)	----(3%)	----(2%)

^aPercent who checked only that single response is in parentheses.

Table 3
Univariate Relations of Family Variables to Child Alcohol Sipping/Tasting, by Age Cohort.

8-Year Old Cohort (n=204)				
	B	SE	Wald	OR (95%CI)
<u>Child Report Variables</u>				
Perceived Parent Approval of Sipping	0.579	.145	15.9***	1.78 (1.3–2.4)
Parent Alcohol Socialization	–0.041	.034	1.5	0.96 (0.9–1.03)
Perceived Mother’s Drinker Status	1.689	.319	28.0***	5.42 (2.9–10.1)
Perceived Father’s Drinker Status	1.871	.368	25.9***	6.50 (3.2–13.4)
<u>Parent Report Variables</u>				
Race (AA=0, Wh/Oth=1)	0.965	.390	6.1*	2.62 (1.2–5.6)
Mother’s Approval of Child Sipping	0.253	.068	13.8***	1.29 (1.1–1.5)
Father’s Approval of Child Sipping	0.018	.074	0.1	1.02 (0.9–1.2)
Mother’s Alcohol Socialization	0.043	.038	1.2	1.04 (0.97–1.1)
Father’s Alcohol Socialization	0.013	.042	0.1	1.01 (0.9–1.1)
Mother’s Knowledge Child Sipping	1.781	.321	30.7***	5.93 (3.2–11.1)
Father’s Knowledge Child Sipping	0.917	.371	6.1*	2.50 (1.2–5.2)
Mother’s Drinking Frequency	0.135	.066	4.1*	1.14 (1.004–1.3)
Father’s Drinking Frequency	0.219	.077	8.0***	1.24 (1.1–1.5)
Density of Family Alcohol Problem	–0.667	1.00	0.4	0.51 (0.1–3.7)
Mother’s Religion’s Alcohol Doctrine	–0.427	.366	1.4	0.65 (0.3–1.3)
Father’s Religion’s Alcohol Doctrine	–0.549	.507	1.2	0.58 (0.2–1.6)
10-year-old Cohort (n=222)				
	B	SE	Wald	OR (95%CI)
<u>Child Report Variables</u>				
Perceived Parent Approval of Sipping	0.611	.146	17.6***	1.84 (1.4–2.5)
Parent Alcohol Socialization	–0.043	.032	1.8	0.96 (0.9–1.02)
Perceived Mother’s Drinker Status	1.301	.283	21.1***	3.67 (2.1–6.4)
Perceived Father’s Drinker Status	0.867	.293	8.7**	2.38 (1.3–4.2)
<u>Parent Report Variables</u>				
Race (AA=0, Wh/Oth=1)	0.816	.333	6.0*	2.26 (1.2–4.3)
Mother’s Approval of Child Sipping	0.164	.057	8.1**	1.18 (1.1–1.3)
Father’s Approval of Child Sipping	0.161	.066	6.0*	1.18 (1.03–1.3)
Mother’s Alcohol Socialization	–0.052	.036	2.0	0.95 (0.9–1.02)
Father’s Alcohol Socialization	–0.035	.037	0.9	0.97 (0.9–1.04)
Mother’s Knowledge Child Sipping	0.909	.276	10.9**	2.48 (1.4–4.3)
Father’s Knowledge Child Sipping	1.112	.366	9.2**	3.04 (1.5–6.2)
Mother’s Drinking Frequency	0.278	.076	13.3***	1.32 (1.1–1.5)
Father’s Drinking Frequency	0.083	.064	1.7	1.09 (0.96–1.2)
Density of Family Alcohol Problem	0.144	.792	0.0	1.16 (0.2–5.5)
Mother’s Religion’s Alcohol Doctrine	–0.561	.357	2.5	0.57 (0.3–1.1)
Father’s Religion’s Alcohol Doctrine	–1.735	.654	7.0**	0.18 (0.05–0.64)

Note: Coefficients are from separate logistic regressions including a constant, predicting

Sipping/Tasting status. Odds Ratios [Exp(B)s] and their 95% Confidence Intervals are reported for all variables.

p<.001

**
p<.01

*
p<.05 (all two-tailed, df=1).

Table 4
Univariate Relations of Problem-Behavior Proneness Variables with Alcohol Sipping/Tasting, by Age Cohort.

