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Mothers' Drinking Motives

by

Sheila Kathleen Umemoto

A thesis submitted in partial fulfillment of the
requirements for the degree of

Master of Science
in
Psychology

Thesis Committee:
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Portland State University
2021

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Abstract

Increases in women's excessive alcohol use are leading to concerns about a developing public health problem since, for women, it takes fewer years and lower doses to develop a range of alcohol-induced health problems. Maternal status is generally considered protective against alcohol use; however, this effect is weakened by multiple social role strain, leading to higher stress and negative affect, and subsequent coping-related alcohol use (Kuntsche et al., 2011; Kuntsche, Knibbe, & Gmel, 2012). Given that the majority of mothers with young children are working or looking for work (72.3%; BLS, 2021), it is likely that the combination of competing demands and expectations associated with multiple roles of parent, partner, and employee may lead to negative affective states and be detrimental to women's health (Fokkema, 2002; Lahelma et al., 2002). The aim of this thesis was to explore mothers' drinking behavior among National Guard Service Member spouses (N=250, Mage=37; 76.4% working outside the home) recruited as part of the Military Employment Sleep and Health Study (MESH), who may be vulnerable to increased risk of multiple role strain and alcohol-related problems.

Mothers' domestic role burden was modeled as a single construct of mothers' domestic role strain (DRS), confirmed through Confirmatory Factor Analysis to consist of negative parenting behavior, chaotic home environment, and difficulty in self-reliance in managing household/family obligations. Next, mothers' alcohol use was modeled as a function of DRS and negative affect as literature on the mental health of mothers raising children asserts problematic alcohol use as specifically associated with loneliness (Cacioppo, Hawkley, Crawford et al., 2002) and distress (Maloney, et al., 2010). Finally,

the influence of drinking-to-cope motives were tested in line with theory on the relieving properties of alcohol (Conger, 1956; Cooper, 1994; Hull, 1981). Results demonstrated that mothers reporting more negative DRS are lonelier and more distressed than mothers with less DRS. Moderated mediation showed that for mothers experiencing loneliness in the context of more DRS, such loneliness predicted higher drinking quantities, particularly at higher levels of coping motives. The same relationship was found for distress-mediated pathways. Therefore, results are consistent with the notion that mothers who endorse some level of drinking to cope are most at risk for drinking when lonely or distressed associated with a more DRS. This thesis disentangles potential contributing factors of mothers' alcohol use behavior by highlighting the critical relationship that coping motives play in terms of mothers' DRS, associated negative affect, and alcohol use. As this triad is known to have numerous deleterious effects, such as impaired or ineffective parenting, heightened parental/family stress, marital discord, and child health and adjustment problems (Berg-Nielsen, Vikan, & Dahl, 2002; Connell & Goodman, 2002; Osborne & Berger, 2009), the ripple effect of stressful situations may reinforce mothers' coping motives (Conger, 1956) and potentially perpetuate mothers' susceptibility to harmful drinking (Boden & Fergusson, 2011; Conner et al., 2009; Keough et al., 2015). Finally, the multipath influence of coping motives between mothers' DRS and alcohol use may inform parenting and alcohol interventions and support programs to target alternative coping strategies to increase levels of family readiness, social connection, and reactivity to stress in the family that may work to reduce risk of alcohol problems for military and comparable civilian families.

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Introduction

Increases in women's excessive alcohol use are leading to concerns about a developing public health problem. Since 2001, the rate in which women engage in high-risk alcohol consumption has increased by 58% and alcohol use disorders (AUD) have increased by 84% (Grant, Chou & Saha, 2017). Women who drink appear not only to be drinking more alcohol but are also more likely than ever before to consume alcohol in a harmful way. Evidence shows that 23.3% of women in the United States (US) are at-risk drinkers, exceeding National Institute on Alcohol Abuse and Alcoholism's (NIAAA, 2020) guidelines of 3 drinks on a single day, or more than 7 drinks per week for women (Karriker-Jaffe, et al, 2019); and one in eight women are believed to engage in heavy episodic drinking (HED; four or more drinks in about 2 hours; NIAAA, 2020) at least three times a month (Tan, Denny, Cheal, Snizek, & Kanny, 2015). Over the past several decades, the pattern of women's drinking has trended toward higher rates of heavy/frequent drinking almost closing the gap between their own and men's (higher) frequency of HED (Azeez, et al, 2020; Keyes et al., 2008; Wilsnack, Wilsnack, Gmel, & Kantor, 2017; White, Castle, Chen et al, 2015).

