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## Inadequate child supervision: The role of alcohol outlet density, parent drinking behaviors, and social support

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### Abstract

Supervisory neglect, or the failure of a caregiver to appropriately supervise a child, is one of the predominant types of neglectful behaviors, with alcohol use being considered a key antecedent to inadequate supervision of children. The current study builds on previous work by examining the role of parental drinking and alcohol outlet densities while controlling for caregiver and child characteristics. Data were obtained from 3,023 participants via a telephone survey from 50 cities throughout California. The telephone survey included items on neglectful parenting practices, drinking behaviors, and socio-demographic characteristics. Densities of alcohol outlets were measured for each of the 202 zip codes in the study. Multilevel Bernoulli models were used to analyze the relationship between four supervisory neglect parenting practices and individual-level and zip code-level variables. In our study, heavy drinking was only significantly related to one of our four outcome variables (leaving a child where he or she may not be safe). The density of on premise alcohol outlets was positively related to leaving a child home alone when an adult should be present. This study demonstrates that discrete relationships exist between alcohol related variables, social support, and specific supervisory neglect subtypes at the ecological and individual levels.

### Keywords

Child Neglect; Inadequate Supervision; Alcohol Drinking; Alcohol Outlets; Social Support

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## 1. Introduction

Approximately 1 in 58 children in the United States experience maltreatment with 75% of maltreatment cases involving child neglect (U.S. Department of Health and Human Services, 2012; Sedlak et al., 2010). Over 60% of maltreatment incidents of neglectful behavior meet a standard indicating serious harm, injury, or impairment occurred (Sedlak et al., 2010). Supervisory neglect is defined by a range of caregiver behaviors that disregard children's safety in and out of their home and that expose them to dangerous situations (Barnett, Manly, & Cicchetti, 1993). Examples of types of supervisory neglect include leaving a child alone to care for him or herself, not watching a child closely enough, failure to provide adequate substitute child care, allowing a child to participate in harmful activities, and leaving children unattended in vehicles (Barnett et al., 1993; Coohy, 2003a, 2003b; Slack, Holl, Altenbernd, McDaniel, & Stevens, 2003).

Traditionally, definitions of neglect encompass caregiver acts of omission that can result in both actual harm and potential harm. Dependence on neglect identified by CPS alone is counterproductive given these data exclude children with less severe but still potentially harmful experiences of neglect (Proctor & Dubowitz, 2014). Most notably, young children can be injured if they are not watched closely enough while older children are more likely to participate in deviant activities if caregiver monitoring and supervision is inadequate. Supervisory neglect is consistently observed as the most common type of neglect, ranging from 15% to 72.5% of child welfare cases (Coohy, 2003a; Mennen, Kim, Sang & Trickett, 2010; Ruiz-Casares, Trocmé, & Fallon, 2012). In addition, 50% to 70% of parents identified as engaging in neglectful behaviors report supervision problems, such as leaving a child home alone (May-Chahal & Cawson, 2005; Mennen et al., 2010; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). General population estimates also indicate supervisory neglect as the most prevalent type of maltreatment reported with 41.5% of individuals identifying being left home alone during their childhood (Hussey, Chang, & Kotch, 2006).

While some research indicates that the levels of harm experienced by children exposed to supervisory neglect may be lower than those exposed to other forms of maltreatment, these children still experience mental and/or emotional harm at higher rates than a normative sample and remain at risk for physical harm similar to other forms of neglect (Petrenko, Friend, Garrido, Taussig, & Culhane, 2012; Ruiz-Casares et al., 2012). Supervisory neglect was the most prevalent factor associated with neglect-related child fatalities when compared to deprivation of need and medical neglect (Welch & Bonner, 2013).

Parental behaviors that might be considered forms of supervisory neglect lie on a spectrum with regard to chronicity, from single to repeated incidents, and with regard to consequences, from no harm to fatal harm. Therefore, deciphering between arrangements that might be characterized as oversights in parenting and situations that rise to the level of statutory neglect represents an ongoing challenge for the child protective service agencies that make such determinations in the context of varying policy and practice environments (Zielewski, Malm, & Geen, 2006). However, it is important to note that the behaviors described in this study hold potential for child morbidity and mortality, even if they occur just once or for a short period of time. For example, while the average child that dies in an

unattended car is usually found after 4.6 hours, children left in cars have expired from hyperthermia after just 25 minutes (Booth, Davis, Waterbor, & McGwin, 2010); physical or sexual abuse by an inappropriate caregiver can occur in an hour's time on a single occasion (Coohey, 2008). The purpose of this study was to examine the relationships of social support, parental drinking behavior and alcohol outlet density to four distinct forms of supervisory neglect in a population-based sample of parents.

To study this, we rely on work by Garbarino (1977) and Belsky (1993) who argue that maladaptive parenting is a function of the interplay between individual behaviors, social relationships, and use of local environments that interact to produce risky contexts for children. This ecological-transactional theory of maltreatment requires that the study of environmental stressors, social supports, and maladaptive parenting behaviors occurs together (Coulton, Crampton, Irwin, Spilbury, & Korbin, 2007; Cichetti & Lynch, 1993). Despite positing these theories two decades ago, very little empirical work has combined all three aspects in such a way that allows us to identify mechanisms relating this interplay to neglectful parenting. The key features relating to this study, then, are that much of child maltreatment is situational or contextual, not pathological, and that environments shape neglectful parenting.

Freisthler & Holmes (2012) further theorize that alcohol use, alcohol outlets, and social support have differential relationships with child maltreatment. With regards to supervisory neglect, larger support networks means more people are available who can watch children when needed, which may prevent a parent from leaving a child home alone but not from unsafe monitoring. Opportunities for socializing outside the home (such as areas with higher densities of bars or restaurants) may increase the likelihood that parents spend time away from home. In the event child care is cannot be secured, a child may be left at home without supervision. Finally, it is unknown if patterns of alcohol use, beyond abuse or dependence, adversely affects parenting. For example, drinking heavily, regardless of how frequently, may be related to unsafe monitoring when it occurs. These relationships are described in more detail below.

