

Summary of 21 Longitudinal of Alcohol Advertising

Study, location, survey dates age groups (yrs), sample size	Model & outcome measures	Positive results at follow-up	Null & negative results at follow-up
Connolly et al. (1994) Dunedin, New Zealand 1985, 1987 & 1990 Ages 13, 15 & 18 N = 435 & 413	Linear regression for average amt per occasion, maximum amt & frequency of beer drinks at age 18 by males & females separately; same analysis for wine/spirits drinks	No. of ads recalled at age 15 is significant for average amt & maximum amt of beer drinks by males. No. of hrs of TV watched is significant for average amt of beer & average wine/spirits drinks by females; also significant for frequency of wine/spirits drinks by females	Numerous null results for ads recalled, portrayals in entertainment, moderation messages & hrs of TV watched (null results in 21 cases for ads, 24 for portrayals, 24 for messages, 9 for TV). Negative result for ads recalled at age 13 for frequency of beer drinks by females
Casswell & Zhang (1998) Dunedin, New Zealand 1990/91 & 1993/94 Ages 18 & 21 N = 630	Path analysis model for annual amt of beer consumption at age 21 & alcohol-related aggression at age 21, conditional on beer use & liking of ads at age 18	Liking of ads at age 18 (3-item index) has a significant effect on beer consumption & alcohol-related aggression at age 21. Brand allegiance at age 18 has an effect on beer use at ages 18 & 21.	Null effect of liking of alcohol ads at age 18 on beer use at age 18. Gender has a null direct effect on alcohol-related aggression at age 21, but indirect effects through liking of ads & beer consumption at ages 18 & 21
Casswell et al. (2002) Dunedin, New Zealand 1990, 1993 & 1996 Ages 18, 21 & 26 N = 714	Logistic regression for average amt per occasion & frequency of drinking for males & females separately. Participants assigned to four drinking trajectory groups	Participants at age 18 were asked to rate how much they liked alcohol ads. This variable was never significant for the analysis of drinking trajectories. Access to licensed premises at age 18 had the most consistent impact	Null results for liking of ads for male & female drinks per occasion & frequency of drinking by trajectory group
Robinson et al. (1998) San Jose, California, USA 1994 & 1996 Ages 14/15 & 16/17 N = 898 & 635	Logistic regressions for onset of drinking by baseline nondrinkers & maintenance of drinking by baseline drinkers	Hrs per day spent watching TV & hrs spent watching music videos are significant for onset of drinking at ages 16/17 by baseline nondrinkers	Null result for use of computer/video games for drinking onset. Negative effect of watching videos in a VCR for drinking onset. Null results for four media variables for maintenance of drinking by baseline drinkers (18-month follow-up)
Wingood et al. (2003) Nonurban USA, 1996-1999 Black females, ages 14-18 N = 522	Logistic regression for alcohol use at 12-month follow-up conditional on hrs exposure to rap music videos at baseline.	Study appears to combine baseline drinkers and nondrinkers. A multivariate analysis indicates greater alcohol use among those who viewed more rap videos (p-value = 0.05).	Only one media variable is included in the study. The list of covariates is unreported and does not appear to include baseline drinking status, making causality tenuous. Study omitted from meta-analysis.
Stacy et al. (2004) Los Angeles, California, USA 2000 & 2001 Ages 12/13 & 13/14 N= 2250	Logistic regression models for grade 8 alcohol use (separately for beer & wine/spirits) & 3-drink episodes. Three indexes for TV alcohol ad exposure & two memory tests for ads recall & brand recognition	After adjusting for covariates, the watched TV index is significant for beer use, wine/liquor use & 3-drink episodes. The watched TV sports index is significant for only beer use. Self-reported exposure to TV alcohol ads is significant for beer use	Null results for TV sports index & self-reported exposure for wine/liquor use & 3-drink episodes. Cued-recall memory test is insignificant for all three drinking outcomes. Draw-an-event memory test is insignificant for wine/liquor use & 3-drink episodes, & negative for beer use
Ellickson et al. (2005) South Dakota, USA 1997, 1998 & 2000 Ages 12/13 & 14/15 N = 1206 & 1905	Logistic regressions for grade-9 onset of drinking by grade-7 nondrinkers & grade-9 drinking frequency by grade-6 drinkers. Advertising variables obtained at grade 8	For grade-9 drinking onset, results are significant for in-store ad displays, but the coefficient is improbably large. For grade-9 drinking frequency, significant results for magazines with alcohol ads & beer concession stands at sports and music events	For drinking onset, null results for exposure to TV beer ads, magazine ads & beer concession stands. Null results for drinking frequency for TV beer ads & in-store ad displays. Negative results for weekly TV viewing for both drinking onset & drinking frequency