Increases in women's excessive alcohol use presents a substantial problem as women are more vulnerable than men to the negative effects of alcohol due to their differing body composition (Center for Substance Abuse Treatment, 2009; Epstein, Fischer-Elber, & Al-Otaiba, 2007; Erol & Karpyak, 2015; Wilsnack & Wilsnack 1997). For example, studies show that for women, it takes fewer years and lower doses to develop a range of alcohol-induced health problems (Erol & Karpyak, 2015) that includes

but is not limited to alcohol-attributed cardiovascular disease and diabetes (WHO, 2014), increased risk of breast cancer (Brooks & Zakhari, 2013), decreased fertility (Eggert, Theobald, & Engfeldt, 2004), as well as other conditions like osteoporosis, (Bray, Ferlay, Soerjomataram, Siegel, Torre, & Jemal, 2018). In addition, women are less likely to seek services and support due to increased stigma related to problematic alcohol use (Wiechelt, 2007; Wiechelt, & Sales, 2005). Research suggests the single most important factor distinguishing substance use (SU) and treatment experiences of men and women is the experience of increased stigmatizing attitudes towards female substance users (Covington, 2000; Stringer & Baker, 2018). Women who do not conform to socially defined standards of feminine behavior are subjected to disapproving attitudes for their offenses such as viewing women as dirty, masculine, and sexually available (Anderson, 2010; Boyd, 2004; Parks & Scheidt, 2000).

Indeed, negative stereotypes of women alcohol users contradict normative roles as wife and mother who have expectations to be submissive, chaste, and nurturing caregivers (Fagan, 1994). Health professionals frequently describe mothers with SU problems as selfish and uncaring, irresponsible, neglectful, and disengaged (Klee, 1998). At the same time, treatment-seeking mothers worry that they would lose custody of their children if they sought treatment for alcohol problems (Marsh, D'Aunno & Smith, 2000). Therefore, the pervasiveness of women's drinking, and considerable burden of illness coupled with stigma-related barriers to help-seeking warrants attention to the context and processes that lead to and maintain alcohol consumption among women.

Mothers' Alcohol Consumption

Increased adult responsibilities including parenthood have been associated with declines in alcohol use, heavy drinking, and the use of other drugs (Bachman et al., 2002; Goldstein, 2003; Gotham et al., 2003; Osterle, Hill, Hawkins, & Abbot, 2008). Indeed, the few studies that examine sex-specific patterns of alcohol use among parents demonstrate how maternal responsibilities have a general protective effect on alcohol use; however more recent evidence suggests these effects are weakened by multiple social role strain (Kuntsche, Knibbe, Kuntsche, & Gmel, 2011). Premised on the *scarcity hypothesis* (Marks, 1977; Goode, 1960) and social role literature, women with multiple social roles of paid worker added to the normative condition of being a spouse, mother, and homemaker necessitates coping with often incompatible competing demands causing role overload, role conflict, guilt, anxiety, and other hazards resulting in impaired well-being and strain (Baruch & Barnett, 1986; Long & Porter, 1984).

The *multiple burden hypothesis* (MBH) suggests that the combination of competing demands and expectations associated with the roles of employee, partner, and parent can be detrimental to women's health (Fokkema, 2002; Lahelma et al., 2002), particularly leading to higher stress/negative affect and subsequent alcohol use (e.g., Gmel, et al., 2000; McCreary & Sadava, 1998; Peirce et al., 1994). Evidence by Kuntsche and colleagues (2009) show support for the MBH associated with HED among women. Likewise, single mothers, compared to married mothers, often report multiple social role strain related to higher levels of stress in handling multiple responsibilities (Burden, 1986); and single mothers are more likely to report monthly and weekly HED compared

to other mothers (Maloney, Hutchinson, Burns, & Mattick, 2010). Moreover, inequitable, or traditional sex-role household duties among mothers is associated with impediments in flexible responses to varying role demands, which leads to higher drinking amount per occasion (Kuntsche & Kuntsche, 2019). Thus, the potentially protective effect of maternal responsibilities on alcohol use may be significantly undermined for women who have multiple social roles.

Military Families

Military families represent an exemplary context in which mothers have a heightened likelihood of experiencing multiple role strain and inequitable share of household duties as service member (SM) spouses are primarily mothers (93% are female) with children under 18 at home (75%; Bradbard, Maury, & Armstrong, 2016). Among military families, at least three-quarters of spouses are employed in the civilian labor force (U.S. Department of Defense, 2017). At the same time, SM spouses assume sole legal, financial, and logistical responsibility for the household on top of their work and parental duties due to SM deployments, geographic separations, and/or unpredictable SM work schedules (Clever, & Segal, 2013; MacDermid Wadsworth, & Southwell, 2011; Willerton, Schwarz, MacDermid, & Schultheis, 2011). Furthermore, SM spouses continue to shoulder the burden of these roles and responsibilities even when the SM returns home or is no longer in the military (Pincus, House, Christenson, & Adler, 2004). SM spouses may be over-burdened by multiple role obligations (e.g., childrearing duties, managing the household, working outside the home) positioning them exceptionally vulnerable to increased risk of HED and alcohol-related problems.