### **1.1 Supervisory Neglect, Social Support, and Attributes of Social Networks**

General neglect behaviors are typically associated with parent attributes, such as poor judgment and limited knowledge about appropriate parenting techniques, as well as contextual factors, such as low family income and low social support (Schumacher, Smith Slep, & Heyman, 2001). Of supervisory neglect cases reviewed in a Canadian child welfare sample, 45% of cases were associated with few social supports (Ruiz-Casares et al., 2012).

Coohey (2008) observed that specific types of supervisory neglect behaviors have distinct caregiver-related correlates. For example, in a study of 602 substantiated reports of child maltreatment, Coohey (2003a) found almost 40% of reports to Child Protective Services involved leaving a child home alone or with an unsuitable caretaker. Caregivers in households where children were left home alone or with inadequate supervisors tend to use poor judgment and to be more frequently employed outside of the home (Jones, 1987; Coohey, 2008). Other studies have observed that children are more likely to be left home alone or to be inadequately supervised when there are fewer adults who reside in the home

(Cain & Hofferth, 1989; Smith, 2002), when mothers are single (Coohey, 2008) or do not have a partner residing with them, and when fewer family members live nearby (Coohey, 2007).

In a review of the social support literature, DePanfilis (1996) found that neglectful families might lack access to network support and be distrustful of social support that is available. Parents who neglect their children generally have fewer network members, have less frequent contact with members in their supportive networks, and tend to live further away from network members (Coohey, 1996, 2007; Thompson, 1985; Coulton, Korbin, & Su, 1999; Molnar, Buka, Brennan, Holton & Earls, 2003; Vinson, Baldry, & Hargreaves, 1996).

Between 35% and 67% of mothers who engaged in supervisory neglect reported leaving their children to participate in recreational activities (e.g., socializing, visiting, or vacationing; Coohey, 2008). In another study of neglect cases in New York state, 19% of supervisory neglect cases in New York state, parents were found to be “out” drinking, using drugs, or engaged in prostitution and other illegal activities. An additional 12% were “out” for entertainment purposes when the supervisory neglect incident occurred (Jones, 1987). Areas that have more opportunities to socialize, such as those with a large number of restaurants or bars, might provide parents with greater opportunities to leave their child home alone or in unsafe situations, particularly if they have smaller social networks.

## 1.2 Supervisory Neglect, Alcohol Use and Alcohol Outlets

Alcohol use has been found to be a contributing factor in both intentional and unintentional injuries and fatalities among children (Cohen et al., 2003) and has been well established as an antecedent to child welfare system involvement (Testa & Smith, 2009). Several studies illustrate the potential for diminished parental monitoring and increased risk for injury when one or both parents abuse alcohol or drugs. Of supervisory neglect cases that resulted in physical harm to a child, about twenty percent involved substance abuse by a parent or other adult (Laslett, Ferris, Dietz, & Room, 2011; Ruiz-Casares et al., 2012). With regard to injuries, Bijur and colleagues (1992) found that in families where the mother was classified as a problem drinker (i.e., mother experienced multiple consequences from drinking) children were at 2.1 times greater risk for serious injury than in families where the mother was a light or non-drinker; children were at 2.7 times greater risk for injury if both parents are problem drinkers. Moreover, children of problem drinkers were at greater risk for injuries at home (1.6 times), in the street (2.4 times) and in recreational areas (3.4 times), indicating that lack of supervision among problem drinkers occurs in multiple environments (Bijur, Kurzon, Overpeck, & Scheidt, 1992).

When compared to parents who do not abuse alcohol, alcohol-abusing parents have been found to be at higher risk for child maltreatment (Walsh, Macmillan, & Jamieson, 2003) and are more often reported multiple times to the child welfare system for child maltreatment (Wolock & Magura, 1996; Laslett, Room, Dietze, & Ferris, 2012). Studies have also found parents with a diagnosed substance use disorder to be more likely to commit child neglect and to have a higher child abuse potential than in those without a diagnosed substance use disorder (Ammerman, Kolko, Kirisci, Blackson, & Dawes, 1999; Chaffin, Kelleher, & Hollenberg, 1996). For example, Kelleher and colleagues (1994) found that parents who

were identified as alcohol dependent or alcohol abusers were 5.3 times more likely to neglect their child than matched controls. With regard to supervisory neglect, parents with alcohol problems have been more likely to inadequately supervise their children when compared to parents who do not have alcohol problems (Coohey, 1998; Hixon, 1992). Coohey and Zhang (2006) found that families in which the mother or her partner had a substance abuse problem were more likely to have a chronic problem with supervisory neglect. Almost fifty percent (48%) of cases in a Canadian sample were associated with substance abuse (Ruiz-Casares et al., 2012). Not all supervisory neglect results in harm to a child; however, higher rates of harm occur when alcohol is involved (Ruiz-Casares et al., 2012). What remains unknown is whether different drinking levels are related to subtypes of supervisory neglect.

Theories related to routine drinking activities suggest the environment also provides opportunities for caregivers to spend time outside of the home which could lead to supervisory neglect (Freisthler, Gruenewald, Remer, Lery, & Needell, 2007; Gruenewald, Treno, Nephew, & Ponicki, 1995; Treno, Alaniz, & Gruenewald, 2000). From an ecological perspective, the presence of alcohol outlets may affect supervisory neglect directly as parents spend more time away from home (in bars and/or restaurants) to socialize, regardless of whether or not they consume alcohol (Freisthler, Midanik, & Gruenewald, 2004). Alcohol outlets, especially on premise outlets, may provide convenient places or opportunities for “adult only” recreational activity to occur. In fact, Freisthler, Byrnes, and Gruenewald (2009) observed that a high neighborhood density of bars was associated with lower levels of parental monitoring behaviors and higher participation in deviant activities among adolescent youth. On the other hand, not watching a child closely enough may occur if drinking occurs at home, especially if a parent is drinking to intoxication. In this case, density of off-premise outlets would be a risk factor.