8-Year Old Cohort (n=204)				
	B	SE	Wald	OR (95%CI)
<u>Child Report Variables</u>				
Value on Academic Achievement	0.019	.073	0.1	1.02 (0.9–1.2)
Expectations for Academic Achievement	–0.134	.063	4.6*	0.87 (0.77–0.99)
Intolerance of Deviance	–0.107	.065	2.7	0.90 (0.8–1.0)
Religiosity	0.021	.057	0.1	1.02 (0.9–1.1)
Attitude toward Sipping	0.626	.097	41.6***	1.87 (1.5–2.3)
Susceptibility to Peer Pressure	0.493	.347	2.0	1.64 (0.8–3.2)
Peer Pressure for Smoking	–0.081	.317	0.1	0.92 (0.5–1.7)
Friends' Approval of Sipping	0.570	.191	8.9**	1.77 (1.2–2.6)
Peer Pressure for Drinking	–0.277	.629	0.2	0.76 (0.2–2.6)
General Deviant Behavior	0.053	.033	2.6	1.05 (0.99–1.1)
Religious Behavior	0.013	.032	0.2	1.01 (0.95–1.1)
School Activities	0.059	.101	0.3	1.06 (0.9–1.3)
Prosocial Activities	–0.061	.083	0.6	0.94 (0.8–1.1)
10-Year-Old Cohort (n=222)				
	B	SE	Wald	OR (95%CI)
<u>Child Report Variables</u>				
Value on Academic Achievement	–0.033	.076	0.2	0.97 (0.8–1.1)
Expectations for Academic Achievement	–0.080	.063	1.7	0.92 (0.8–1.04)
Intolerance of Deviance	–0.097	.051	3.6	0.91 (0.8–1.004)
Religiosity	0.008	.046	0.3	1.01 (0.9–1.1)
Attitude toward Sipping	0.462	.077	36.0***	1.59 (1.4–1.8)
Susceptibility to Peer Pressure	0.377	.184	4.2*	1.46 (1.02–2.1)
Peer Pressure for Smoking	–0.101	.377	0.1	0.90 (0.4–1.9)
Friends' Approval of Sipping	0.675	.175	15.0***	1.97 (1.4–2.8)
Peer Pressure for Drinking	0.674	.448	2.3	1.96 (0.8–4.7)
General Deviant Behavior	0.040	.030	1.8	1.04 (0.98–1.1)
Religious Behavior	0.036	.028	1.6	1.04 (0.98–1.1)
School Activities	0.155	.103	2.3	1.17 (0.95–1.4)
Prosocial Activities	0.058	.076	0.6	1.06 (0.9–1.2)

Note: Coefficients are from separate logistic regressions including a constant, predicting Sipping/Tasting status. Odds Ratios [Exp(B)s] and their 95% Confidence Intervals are reported for all variables.

p<.001

**
p<.01

*
p<.05 (all two-tailed, df=1).

Table 5
Results of Stepwise (Forward Selection) Multivariate Logistic Regression Analyses Predicting Sipping/Tasting Status, by Age-Cohort

8-Year-Old Cohort (n=141)				
Variable Selected at Each Step	B	SE	Wald	OR (95%CI)
1. Perc. Parent Approval Sipping	0.577	.271	4.5*	1.78 (1.05–3.03)
2. Perc. Father Drinker Status	2.195	.574	14.7***	8.89 (2.92–27.65)
3. Child Attitude toward Sipping	0.815	.158	26.7***	2.26 (1.66–3.08)
CONSTANT	-7.003	1.15	37.0***	0.001
10-Year-Old Cohort (n=158)				
Variable Selected at Each Step	B	SE	Wald	OR (95%CI)
1. Perc. Mother Drinker Status	0.838	.399	4.4*	2.31 (1.06–5.05)
2. Mother's Drinking Frequency	0.258	.115	5.0*	1.29 (1.03–1.62)
3. Child Attitude toward Sipping	0.384	.096	16.1***	1.47 (1.22–1.77)
CONSTANT	-3.160	.605	27.3***	0.042

Note. Coefficients are from the final step. Exp(B) estimates the Odds Ratio. Numbers of subjects in these analyses are smaller due to missing data from father reports in single-mother families.

p<.001

**
p<.01

*
p<.05

+
p<.10 (all two-tailed, df=1).