Alcohol use in Military Families

HED is a widely accepted part of military culture (Ames & Cunradi, 2004; Ames, et al., 2009) and unfortunately, the prevalence of alcohol use and HED among SMs is common (e.g., Bray et al., 2013; Spera, et al., 2011; Stahre et al., 2009). While rates of alcohol problems among SM spouses have been found to be much lower than their SM counterpart (Ahmadi & Green, 2011), they may still be at increased risk relative to mothers in the general population, especially in certain circumstances. For example, when preparing for deployment, lower family readiness and reactivity to stress is related to SM spouse problematic drinking (Erbes, Kramer, Arbisi, DeGarmo, & Polusny, 2017). During deployment, stressors such as fear for SM safety, single parent responsibilities, and marital strain have negative impacts on the SM spouses (Schumm et al., 2000) including HED, poor stress management (Padden et al., 2011), and increased mental health diagnoses (Mansfield & Engel, 2011). During SM reintegration post-deployment, Blow and colleagues (2013) found that 20% of SM spouses (97% female) engage in problematic drinking, which is above the national US average for women (i.e., 17%; SAMHSA, 2014).

In addition to deployment-related stressors, trends in combined substance use disorders (SUDs) among SM spouses show gradual increases over time comparable to patterns of SMs SUD (U.S. DoD, 2011b) suggesting that there may be family patterns of alcohol and drug use. Indeed, it is possible that a SM spouse's alcohol use may be influenced by their SM's drinking behavior (Bartel et al., 2017; Latané, 1981). In civilian literature there is evidence supporting dyadic interactions between one's own SU

behavior affecting SU and mental health outcomes in their partner (Homish & Leonard, 2005; Lehavot, et al., 2014; Manchón et al., 2007), but the nature and strength of alcohol effects on outcomes depend on the sex of the drinker, the amount consumed, similarity of drinking amounts between partners, drinking motives, and context (e.g., Levitt et al., 2010).

Within the military literature, there is emerging evidence of dyadic influence on military couples' alcohol use, where male SM combat exposure has been associated with his female spouse's frequent HED, and this relationship remained significant when controlling for SM age, number of deployments, PTSD symptoms, and SM HED (Vest, Heavey, Homish, & Homish, 2018). Likewise, Lee and colleagues (2020), found that military-connected couples, particularly those engaging in hazardous drinking, uniquely influence one another's alcohol consumption behaviors. Taken as a whole, trends of increased alcohol use and alcohol-related problems among women accompanied by the social and cultural factors associated with alcohol use within the military family context yields mother's drinking behavior a potentially significant concern.

Study Objective

In sum, the increasing rate of women's alcohol consumption is alarming due to increased risk of negative health consequences and stigma-related barriers to treatment for alcohol misuse. Additionally, the current socioeconomic norms of women holding multiple social roles of parenting, working, and managing the household makes it likely that mothers feel overstrained. Therefore, the present study explored mothers' drinking behavior among SM spouses who are uniquely predisposed to higher DRS and a culture of excessive alcohol consumption. My objective was to identify the situations under which this process operates by considering mothers' drinking motives, domestic role strain, and negative affect (i.e., loneliness, distress).

Theoretical Background

Literature on underlying mechanisms of alcohol use indicate drinking behavior is not a unitary phenomenon. Referred to as drinking motives (DM; Cooper, 1994), the reasons individuals consume alcohol is based on a decision-making process in response to external social factors and/or to influence their emotional experiences such as seeking euphoria and reducing negative affect (Cooper, Frone, Russell, & Mudar, 1995; Cox & Klinger, 1988; Kuntsche, Knibbe, Gmel, & Engels, 2005; Woody, Urschel, & Alterman, 1992). Thus, DM stem from different needs with different antecedents (positive and negative) and consequences (internal and external) and not all drinking is necessarily hazardous. For example, positive motivations for drinking are appetitive in terms of seeking positive outcomes, such as drinking for enhancement, inducing or prolonging positive emotions, or to enjoy one's social interactions and activities, which are typically associated with moderate alcohol use (Kuntsche, Knibbe, Gmel, & Rutger, 2006). Meanwhile, the process underlying motives of drinking to cope (DTC) is conceptualized using the *tension reduction hypothesis* (TRH; Conger, 1956) that suggests alcohol is used as a distress reliever, which not only reinforces drinking in response to stressful situations, but also makes individuals who DTC prone to harmful drinking (Boden & Fergusson, 2011; Conner et al., 2009; Keough et al., 2015). DTC is reactive and negatively reinforcing (Cooper, 1994).