### 1.3 Current Study

The current study seeks to identify and better understand those individual and ecological components that could be modified to prevent and reduce supervisory neglect. We build on previous work by examining the role of parental drinking, alcohol outlet densities, social networks, and social support while controlling for caregiver and child characteristics. We hypothesize that density of on-premise alcohol outlets will be positively related to leaving a child home alone, in a car alone, or leaving a child in some place the caregiver was not sure the child was safe. Density of off-premise outlets will be positively related to unsafe monitoring. We also hypothesize that heavy drinking regardless of frequency (i.e., infrequent, occasional, or frequent) will be related to a greater likelihood of all four subtypes of neglect. Having larger social networks will be related to a lower likelihood of leaving a child home alone or in a car alone but will not be related to leaving a child in an unsafe place or providing unsafe monitoring. Having higher levels of social support will be negatively related to all four subtypes of child neglect.

## 2. Methods

### 2.1 Study Sample and Data Collection Procedures

The sample consisted of 3,023 parents from 50 cities in California who completed a computer-assisted telephone survey (CATI) during March through October 2009. Parents and caregivers were screened to ensure that a child 12 years or younger lived in the home at least 50% of the time. Where more than one eligible respondent resides (i.e., two parents) in the household, a random selection procedure was used to choose one to be invited to participate in the survey. Individuals who lived in institutional settings, who are not well enough to complete the interview, or do not speak English or Spanish were excluded from the study.

Telephone numbers were obtained from listed samples of credit card, utility companies, and magazine subscription list and screened for overlap. This sampling technique provides a more complete list of unduplicated addresses and phone numbers that can increase the efficiency and coverage of survey results (Brick, Waksberg, Kulp, & Starer, 1995; Tucker, Lepkowski, & Piekarski, 2002). A stratified random sampling plan was used to contact respondents on the lists. Stratifying occurred by city (see below for more details) and sampling continued until the entire universe of listed phone numbers were completed or at least 60 respondents from that city were obtained. Potential respondents were sent a letter describing the study and announcing the possibility of being contacted. These pre-announcement letters also provided respondents an opportunity to opt out of the study by calling a toll-free telephone number. The response rate for the survey was 47.4%.

The fifty cities were chosen from a universe of 138 cities with populations between 50,000 and 500,000 throughout the state of California. The list of 138 cities was randomized and the first city was chosen on the list. We then moved down the randomized list to the next city. We determined if that city was located adjacent to or within a mile of the city already chosen. If it was, that city was discarded; if it was not, that city was retained for the final sample. We did this until all 50 cities were chosen. No city was adjacent to any other city in the sample in order to maximize the geographic validity of the sample. The sampled and non-sampled cities were similar (i.e., no statistically significant differences) on population size, racial and ethnic diversity, household size, and median household income (Lipperman-Kreda, Grube, & Friend, 2012).

Each city has approximately 60 parent respondents with a low of 47 and a high of 74 for a final total sample of 3,023 respondents. Generalizability to all 138 cities was enhanced by the use of poststratification weights that adjusted for race/ethnicity, gender, and household type (single vs. two parent homes). For this study, parents were nested within 203 zip codes within the 50 cities. The number of respondents per zip code ranged from 1 to 66 ( $\bar{x} = 14.89$ ,  $sd = 13.5$ ).

Respondents received \$25 for participating in the 30 minute survey which covered topics related to parenting behaviors, alcohol use, and socio-demographics. Location information (i.e., street address) of the respondents was obtained by the survey research firm conducting the phone interviews. Adaptive spatial masking was used to assign the respondents pseudo

x, y coordinates in order to assign geographic data (i.e., alcohol outlet density) to each of the respondents. Adaptive spatial masking is a process used to manipulate the data to enable the confidentiality of the participant's location and to prevent the research team from having to report families to Child Protective Services (see Freisthler & Gruenewald, 2013 for specifics). Spatial adaptive masking was achieved by creating maps of all residential households in each of the 50 cities and moving the residential address of the respondent to a randomly selected location within a circle with radius proportional to an area containing 100 residential households around the original point location. The original address information was then discarded. About half (49.4%) of respondents pseudo x, y coordinates were located on the same Census block (the smallest geographic unit provided by the Census) and 89.6% were placed within the same Census block group. Given that this study is conducted at the zip code level, a fairly low percentage of pseudo x, y coordinates were likely to fall outside of the actual zip code of residence for the respondent.

## 2.2 Dependent Variable

The dependent variables are measured using four items of supervisory neglect from the Multidimensional Neglectful Behaviors Scale (Kantor, Holt, & Straus, 2003) and were answered with regards to a specific child. If more than one child under the age of 13 was in the household, participants were instructed to answer the question about parenting behaviors for the child who had the most recent birthday, called the "focal child". Two of the chosen neglect items represent leaving a child alone without a caretaker: (1) left child home alone when an adult should be with him/her and (2) leaving a child in the car alone (for children < 10 years of age). Parents made the subjective determination about whether or not an adult should have been present with the child. The remaining two items are measures of unsafe monitoring: (3) leaving a child when someplace where you weren't sure if they were safe (i.e. unknown safety) and (4) unsafe monitoring. For unsafe monitoring, parents of children 0 – 4 years were asked how often they could hear their child when they were out of the room while parents of children 5 – 9 were asked how often they knew where their child was when he or she was playing outdoors. Responses include "Never," "Sometimes," "Often" and "Always." Items were reverse coded when needed. The measures were recoded so that parents reporting that they "sometimes," "often," or "always" left their child home alone, left their child in a car alone, left their child where he/she wasn't sure if the child was safe, or did not watch the child closely enough (i.e., unsafe monitoring) were denoted with a "1" and those that responded "never" were denoted as "0." Table 1 provides frequencies of the dependent and independent variables. Sixteen percent (or about 1 in 6) of parents reported leaving the focal child home alone when an adult should have been there; 14.5% reported engaging in unsafe monitoring; 8.7% left a child home alone; and 4.5% of parents report leaving a child some place where they were not sure if he or she was safe.