<p>Collins et al. (2007) South Dakota, USA 2001 & 2002 Ages 11/12 & 12/13 N = 1699 & 1740</p>	<p>Logistic regressions for grade-7 beer drinking (past yr) & drinking intentions, conditional on grade-6 drinking & grade-6 exposure to alcohol ads & marketing</p>	<p>For beer drinking, significant results obtained for sports TV beer ads, radio listening & ownership of beer promotional items. For grade-7 drinking intentions, significant results for other TV beer ads & promotional items. The coefficient size for promotional items is improbably large for both drinking outcomes. Some of these results conflict with Ellickson et al. (2005)</p>	<p>For beer drinking & intentions, null results for ESPN beer ads, magazine ads, concessions, in-store displays & weekly TV viewing. For beer drinking, null results for other TV ads. For intentions, null results for other TV sports beer ads & radio ads. The authors emphasize the joint effect of the TV ads variables, but this omits the variable for weekly TV viewing</p>
<p>VanDen Bulck & Beullens (2005) Flanders, Belgium 2003 & 2004 Ages 13/16 & 14/17 N = 1648</p>	<p>Linear regression for typical no. of drinks when going out (to a bar, party, disco, etc.) on a scale from 0 to 9 drinks or more</p>	<p>Baseline hrs of TV viewing per day & frequency of music video viewing are predictors of alcohol use while going out by ages 14 & 17, conditional on baseline drinking, school yr, smoking status & other covariates</p>	<p>None reported, but the media variables do not measure exposure to alcohol ads. The dependent variable is censored, but model does not account for this condition</p>
<p>McClure et al. (2006) New Hampshire & Vermont USA 1999 & 2000/01 Ages 10 to 14 N = 2406</p>	<p>Logistic model for drinking onset by baseline nondrinkers. Drinking onset and ownership of alcohol branded merchandise (ABM) are both determined at follow-up</p>	<p>Ownership of an ABM is positively related to drinking onset. Because ownership of an ABM is measured at follow-up, causality is uncertain</p>	<p>None reported; ownership of an ABM is the only media- and marketing-related variable included in the analysis</p>
<p>Sargent et al. (2006) New Hampshire & Vermont USA 1999 & 2000/01 Ages 10 to 14 N = 2049 & 357</p>	<p>Logistic regressions for drinking onset by baseline nondrinkers & prevalence of use by baseline drinkers. Respondents reported exposure to a set of 50 films</p>	<p>Adjusting for covariates, the baseline no. of hrs of exposure to alcohol use in movies is a significant predictor of drinking onset & prevalence of use by drinkers</p>	<p>None reported; movie viewing is the only media- or marketing-related variable, adjusted to reflect exposure in the entire sample of 601 movies (assumes proportional exposure with the set of 50 films); median = 8.6 hrs of exposure</p>
<p>Snyder et al. (2006) 24 media markets, USA 1999–2001 (4 waves) Ages 15-26 & 15-20 N = 588 & 306 (telephone survey for wave 4)</p>	<p>Multilevel regression for no. of alcohol drinks consumed in the past month (wave 4), conditional on advertising exposure in wave 1. Coefficients are small in magnitude & marginally significant</p>	<p>Significant results for market-level advertising expenditures & mean advertising exposure (self-reported recall). For 15-20 yr-olds, significant results for market-level advertising, mean exposure & advertising exposure within individuals</p>	<p>Null results for advertising exposure within individuals for full sample (high school, college) & null results for alcohol sales per capita at market level. For 15-20 yr-olds, null results for alcohol sales per capita at market level. High level of attrition in the baseline sample</p>
<p>Fisher et al. (2007) Nationwide survey, USA 1996 & 1998/99 Ages 11 to 18 N = 5511 & 261 (postal survey)</p>	<p>Logistic regressions for onset of alcohol use at follow-up & binge drinking by baseline nondrinkers, with separate regressions by gender</p>	<p>For drinking onset, significant results for ownership of (or willingness to own) alcohol promotional items (API) for boys & girls, but the coefficients are improbably large. For binge drinking, significant results for APIs for binge drinking by girls (again improbably large)</p>	<p>Null results for respondents' awareness of alcohol ads for drinking onset & binge drinking for boys & girls. Null results for APIs for binge drinking by boys</p>
<p>Pasch et al. (2007) Chicago, Illinois USA 2003 & 2005 Ages 11/12 & 13/14 N = 2586, 2027 & 559</p>	<p>Mixed-effect regressions for all students, grade-6 nondrinkers & grade-6 drinkers. Outdoor ad (billboards, store ads) placements measured at 63 school sites</p>	<p>Grade-8 alcohol intentions are related to outdoor ads (all), brand-only ads & youth-oriented ads for all students & grade-6 nondrinkers. The authors emphasize the effect of ads on a joint measure of behavior & intentions. Awareness of outdoor ads is an unreported covariate</p>	<p>Null results for alcohol behavior for all three outdoor ad measures for all students, grade-6 nondrinkers & grade-6 drinkers. Null results for alcohol intentions for all three ad measures for grade-6 drinkers. Exposure to other forms of alcohol advertising is an unreported covariate</p>