Notably, DTC has been distinguished as the strongest predictor of problematic alcohol use; DTC is associated with heightened negative affect and serves as a substitute for more adaptive emotion regulation strategies (Kuntsche et al., 2005; Merrill &

Thomas, 2013; Read et al., 2003). Meanwhile, consequences of heavy alcohol involvement can lead to increased negative affect (Kushner et al., 2000). Individuals who endorse DTC motives increasingly disregard adaptive coping strategies and drinking for such reasons possibly prolongs or exacerbates negative affective states (Armeli, et al., 2015). Thus, negative affect can both lead to and follow from alcohol use (Hussong & Chassin, 1994), consequently driving a sustained frequent pattern of self-medication with alcohol (Cooper, Russell, & George, 1988). The DM framework for alcohol use is subjective as it is based on personal experience, situation, and expectancies (Carpenter & Hasin, 1998; Cox & Klinger, 1988). It is therefore important to distinguish underlying social and contextual factors preceding women's drinking motives for alcohol use, particularly since empirical research on the characteristics of mothers who drink for specific motives have yet to be summarized.

Women's Drinking Motives

Compared to men, women are more likely to self-medicate their emotional distress, negative affect stemming from high stress, and mood and anxiety disorders with alcohol (Fox & Sinha, 2009; Sinha, 2008). However, when examining sex differences in the relationship between DTC motives and problematic alcohol outcomes, the literature appears somewhat inconsistent. Most research finds that DTC and rates of problematic alcohol use are generally stronger in women compared to men (Fossos et al., 2011; Kuntsche & Labhart, 2013; Lehavot et al., 2014; Simons et al., 2005) and coping motives are said to be more important for women's drinking than men's drinking (Kuntsche et al., 2015); though, DTC and alcohol use problems are also pronounced among men when

accounting for life stressors (Brown, & Richman, 2012) and lack of help-seeking for emotional problems (Moos, Moos, & Timko, 2006).

Meanwhile, an increasing body evidence of research on daily processes supports the notion that individual differences in DTC motives influence effects of daily negative affect and other negative daily events on quantity of alcohol consumption (Grant, Stewart, & Mohr, 2009; Mohr et al., 2005; Park, Armeli, & Tennen, 2004). And, while there may be no sex-differences in daily DTC scores, women reported more daily negative affect than men when averaged across all diary days (Arbeau, Kuiken, & Wild, 2011). Therefore, it may be premature to speculate that women or men are more likely to endorse DTC motives; however, it is essential to dissect the motivating characteristics related to the individual and given situation, such as mothers' multiple roles, in order to understand the process by which some women DTC.

Antecedents of Women's Drinking Motives

Peltier and colleagues (2019) emphasize the critical role of negative affect and stress reactivity for initiating and maintaining alcohol use among women, which have been implicated as determinates for women's susceptibility to HED (Dir, Bell, Adams, & Hulvershorn, 2017). Indeed, gendered patterns of psychopathology indicate women are at heightened risk for stress reactivity and internalizing symptoms of distress compared to men, who instead have a higher propensity to externalize distress (Robins & Reiger, 1991). Generally, women report more negative affect compared to men (Fujita, Diener, & Sandvik, 1991). Guinle and Sinha (2020) suggest that greater exposure to and experience of stress, negative affect, and anxiety disorders represent a specific risk pathway for the

onset and development of AUD in women. This is further evidenced by women's frequency to consume alcohol in response to negative emotions (Fox et al. 2009; McCaul et al. 2019), increased probability to experience comorbid emotional (i.e., depression and anxiety) and AUD (see Stewart et al., 2009, for review), and high anxiety sensitivity likely to endorse DTC and drink in negatively reinforcing situations (Reyno et al., 2006; Stewart, et al., 2001; Zack, et al., 2003). This warrants investigation of contextual factors that may be precipitating women's stressful and/or negative experiences.

Social Roles

Social roles influence family and peer network attitudes and norms (Bronfenbrenner, 1994), such as individual attitudes and behaviors toward drinking alcohol. Therefore, antecedents of women's drinking behavior likely stem from the roles commonly attributed to women in society, such as wife, caregiver, and mother, and the internal and external expectations held therein (Anderson, 2010; Boyd, 2004; Peralta & Jauk, 2011). Social Role Theory (Eagly, 1987; Eagly & Wood, 2012) argues that differential role occupancy in the family fosters gender expectations by which each sex is assumed to have characteristics that equip them to function adequately in typical roles. Gender stereotypes are thus emergent from role-bound activities, and the characteristics favored by these roles become sex stereotypes that influence one's typical activities.

According to traditional social roles, men are expected to be agentic (e.g., independent, masterful, and competent), whereas women are expected to be communal, (e.g., unselfish, nurturing, and concerned with others; Eagly, & Wood, 2016). Thus, a woman's behavior, including drinking behavior, is influenced by deeply rooted societal

expectations about a women's role as a mother. Consistent with this theory, mothers generally spend more time than fathers caring for children (Bianchi, 2000; Raley, Bianchi, & Wang, 2012) and are likely more vulnerable to the stressors of parenthood.