## 2.3 Independent Variables

Data on licensed alcohol outlets were obtained from the California Department of Alcoholic and Beverage Control. Outlet locations were geocoded to the street address of the establishment. Numbers of active alcohol outlets by zip code were calculated for off premise alcohol establishments (license type 20 "Off-Sale Beer & Wine" or 21 "Off-Sale General") and on premise alcohol outlets (restaurants that serve alcohol with license types 41 "Beer/

Wine Eating Place”, or 47 “General Eating Place”; bars and pubs with license types 23 “Small Beer Manufacturing”, 40 “On-sale beer”, 42 “Beer/Wine Public Premise”, 48 “General Public Premise”, 61 “Beer public premises”, 75 “General Brew-Pub”). Off premise alcohol outlets are those where a person purchases alcohol to be consumed elsewhere and includes liquor stores, grocery stores, and convenience stores. On premise alcohol outlets sell alcohol for consumption at the site and include restaurants and bars. Geocoding rates of these data exceeded 99%. Means and standard deviations of independent variables can be found in Table 2, showing that on average, each zip code had 21.16 off premise alcohol outlets and 4.83 on premise alcohol outlets per area.

Respondents were asked about how often they drank alcohol and given twelve response categories ranging from “every day” to “never had a drink of alcohol in my life.”

Respondents were asked the frequencies with which they had 1 or more, 2 or more, 3 or more, 6 or more, and 9 or more drinks in the past 4 weeks. For those who report not drinking in the past four weeks, they are asked the same questions over the past year (allowing the method to be extended to low frequency drinking). Respondents were also asked the maximum number of drinks they consumed on any occasion during the same time frame, monthly or yearly, on which their self-reports were based. A “drink” was defined for the respondents as a 12-ounce can of beer, a 5-ounce glass of wine, or a 1-ounce shot of liquor. Responses were then recoded into the following seven categories using categories that have been used in previous work on intimate partner violence and depression (Kantor & Straus, 1987; Paschall, Freisthler, & Lipton, 2005): (1) lifetime abstainers (never drank alcohol); (2) ex-drinkers (did not drink alcohol in past year, but drank alcohol during his/her lifetime); (3) light drinkers (drank either in the past month or past year but never more than 1–2 drinks per occasion); (4) moderate drinkers (drank 3–4 drinks at least once during past month but never drank more than 4 drinks); (5) infrequent heavy drinkers (drank 5 or more drinks once a month or less); (6) occasional heavy drinkers (drank 5 or more drinks 2–3 days a month or 1–2 days per week); and (7) frequent heavy drinkers (drank 5 or more drinks 3–5 days per week or daily). About 41% of respondents in this study report engaging in light drinking behaviors with about 29% who report drinking moderately or heavily on at least one occasion.

Social support was measured using the Interpersonal Support Evaluation List short form (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). This form consists of twelve items that measures three types of social support. These include emotional (e.g., I feel that there is no one I can share my most private worries and fears with.), tangible (e.g., If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment.), and belongingness (i.e., social companionship; If I wanted to have lunch with someone, I could easily find someone to join me.) Response categories include definitely false, probably false, probably true, and definitely true. Items were summed to create a “total” level of social support with a theoretical range of 12 to 48. Internal consistency for the total level of social support item in this survey was high ( $\alpha = 0.83$ ).

Size of social networks was not asked of participants directly. Instead, the survey asked about the number of the individuals who provided support in each of the categories from the ISEL (tangible, emotional, belongingness). Since we were not able to ascertain the degree of

overlap between individuals providing support for each type of support, we computed the average size of the support network across all three types of support to determine the approximate size of support networks for the participants.

Parenting stress is measured from two items from the “Dimensions of Discipline Inventory” (Straus & Fauchier, 2007). These include “I got very angry when this child misbehaved” and “I felt stressed out by this child’s misbehavior.” Respondents answered “never,” “sometimes,” “often,” and “always”. Items were summed with a range of 2 (low) to 8 (high) parental stress. Internal consistency, measured using Chronbach’s alpha, was 0.65 for these measures.

Sociodemographic control variables include focal child’s gender, focal child’s age in years, respondent’s age in years, gender and race/ethnicity, number of children in the home, and household income. Race/Ethnicity was dummy coded as Non-Hispanic White, Non-Hispanic Black, Hispanic, Asian, multi-racial or other race/ethnicity. Household income was measured by seven categories and recoded as households with an income of \$20,000 or less, \$20,001 to \$40,000, \$40,001 to \$60,000, \$60,001 to \$80,000, \$80,001 to \$100,000, \$101,000 to \$150,000, and \$150,001 and higher.

## 2. 4 Analysis

Data were analyzed using multilevel Bernoulli models as respondents (Level 1) were nested within zipcodes (Level 2) due to the design of the study. This nesting implies non-independence among participants within zipcodes. Participants living in the same zipcode are expected to be more similar to each other than they are to participants living in different zipcodes. At the highest level of analysis (Level 2, zipcode level), measures of community-level variables (i.e., outlet density variables) were included as zipcode-level random effects. At the lowest level of analysis (Level 1, individual), the dependent measures were predicted from background characteristics of respondents (sociodemographics), psychosocial characteristics (social support) and drinking levels (abstainer, moderate drinker). The general form of the multilevel model used was:

Level 1:

$$Y=b_0+b_1X_1+b_2X_2+\dots b_pX_p+e \quad (1)$$

In Equation 1, Y was a binary outcome indicating whether or not a specific supervisory neglectful behavior occurred (e.g., leaving a child home alone when an adult should have been with him or her), measured at the person level,  $b_0$  is the zip code-specific intercept,  $b_{1-p}$  are regression coefficients expressing the associations (slopes) between p person-level predictors ( $X_{1-p}$ ; e.g., age) and the outcome, and e is the individual-specific residual or error.