Henriksen et al. (2008) Tracy, California USA 2003 & 2004 Ages 11-13 & 12-14 N = 1080	Logistic regressions for onset of alcohol use & current drinking by baseline nondrinkers, conditional on alcohol marketing receptivity, brand recognition & brand recall	For drinking onset, significant multivariate results for high-level of alcohol marketing receptivity (owned a promotional item such as a hat). For current drinking, significant results for high-level of alcohol marketing receptivity	Null results for brand recognition, brand recall & moderate levels of receptivity for onset of drinking & current drinking
Hanewinkel et al. (2008) Schleswig-Holstein, Germany 2005 & 2006 Ages 10-16 & 11-17 N = 2110	Generalized logistic model (log link) for onset of binge drinking. The media variable is parental restriction on viewing of FSK-16 movies	Risk ratios are significant for three levels of parental restrictions on viewing of FSK-16 movies (once in a while, sometimes, all the time)	None reported; restrictions on movie viewing is the only media- or marketing-related variable in the study
Hanewinkel & Sargent (2009) Schleswig-Holstein, Germany 2005 & 2006 Ages 10-16 & 11-17 N = 2708	Generalized logistic model of drinking onset & binge drinking. Assumes a participant's exposure in a list of 50 movies is proportional to total exposure in 398 movies	Significant results for hrs of exposure to alcohol use in movies, except for moderate level of exposure for binge drinking. Mean exposure time is 3.2 hrs	Null results for time viewing TV for drinking onset & binge drinking. Null results for moderate movie exposure for binge drinking
McClure et al. (2009) Nationwide USA 2003, 2004 & 2005 (4 waves) Ages 10-14 & 12-16 N = 4575 (telephone survey)	Logistic regressions for drinking onset & transition to binge drinking at 8 to 16 months after baseline date & 16 to 24 months. Ownership of alcohol-branded merchandise (ABM) assessed at 8, 16 & 24 mo	Trying binge drinking from 8 to 16 months is related to ABM ownership at 8 months. Trying alcohol & trying binge drinking from 16 to 24 months are related to change in ABM ownership from 8 to 16 months	Null results for trying alcohol from 8 to 16 months for ABM ownership at 8 months for. Null results for trying binge drinking from 16 to 24 months for ABM ownership at 8 months. Exposure to alcohol in movies & exposure to TV are unreported covariates
Wills et al. (2009) Nationwide USA 2003, 2004 & 2005 (4 waves) Ages 10-14 & 12-16 N = 4574 (telephone survey)	Structural path analysis model for movie exposure at Times 1, 2, & 3 and an index of drinking onset & binge drinking at Times 2 & 3	Statistically significant result for direct effect of movie alcohol exposure at Time 1 on Time 2 alcohol use index. Significant results for Time 3 movie alcohol exposure on Time 3 alcohol use	Null result for direct effect of Time 2 movie alcohol exposure on Time 2 alcohol use index. Many of the path coefficients appear to be small in magnitude. Parents' alcohol use appears unrelated to drinking at Times 2 & 3
Saffer & Dave (2006) 75 media markets, USA 1996-98 & 1997-98 Ages 12-17 & 12-16 N = 63,494 (MTF) N = 11,463 (NLSY)	Probit regressions for MTF past year alcohol participation, past month participation & binge drinking in past two weeks. Probit & OLS regressions for NLSY for past month alcohol participation & binge drinking	Composite measure of local advertising expenditures (equivalent TV messages) is significant in 10 of 15 cases for MTF data set. The same measure as a linear variable is significant in 5 of 6 cases for the NLSY data set. The log of advertising variable is significant in 1 of 2 cases for the NLSY data set. For the t-statistics, 14 of 23 (61%) are less than 2.3	Null results for effect of advertising on three MTF drinking measures for blacks (past year, past month, binge participation). Null results for males for MTF past month & binge participation. Null results for NLSY past month alcohol participation in two models (probit limited model, individual fixed effects model)
Nelson (2008a) Nationwide USA (45 states) 1999-2003 (5 waves) Ages 12-17 & 18-25 N = 225	Linear probability regressions for two age groups for past month drinking prevalence and past month binge drinking. Alcohol marketing variables are outlet density and per capita attendance at major pro sports events	Ages 18-25 prevalence: outlet density is positive in a state fixed-effects regression & two regressions that control for demographics & regulations. Ages 18-25 binge drinking: outlet density is positive in a state fixed-effects regression. Ages 12-17 binge drinking: outlet density is positive in two fixed-effects regressions	Ages 18-25 prevalence: sports attendance is negative in two cases. Ages 18-25 binge drinking: sports attendance is negative in three cases. Ages 12-17 prevalence: outlet density is negative in one regression & insignificant in four cases and sports attendance is negative in three cases. Ages 12-17 binge drinking: outlet density is negative in one case & insignificant in four cases and sports attendance is negative in three cases

Notes: Bold references are included in the meta-analysis.

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