Mothers' Parenting

Parenting children is emotionally demanding and highly gendered. Over the past few decades, time and energy has increased for both mothers and fathers (Bianchi, 2000) to teach and play with their children (Sayer, Bianchi, & Robinson, 2004), as a result of a growing conviction that a child's success as an adult is cultivated through intense investment of parental time and resources (Lareau, 2011; Wall, 2010). Although fathers are spending more time with their children, mothers dedicate substantially more time with their children than fathers (Bianchi, 2011; Raley et al., 2012) and are more likely to reorganize other areas of their lives, such as their work schedules, to facilitate child rearing (Kaufman & Uhlenberg, 2000; Sanchez & Thomson, 1997). When providing childcare, mothers are more likely to report negative affective emotions, such as stress and fatigue, compared to fathers, who instead report positive emotions such as happiness (Connelly & Kimmel, 2015; Offer, 2014; Roeters & Gracia, 2016), suggesting there is a gender imbalance in the emotional rewards of parenting. Indeed, many studies provide evidence associating mothers' parenting circumstances with higher levels of psychological distress, as well as depression and anger (see Ross & Willigen, 1997, for review).

Child Problem Behavior and Psychological Distress. At certain stages of child development, parenting may be more demanding and stressful. In particular, in the first

few years of life, the child is dependent on the caregiver for survival and their development is marked by rapid progression of physical and cognitive changes requiring attentive parental responses, typically provided by mothers (Brazelton, 2013; Yeung et al., 2001). Nearly 40% of military dependent children are under the age of 6 years old (U.S. Department of Defense, 2017). Coupled with the stressors of military family life, it is not surprising that military parents report clinically significant levels of parenting stress, which is a significant predictor of child behavior problems (Flake, Davis, Johnson, & Middleton, 2009).

Additionally, situations in which children become disruptive are often perceived as irritating and stressful (Crnic and Low 2002), which can overwhelm and distress mothers (Goldstein et al. 2007), where low distress tolerance has been associated with alcohol use problems (Anestis et al., 2012; Buckner et al., 2007; Simons & Gaher, 2005; Wray et al., 2012). Hence, mothers of children with behavioral problems may be particularly vulnerable to alcohol use in addition to depression, anxiety, and distress compared with mothers of children without problem behaviors (Johnston & Mash, 2001; Pelham & Lang, 1993) and this can result in a potentially detrimental triad of reciprocal effects between mothers' psychological distress, alcohol use, and child behavior problems.

For example, a longitudinal study of parental alcohol use demonstrated mothers' psychological distress and child behavior was mutual influential over time and that greater problem behaviors among children increased parental alcohol use 10 years later (Zebrak, & Green, 2016). Moreover, Handley and Chassin (2008) show adolescents'

externalizing symptoms prospectively predicted mothers' negative affect, and mother's negative affect subsequently predicted mother's (but not father's) drinking. In other words, stressful parenting experiences are not only associated with drinking in response to negative affect, but this effect may be particularly stronger among mothers dealing with difficult parenting experiences. Accordingly, mothers' culminating distress is influenced during critical times in a child's development and when children exhibit problem/externalizing behavior, impacting mothers' self-efficacy and stress responses (Shaw & Bell, 1993), which could explain mothers' maintenance of alcohol use who may DTC (Pelham & Lang, 1999).

Home Chaos. Another potential mechanism of reciprocal influence reinforcing negative affect among mothers is parental self-regulation, which can influence the home environment (Bridget, Burt, Laake, & Oddi, 2013). Self-regulation represents an individual's ability to regulate their emotions, behaviors, and cognitions (Karoly, 1993; Rueda, Posner, & Rothbart, 2005). Hence, better maternal self-regulation is associated with more adaptive parenting and less home chaos (Bridgett et al., 2011; Deater-Deckard, Sewell, Petrill, & Thompson, 2010), whereas impaired maternal executive functioning (comparable to effortful control; Bridgett et al., 2013) is associated with elevated home chaos (Deater-Deckard et al., 2009). Chaotic homes tend to be noisy, be less organized, and have few structured routines (Wachs & Evans, 2010). Children raised in chaotic home environments are at greater risk of externalizing behavior problems (Coldwell, Pike, & Dunn, 2006; Hardaway, Wilson, Shaw, & Dishion, 2012), which are linked to mothers increased negative affect and alcohol use (Handley & Chassin, 2008; Johnston &

Mash, 2001; Pelham & Lang, 1993). In sum, maternal negative affect results from a harmful tripartite of negative parenting behavior, increased home chaos, and child problem behavior, which in turn may be reinforcing negative affect among mothers and thereby motivating DTC.