Level 2:

$$b_0=g_{00}+u_0 \quad (2)$$

In 2,  $g_{00}$  shows the overall sample intercept for the equation predicting zip code-specific intercepts and  $u_0$  is the random city-specific residual component. In multilevel regression,

the  $b_0$  can be thought of as representing adjusted zip code-level means on the outcome variable. Two independent variables, measuring on and off premise alcohol outlets, are included in the Level 2 equation. Because the outcome variables used in these models was discrete (1 = any neglect, 0 = no neglect), non-linear multilevel (Bernoulli) regression techniques under the HGLM module of the HLM Version 7 software (Raudenbush, Bryk, Cheong, & Congdon, 2006) was used. Results for the population average model are presented.

**Missing Data Analysis**—Nine percent of cases were missing data on one or more variables. Cases with missing data were excluded from final analyses. To determine the extent to which missing data may have biased analyses, statistical tests (either chi-square or t-tests) were conducted to determine if respondents with missing values were significantly different from those without missing data. There was no difference in respondents on leaving a child home alone ( $X^2(1, N = 2872) = 0.47, p = .51$ ), leaving a child when he or she was not safe ( $X^2(1, N = 2871) = 0.01, p = .93$ ), leaving a child alone in a car ( $X^2(1, N = 2043) = 0.52, p = .47$ ), or not watching a child closely enough ( $X^2(1, N = 3006) = 1.06, p = .30$ ). For the independent variables, we found no difference between respondents with and without missing data on gender of the focal child ( $X^2(1, N = 2909) = 0.09, p = .77$ ), marital status ( $X^2(1, N = 3023) = 0.09, p = .76$ ), race/ethnicity ( $X^2(5, N = 3006) = 10.88, p = .06$ ), age of the focal child ( $t(2912) = -1.86, p = .06$ ), age of the respondent ( $t(3021) = 0.39, p = .70$ ), number of children in the household ( $t(3021) = -0.11, p = .99$ ), average level of social support ( $t(2945) = 1.16, p = .25$ ), and average size of social support network ( $t(2969) = -0.42, p = .68$ ). However there were significant differences in respondent income ( $X^2(6, N = 2909) = 26.50, p < 0.001$ ), gender of the respondent ( $X^2(1, N = 3023) = 5.44, p = .02$ ), and drinking behaviors ( $X^2(6, N = 3008) = 27.73, p < 0.001$ ). It appears that women, those with lower incomes, and those who abstained from drinking or were ex-drinkers had higher than expected missing data on key variables.

### 3. Results

Tables 3 and 4 show the results of the multilevel analysis. For each outcome variable two models are presented: (1) only density of on and off premise alcohol outlets and drinking levels as covariates and (2) a full complement of individual variables, including those related to social support, parenting stress, and size of social network. Table 3 provides the results for the variables representing leaving a child alone without a caretaker (at home and in a car.) The results for the unsafe monitoring outcomes are presented in Table 4.

#### 3.1 Leaving a Child Alone

Light and moderate drinkers (compared to lifetime abstainers) were more likely to leave their child without a suitable caregiver (i.e., alone) and in a car alone in Model 1. Compared to lifetime abstainers, ex-drinkers were more likely to leave their children in a car and occasional heavy drinkers were more likely to leave their children home alone. However, none of these drinking variables were statistically significant in Model 2 after including child and parent characteristics. For both outcomes, female respondents, caregivers with lower levels of social support, higher levels of parenting stress, and those living in zip codes

with lower levels of off premise alcohol outlets were more likely to report leaving their children alone at home or in a car. Older children were more likely to be left home alone while younger children were more likely to be left in a car alone. Older parents, caregivers living in zip codes with higher densities of off premise outlets, and caregivers with higher incomes were more likely to report leaving their children home alone while Asian parents were less likely than White parents to report leaving their child home alone. Parents who were married or cohabitating were less likely to report leaving a child alone in a car.

### 3.2 Unsafe Monitoring Practices

Moderate and infrequent heavy drinkers (compared to lifetime abstainers) were less likely to unsafely monitor their children in both Models 1 and 2. Frequent heavy drinkers were more likely to report leaving a child in a place of unknown safety compared to lifetime abstainers. For both outcomes representing unsafe practices, older caregivers and caregivers reporting lower levels of social support were more likely to leave their child in a place where it was unclear if the child was safe or engage in unsafe monitoring of their child's activities. Male and older children, children with caregivers of Hispanic or Asian descent, and caregivers with high levels of parenting stress were more likely to be left in places of unknown safety. Parents with larger social networks were less likely to leave their child in place where the child's safety was unknown. Younger children were more likely to not be watched closely enough. Outlet density variables were not related to unsafe monitoring practices of parents.

## 4. Discussion

Findings from this study contribute to the literature by identifying relationships between alcohol related variables, alcohol outlet density, attributes of social support, and supervisory neglect in the context of unique constellations of risk and protective factors for each supervisory neglect subtype. While past research suggests that alcohol use and abuse co-occur with supervisory neglect behaviors (Bijur et al., 1992; Coohy & Zhang, 2006; Coohy, 1998; Hixon 1992), our findings related to alcohol use are not consistent with the literature. In our study, heavy drinking was only significantly related to one of our four outcome variables (unknown safety of a child). The divergence from past findings may reflect differences in research methodology. In contrast to past studies of supervisory neglect, which have primarily relied on bivariate analyses and/or data from cases of children already involved with the child welfare system, our study relied on self-report data from a general population of parents. Further we did not have information on whether or not the supervisory practices reported resulted in injury to the child, which may be a precipitating factor in contacting the child welfare system for intervention. Our findings on social support were consistent with previous work in that higher levels of social support were related to a lower likelihood of supervisory neglect (DePanfilis, 1996). We interpret these findings in the context of each supervisory neglect subtype below.

### 4.1 Leaving a Child Home Alone without a Suitable Caretaker

The first type of supervision problem examined was leaving a child home alone. Findings from this study suggest that older parents and parents with higher incomes are inclined to leave older children and female children home alone. Parents who report leaving children

home alone were more likely to be female, parents with lower levels of social support, and parents who report greater parenting stress. Some of these findings are in keeping with past literature on supervisory neglect, and on children left in “self-care.” The National Survey of America’s Families (NSAF) defines self-care as a child regularly spending time alone or with a sibling younger than 13 years of age (Vandivere, Tout, Zaslow, Calkins, & Capizzano, 2003). According to the 1999 NSAF, approximately 15% of all school-age children (6 to 12 years) regularly spend time caring for themselves, a proportion that increases with child age (Vandivere et al., 2003).

Past studies of supervisory neglect suggest that in some cases where a mother has left a child alone at home, she is typically involved in recreational activities (Coohey, 2008). In this study, parents were more likely to report leaving a child at home alone as the density of on premise alcohol outlets increased. This finding is in keeping with past research suggesting that a high neighborhood density of bars is associated with decreased parental monitoring behaviors (Freisthler et al., 2009). Theories related to routine drinking activities posit that the environment provides opportunities for parents to spend time outside of the home (Freisthler et al., 2007; Gruenewald et al., 1995; Treno et al., 2000). Off premise outlet density may be a marker for drinking at home; thus being protective against leaving a child home alone.

#### 4.2 Leaving a Young Child Alone in a Car

The next type of supervisory neglect examined was that of leaving a child alone in a car, a neglect subtype to which little research attention has been paid despite the fact that children left unattended in vehicles are at risk of injury and fatality due to factors such as hyperthermia (i.e. heat stroke), power windows, trunk entrapment, or setting a car into motion (Booth et al., 2010; Center for Disease Control & Prevention, 2002; Guard & Gallagher, 2005).

In this study, approximately 9% (8.7%) of parents reported leaving their child alone in a car, which is in keeping with survey data that suggests approximately 10% of parents with young children think it is “acceptable” to leave children unattended in vehicles (Guard & Gallagher, 2005). In this sample, younger children were more likely to be left alone in a car by parents who were single (versus married or cohabitating), female, parents with lower levels of social support and parents reporting higher levels of parenting stress.

#### 4.3 Unknown Safety

In keeping with past research on the relationship of substance use to child maltreatment (Walsh et al., 2003; Kelleher et al., 1994; Ammerman et al., 1999; Chaffin et al., 1996), parents who reported frequent, heavy drinking were significantly more likely to leave a child someplace where safety was unknown. The likelihood of this form of supervisory neglect also increased with parental age, which has been conceptualized as a protective factor in past studies of supervisory neglect (Coohey, 2008). Whereas older children and girls were more likely to be left at home alone, children who were left in unsafe places tended to be older and male.

These findings also suggest intricate relationships between parental race/ethnicity and supervisory neglect. Whereas parents of Asian race/ethnicity were significantly less likely to report leaving a child home alone when compared to whites, Hispanic and Asian caregivers were significantly more likely than whites to report leaving a child in a place of unknown safety. This finding may be partly explained by less access to and utilization of appropriate child care, particularly among immigrant parents (Karoly & Gonzalez, 2011).

As with the previous supervisory neglect subtypes examined in this study, lower levels of perceived social support and higher levels of parenting stress increased the likelihood of leaving a child in an unsafe place. Moreover, parental social network size was inversely related to reports of leaving a child in unsafe places, a finding that is consistent with early research on child neglect and social network attributes (Coohey, 1996). In such situations, a parent may choose to leave a child in an unsafe place or with an inappropriate caregiver when he or she has no one else to turn to.

#### 4.4 Unsafe Monitoring

Measures of unsafe monitoring included, among young children ages 0 to 4 years, hearing the child when he or she was out of the room, and among older children ages 5 to 9 years, knowing where their child was when he or she was playing outdoors. As with other forms of supervisory neglect, the likelihood of unsafe monitoring increased with parental age and with lower levels of social support. However, in contrast to the relationship of frequent, heavy drinking to leaving a child in an unsafe place, moderate and infrequent heavy drinking was inversely related to unsafe monitoring of the child in and around the home. Given that the missing data analysis shows that abstainers and ex-drinkers were more likely to have missing data (and therefore be excluded from the multivariate analyses), these findings may be an artifact of who chose to provide information on neglectful parenting practices.

Additional research is necessary to determine the mechanisms that underlie these particular drinking relationships. However, one speculation is that individuals who drink in moderation may demonstrate judgment that optimizes their ability to care for their children. Another possible explanation is that parents who drink infrequently but heavily may be inclined to make arrangements for child care as they anticipate drinking-related events (e.g., drinking at a wedding or on a holiday). Again, more research is needed to determine the meaning and implications of these particular findings. Past research has indicated that, in addition to problems with drugs or alcohol, mothers who provide inadequate supervision are more likely than mothers who provide adequate supervision to have a mental health challenge or poor problem-solving skills (Coohey, 1998, 2004; Hixon, 1992). Future research should seek to incorporate these variables.

#### 4.5 Implications for Policy, Practice and Prevention

While more research is needed, educational content regarding supervisory neglect might be provided through thoughtfully crafted and empirically tested campaign messages and educational programs that include content regarding the dangers of leaving children home alone, in vehicles, or in situations where a parent is not sure about a child's safety. Such content might include age and developmental considerations when leaving children by themselves or in the care of older children. Universal education targeting the prevention of

supervisory neglect could be made available for parents in neighborhood family resource centers, non-profit organizations, preschools, elementary school based settings, churches, community health clinics, and through the Women, Infants, and Children Supplemental Nutrition Program (WIC).