Mothers' Negative Affect

Research consistently demonstrates that mothers have an increased likelihood of experiencing negative affect as raising children is accompanied by often-silent challenges such as psychological distress, depression, anxiety, and feelings of isolation, disconnectedness, and not belonging (Hawkley & Cacioppo, 2010; Lee, Vasileiou, & Barnett, 2019; Mandai et al., 2018). Higher negative affect has been linked to greater emotion dysregulation, anxiety, and subsequent SUDs (Sinha, 2008; Brady & Sinha; 2005). It may be that mothers drink with the expectation that alcohol may reduce their negative affect. To this end, several factors may account for mothers' negative affect.

Loneliness. One of the most difficult adjustments when becoming a mother is coping with loneliness and social isolation (Lee, et al., 2019), which is probably more prevalent among mothers than was previously realized (see Rokach, 2004, for review). For example, maternity leave, pregnancy complications, and breastfeeding lead to social barriers related to women's independence, work, and social contact (Byvelds, & Jackson, 2019; Stewart-Knox, Gardiner, & Wright, 2003). Among military families, when the SM is deployed, spouses are prone to encounter separation strain and loneliness (Drummet, Coleman & Cable, 2003) to which they ascribe an experience of extreme aloneness, bordering on abandonment (Lapp, et al., 2010). Specifically, mothers report loneliness

related to having a smaller family social network and having fewer friends (Mandai et al., 2018). The feeling of loneliness is connected with a general negative perception about oneself and one's relations to other people (Åkerlind, & Hörnquist, 1992). However, substantial evidence demonstrates that loneliness is a core part of a constellation of socioemotional states including self-esteem, mood, anxiety, fear of negative evaluation, social support, dysphoria, and anger (see, e.g., Berscheid and Reis 1998; Shaver & Brennan 1991). Therefore, loneliness can influence one's affective state (Cacioppo et al., 2006).

As a negative affective state, loneliness research demonstrates that women are more likely to report greater frequency of intoxication than men at high levels of chronic loneliness (Bonin et al., 2000) and loneliness is associated with problematic alcohol use (Cacioppo, Hawkley, Crawford et al., 2002). Furthermore, evidence shows that sad passive responses to loneliness is characteristic of negative mood-related drinking behavior (Arpin, Mohr, & Brannan, 2015) where women are more negatively influenced by a transient (shorter/daily) experiences of loneliness. Most notably, in the context of mental health of mothers raising children, loneliness has been associated with high levels of psychological distress (Mandai et al., 2018). Psychological distress is predictive of risky and heavy drinking among parents (Maloney, et al., 2010). Thus, mothers may be motivated to use alcohol as a way of coping with loneliness and by association, psychological distress.

Social Stigma. The stress-coping framework, including alcohol use via Conger's (1956) tension reduction model, is frequently applied to explain the influence of stigma

on health (e.g., Krieger, 1999; Pascoe & Richman, 2009; Walters et al. 2002). Perceived stigma is a multidimensional concept that encompasses shame or embarrassment about oneself as well as anticipation and fear for encountering enacted stigma (overt discrimination or public criticism; Goffman; 1963). Perceived stigma related to mothering norms perpetuates feelings of loneliness among mothers in addition to negative self-relevant affect. For example, cultural expectations for mothers to be idealistically content (Lee, 1997) creates pressure for mothers to not admit to negative emotions (Rokach, 2004), which perpetuates felt loneliness (Ernst & Cacioppo, 1998) but also increases the likelihood of internalizing symptoms, such as shame (Lewis, 1971; Tangney & Dearing, 2002).

Indeed, discrepancies between anticipated/idealized and actual mother identities, confers strong pressure to conform with overwhelming advice and conditions, ranging from delivery procedures to feeding and sleep guidelines (Meeussen, & Van Laar, 2018), not to mention having to look good doing so (Simon, 2014). Deviance from these influential sociocultural expectations amplifies self-doubts and social isolation, as well as feelings of guilt and shame whenever women, in some way, “fail to live up to ideals of womanhood and motherhood” (Taylor & Wallace, 2012, *p.*76).

In line with Hull's (1981) *self-awareness model*, failure (real or perceived) to meet expectations leads to negative affect and painful self-evaluation, which will, in turn, lead to efforts to reduce distressing self-relevant thoughts; thus, creating particular conditions which motivate DTC. Specifically, individuals are less sensitive to self-relevant information as alcohol disrupts the information rendering process (Hull,

Levenson, Young, & Sher, 1983). In this way, mothers experiencing negative self-evaluation and scrutiny, such as feeling shame for bottle-feeding versus breastfeeding their child (Lee, Vasileiou, & Barnett, 2019), may drink to numb their psychological pain, which in turn may reinforce their negative self-evaluation as they fear public criticism (Tangney & Dearing, 2002). Therefore, based on Hull's model, mothers may drink more when their behavior conflicts with social role expectations in effort to reduce negative self-awareness.