Finally, social work practitioners can also work to set relevant policies to prevent specific forms of supervisory neglect such as vehicle related injuries and fatalities. Parents who may be unaware of the dangers associated with leaving a child unsupervised in a vehicle may be responsive to laws against such behavior if it is publicized or enforced. Given that parents may be unaware of such laws, social workers can also work to publicize such information as part of educational campaigns (Guard & Gallagher, 2005).

#### 4.6 Limitations

Despite some of the advances this study is able to make, some limitations do exist. The study only uses single items to measure supervisory neglect. These items were chosen because they closely follow Coohy's (2003a) typology of supervisory neglect that can be found in the child welfare system. However, multi-item measures that correspond with this typology might provide a better sense of how social support and the alcohol environment affect supervisory neglect. Further, assessments about whether or not an adult should be present with a child were left up to the respondent. Thus, these responses may not meet child welfare definitions of neglect behavior or parents may engage in neglectful parenting practices that they may not view as potentially harmful. Future work should incorporate administrative data with survey data to determine child welfare involvement. The parenting stress measure has low reliability, likely due to the low number of items comprising this measure (Tavakol & Dennick, 2011). Using a measure with better reliability estimates will strengthen similar studies. The large number of comparisons in this study may make it vulnerable to Type I errors. The large sample size should mitigate some of these concerns but replication of these findings is needed.

Inferences drawn from cross-sectional studies must always be tempered by the understanding that they represent associations at only one point in time. Prospective longitudinal studies that measure how changes in social support, alcohol use, or alcohol outlet density affect inadequate supervision by parents will provide more useful information on the causes of supervisory neglect. Our study does not control for all environmental and community-level factors that may be related to parenting behaviors around neglect, such as neighborhood appearance and safety and condition of public spaces (McDonell, 2007). Finally, we have no information on the context that led to instances of supervisory neglect. Information on whether and how parents may be using alcohol outlets or whether or not they participating in other recreational activities, work activities, and their use of their support networks would provide a better picture of how these factors intertwine and result in inadequate supervision.

#### 5. Conclusion

This study does have a number of strengths that helps it advance the literature in the area of child neglect. The sample size allows us to include a large number of covariates in order to

examine alcohol use, alcohol outlet densities, and social support while controlling for other individual and family factors that may be related to the use of inadequate supervision among parents. Using a general population survey of parents provides us with important information about when supervisory neglect occurs for families not involved with the child welfare system and may help identify the types of conditions under which a parent may become involved with the child welfare system. For example, our study did not find a relationship between leaving a child home alone and alcohol use as previous studies done primarily with alcohol abusing parents or parents already involved with the child welfare system. Children may primarily become involved with the child welfare system only after problems with supervision become chronic or result in an injury to a child.

For three of our four outcome variables, average size of social support networks was not related to use of inadequate supervision. Previous work has found that larger networks are protective of supervisory neglect. However, it may be for a sub-group of parents in the general population, large support networks may increase a parent's social activities, particularly in areas where more "adult only" activities available.

Coohey (1996) noted more than 15 years ago that the use of more refined categories of child maltreatment promises to lead to more explicit models that can help us to understand supervisory neglect. This study demonstrates that discrete relationships exist between alcohol related variables and specific supervisory neglect subtypes at the ecological and individual levels. Moreover, the study demonstrates unique constellations of risk and protective factors for different forms of supervisory neglect, suggesting directions for future research.

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### Highlights

Alcohol use is not consistently related to subtypes of child supervisory neglect

Living in areas with more on-premise outlets is related to leaving a child home alone

People with larger social networks are less likely to leave a child in unsafe places

**Table 1**

Descriptive Statistics for Supervisory Neglect Parenting Behaviors, Socio-demographics, and Alcohol Use Behaviors (n = 3,023)

<b>Variable</b>	<b>Weighted %</b>	<b>Sample n</b>
<i>Home Alone (n= 2882)</i>		
No	83.9	2393
Yes	16.1	489
<i>Car Alone (n = 2043)</i>		
No	91.6	1864
Yes	8.7	179
<i>Left Child, Unsure if Safe (n= 2871)</i>		
No	95.5	2747
Yes	4.5	124
<i>Unsafe Monitoring (n = 3006)</i>		
No	85.5	2598
Yes	14.5	408
<i>Drinking Levels (n = 3008)</i>		
Lifetime Abstainer	9.3	292
Ex-Drinker	19.2	564
Light	41.9	1357
Moderate	18.4	517
Infrequent Heavy	4.0	101
Occasional Heavy	4.4	106
Frequent Heavy	2.7	71
<i>Gender (focal child, n= 2909)</i>		
Male	50.4	1495
Female	49.6	1414
<i>Gender (respondent, n = 3023)</i>		
Male	52.1	1973
Female	47.9	1050
<i>Marital Status (n = 3023)</i>		
Single, Divorced or Widowed	23.3	350
Currently married or cohabiting	76.7	2673
<i>Race/Ethnicity (n = 3009)</i>		
Non-Hispanic White	50.5	1753
Non-Hispanic Black	5.0	111
Hispanic	29.4	733
Asian	10.0	236
Multi-racial	2.5	92
Other	2.6	84
<i>Income (n = 2908)</i>		
\$20,000	10.9	258

<b>Variable</b>	<b>Weighted %</b>	<b>Sample n</b>
\$20,001 – \$40,000	15.0	358
\$40,001 – \$60,000	14.2	373
\$60,001 – \$80,000	14.3	450
\$80,001 – \$100,000	12.9	412
\$100,001 – \$150,000	19.4	648
\$150,001 +	13.3	409

**Table 2**

Descriptive Statistics for Parent and Focal Child Characteristics (Level 1, n = 3,023) and Alcohol Outlet Densities per Area (Level 2, n = 203)

<b>Variable</b>	<b>Weighted <math>\bar{x}</math> (sd)</b>	<b>Sample n</b>
Age (years, focal child)	6.68 (3.6)	2914
Age (years, respondent)	39.45 (8.5)	3023
Number of children	2.19 (0.9)	3023
Total Social Support	43.28 (5.2)	2947
Average Network Size	10.8 (10.5)	2971
Parenting Stress	3.93 (1.3)	2984
<u>Zip Code Level</u>		
Alcohol Outlet Density		
Off premise outlets per area	21.16 (3.0)	203
On premise outlets per area	4.83 (8.8)	203

**Table 3**

Multilevel Logistic Models of the Relationship between Leaving a Child without a Suitable Caretaker, Attributes of Support, Drinking, and Alcohol Outlets

Variable	Alone			In Car Alone		
	Model 1 b SE p	Model 2 b SE p	Model 1 b SE p	Model 2 b SE p		
Intercept	-2.137 0.205 ***	-6.856 0.906 ***	-3.091 0.329	-2.376 1.092 *		
<u>Level 2 (Zip Code):</u>						
Alcohol Outlet Density						
Off premise	-0.088 0.034 **	-0.119 0.044 **	-0.095 0.037 *	-0.046 0.033		
On premise	0.019 0.011	0.046 0.017 **	0.015 0.015	0.002 0.014		
<u>Level 1 (Individual):</u>						
Drinking Levels						
Ex-Drinker	0.257 0.224	-0.193 0.277	0.799 0.368 *	0.630 0.404		
Light	0.533 0.218 *	-0.090 0.269	0.745 0.373 *	0.470 0.406		
Moderate	0.528 0.243 **	-0.034 0.296	0.889 0.405 *	0.633 0.446		
Infrequent Heavy	0.109 0.384	-0.422 0.473	0.756 0.651	0.287 0.683		
Occasional Heavy	0.863 0.377 *	0.475 0.381	0.448 0.497	0.366 0.529		
Frequent Heavy	0.609 0.449	-0.215 0.512	-0.318 0.687	-1.018 0.834		
Male (focal child)		0.272 0.135		0.155 0.175		
Age (years, focal child)		0.543 0.040 ***		-0.072 0.034 *		
Male (respondent)		-0.332 0.143 *		-0.456 0.225 *		
Age (years, respondent)		0.030 0.012 *		0.017 0.014		
Number of children		0.000 0.072		0.030 0.104		
Currently married or cohabiting		0.062 0.232		-0.597 0.297 *		
Race/Ethnicity (reference group: White)						
Non-Hispanic Black		-0.693 0.425		-0.729 0.577		
Hispanic		0.045 0.203		-0.451 0.246		
Asian		-1.582 0.351 ***		-0.132 0.489		
Multi-racial		-0.606 0.413		-0.038 0.455		
Other		-1.013 0.693		-0.309 0.356		
Income		0.126 0.046 **		0.102 0.067		

Variable	Alone		Model 1		Model 2		Model 1		Model 2		In Car Alone	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Total Social Support			-0.036	0.016	*				-0.036	0.017	*	
Average Network Size			-0.004	0.006					-0.006	0.010		
Parenting Stress			0.138	0.052	**				0.274	0.078	***	

\* p < .05,

\*\* p < .01,

\*\*\* p < .001

**Table 4**

Multilevel Logistic Models of the Relationship between Unsafe Monitoring Parenting Practices, Attributes of Support, Drinking, and Alcohol Outlets

Variable	Left Child, Unsure if Safe						Unsafe Monitoring					
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Intercept	-2.899	0.507	***	-0.486	0.896	***	-1.226	0.241	***	0.155	1.093	
<u>Level 2 (Zip Code):</u>												
Alcohol Outlet Density												
Off premise	0.098	0.061		0.026	0.054		0.023	0.027		-0.040	0.032	
On premise	-0.083	0.035	*	-0.034	0.029		-0.009	0.013		0.035	0.020	
<u>Level 1 (Individual):</u>												
Drinking Levels												
Ex-Drinker	-0.042	0.565		0.159	0.581		-0.284	0.304		-0.341	0.372	
Light	-0.288	0.543		-0.100	0.592		-0.381	0.263		-0.576	0.306	
Moderate	-0.456	0.593		0.005	0.653		-0.661	0.281	*	-0.767	0.333	*
Infrequent Heavy	-0.762	0.739		-0.555	0.778		-0.991	0.429	*	-0.110	0.525	*
Occasional Heavy	0.273	0.632		0.739	0.615		-0.440	0.409		-0.475	0.486	
Frequent Heavy	0.337	0.347		1.096	0.453	*	0.041	0.474		-0.146	0.600	
Male (focal child)				0.453	0.169	**				0.234	0.181	
Age (years, focal child)				0.094	0.030	**				-0.276	0.036	***
Male (respondent)				-0.251	0.177					0.213	0.182	
Age (years, respondent)				0.038	0.010	***				0.049	0.010	***
Number of children				0.085	0.096					0.002	0.082	
Currently married or cohabiting				0.303	0.400					0.121	0.278	
Race/Ethnicity (reference group: White)												
Non-Hispanic Black				-0.681	0.463					-0.326	0.416	
Hispanic				0.815	0.253	***				0.205	0.198	
Asian				0.761	0.322	*				0.145	0.260	
Multi-racial				0.108	0.549					-0.494	0.499	
Other				0.749	0.474					-0.113	0.360	
Income				-0.090	0.063					-0.034	0.056	
Total Social Support				-0.045	0.016	***				-0.057	0.018	***

Variable	Left Child, Unsure if Safe						Unsafe Monitoring					
	Model 1			Model 2			Model 1			Model 2		
	b	SE	p	b	SE	p	b	SE	p	b	SE	p
Average Network Size				-0.032	0.015	*				-0.007	0.008	
Parenting Stress				0.174	0.079	*				-0.078	0.064	

\* p < .05,

\*\* p < .01,

\*\*\* p < .001