Mommy Drinking Culture. Increases in alcohol consumption among women in their reproductive years has become more prominent in the past decade as well as among women who parent (McKetta & Keyes, 2019). Despite speculation of increased cultural acceptability (Plant & Plant, 2006), women's alcohol use continues to be socially constructed as negative and social stigma regarding female intoxication is still high in all societies (Dragišić Labaš, 2016). Traditional perspectives perceive female intoxication as a threat to notions of femininity, largely presented as risking their health, and even depicted as emasculating (Day, Gough, & McFadden 2004; Skeggs, 2005), where mothers are particularly subject to more severe social attitudes (Greenfield & Room, 1997; Hays, 1996; Marsh et al., 2000; Vogeltanz-Holm et al., 2004; Wilsnack, 1996). For instance, media attention has focused on an epidemic of so-called 'mommy drinking' (Campbell, 2019; Hosseini, 2017) where drinking mothers are portrayed as 'fractured females' implying that children could be put in danger by their drunken mothers (Stern, 2009). Among concerns, early studies report alcoholic mothers are unstable and neglect their children (Krauthamer, 1979), and others suggest mothers who drink fail to put their

child(ren)'s interest above their own and are viewed as immoral and inherently bad a mothering (Hays, 1996). Unfortunately, women must carefully navigate the stigma related to these social role expectations in the wake of encouraging, yet socially deviant, messages from emerging cultural influences regarding mothers drinking.

Proportionate with increases in women's alcohol consumption, alcohol advertisements have begun to heavily target women and mothers (Jacobs, 2012; Johnston, 2011; Kindy & Keating, 2016). Both alcohol products and messaging around alcohol consumption cater toward women as self-care/reward for the hard work of parenting (Hosseini, 2017; Campbell, 2019). However, it remains uncertain whether the increase in alcohol consumption among women has triggered the "pinkening" of alcohol marketing or whether this situation is mutually reinforcing. Nonetheless, it may be that mothers' alcohol consumption is triggered as strategy to cope with negative affect related to social role expectations; however, the potential social criticism of a mother's drinking may not only increase their vulnerability to further negative self-assessment (e.g., shame, guilt) but also increase their likelihood of solitary drinking (Luoma, Guinther, Lawless DesJardins, & Vilaridaga, 2018) in effort to conceal deviant behavior.

Using alcohol for reasons that are not culturally normative has been frequently offered as an indication of a drinker developing an alcohol use problem (see Bourgault & Demers, 1997; Corbin, Waddell, Ladensack, & Scott, 2020; for reviews). Indeed, Mohr and Colleagues (2001) provide strong evidence that tension-reduction drinking is more likely to occur in solitary contexts. Together, these studies suggest that role expectations and stigma may influence mothers' negative affect and lead to DTC, and perceived social

stigma related to mothers' drinking may lead to frequent solitary drinking as a result of their inclination to avoid social criticism.

In sum, women may be struggling to meet the competing demands of their multiple roles of wife, mother, homemaker, and employee while managing internal and societal expectations as women and mothers. As a result, mothers have a unique vulnerability for increased and varied experiences of negative affect including loneliness and distress. Negative affect is strongly predictive of DTC, which is the strongest predictor of problematic alcohol use. Additionally, mothers' likelihood of coping-related drinking increases risk of developing alcohol use problems. Hence, there is need for disentangling motives for and maintenance of alcohol use among mothers by examining their domestic role strain (DRS).

Gaps in the Literature

Research remains limited regarding underlying mechanisms that lead to women's heavy alcohol consumption behavior within the general population (Vourakis, 2017); and even less attention has focused specifically on mother's drinking behavior despite heightened stigma and public concern (Dragišić Labaš, 2016; Simon, 2014). Studies that have looked at mother's drinking remain under-researched during critical child developmental periods (Leonard, 2007) and generally, parent drinking literature is primarily focused on children's psychological and health outcomes (e.g., Berg-Nielsen, Vikan, & Dahl, 2002; Chassin et al., 1997; Connell & Goodman, 2002; Duncan et al., 2006; Osborne & Berger, 2009; Seljamo et al., 2006; White et al., 2000). More information regarding the motives and maintenance of alcohol use among mothers is needed for understanding critical antecedents of parental alcohol use (Hawkins & Monahan, 2009; Johnston & Mash, 2001; McKee, et al., 2008; Pelham & Lang, 1993; Smith, 2004).

In addition, alcohol research has well established that motivated drinking aimed at reducing negative, stressful, or aversive states is reinforced by the tension-reducing properties of alcohol (e.g., Boden & Fergusson, 2011; Conner et al., 2009; Keough et al., 2015); however, evidence for the mediating role of aggregated negative affect has not been consistent (Colder, & Chassin, 1993; Cooper, Russell, & Frone, 1990). When disaggregated, research shows that the sadness, anger, and guilt were significant mediators in stress-negative affect models in explaining alcohol use (Wills & Shiffman, 1985) and significant pathways differ based on coping style (Dermody et al., 2013). This

suggests that not all forms of negative affect similarly predict drinking behavior (Hussong, Hicks, Levy & Curran, 2001), implying there may be important negative affective experiences mediating the effect between stressors and alcohol use among mothers, such as loneliness and psychological distress. Yet, to our knowledge, no studies have specifically examined mothers' drinking motives.

Furthermore, SM spouses are uniquely predisposed to experiencing distress and loneliness as a result of multiple role strain due to parenting, working, and managing the household in addition to stressors associated with the context of SM deployment (Blow et al., 2013; Vest et al., 2018) yielding potential high risk for alcohol use and subsequent problems. However, research on alcohol use among military spouses remains limited despite these indications of risky alcohol use and psychological problems (e.g., Ahmadi & Green, 2011; Gorman, Blow, Ames, & Reed, 2011; Vest et al., 2018).

Present Study

The objective of this thesis was to explore mothers' drinking behavior among National Guard service member (SM) spouses. First, I examined parenting behavior, chaos in the home, and self-reliance in managing the household as indicators of SM spouses' DRS. Specifically, I hypothesized that mothers' DRS can be modeled as a single construct (H1) made up of parenting behavior, home chaos, and household role difficulty. Next, I explored the relationship between SM spouses' DRS, negative affect (i.e., loneliness and distress), and alcohol use outcomes to demonstrate the interrelationships among variables with the hypothesis that mothers' DRS would be associated with loneliness (H2a), distress (H3a) and drinking frequency (FRQ; H2b; H3b), quantity (QTY; H2c; H3c), and heavy drinking frequency (HFRQ; H2d; H3d); where drinking outcomes would also be associated with loneliness (H2e, H2f, H2g) and distress (H3e, H3f, H3g) as consistent with the literature (Cacioppo, et al., 2002; Kuntsche et al, 2019; Maloney, et al., 2010).

I additionally hypothesized that mothers' loneliness would mediate the relationship between mothers' DRS and alcohol FRQ (H2h), and alcohol QTY (H2i); and mothers' distress would mediate mothers' DRS and alcohol FRQ (H3h) and alcohol QTY (H3i) as supported by the TRH (Conger, 1956) such that mothers' DRS represents mothers' stressor, leading to increased loneliness and distress (respectively), which in turn would lead to alcohol use. Further, I hypothesized that the relationship between mothers' DRS and alcohol outcomes via loneliness and distress (respectively) would be moderated by DTC motives (H4 and H5), in line with a growing body of evidence that

individual difference in drinking motives may moderate effect of negative affective experiences on alcohol consumption (Arbeau et al., 2011; Grant, Stewart, & Mohr, 2009; Mohr et al., 2005; Park, Armeli, & Tennen, 2004). Finally, using both timepoints (baseline and follow up), the consistency in these relationships was explored to determine if alternative method of approach should be considered for future research (H6).

Method

Participants and Procedures

The present study used a subset of the data from the Oregon Military Employee Sleep and Health study (MESH). Participants consisted of female partners/spouses of full-time military service members of the Oregon Army and Air National Guard. SM partners/spouses were eligible to participate in the online survey portion of the study, collected between August 2017 and April 2018. As an incentive, participants were offered a gift card for \$25 for completing each survey. An electronic link was sent to the email addresses of participants after they signed up for the study, with a questionnaire sent via the REDCap survey data platform. Of note, MESH was a randomized control trial, where SM participants were randomly selected and assigned to either the intervention group or the waitlist control group one month following completion of baseline data collection. The intervention condition consisted of a one-hour interactive Family and Sleep Supportive Training for Leaders (FSSTL; designed to increase sleep leadership behaviors, family-supportive behaviors, and work-family relationships), and sleep feedback reports (administered one to two months following baseline data collection). The waitlist control group received their sleep feedback after 9-month data collection was complete and supervisors received the option to complete the FSSTL after the study was over. Hence, of the three waves of survey data collected, the present study examined responses from baseline and the final, 9-month follow-up surveys while controlling for intervention effects among the 9-month sample considering potential

dyadic influence within military connected couples on drinking behavior (Lee, et al., 2019).

Of the 497 SM employees who completed the baseline survey, $n = 395$ met eligibility criteria to recruit spouses to be part of the larger MESH study. Of those employees, a total of $n = 365$ spouses (92%) completed the baseline survey data collection. To create the sample of SM spouses who are mothers, male spouses ($n=50$) and 1 "other" gender and 1 missing response participants were removed; I also removed spouses who reported no dependent children ($n=57$) or did not respond to the question ($n=6$), leaving a total of $n = 250$ (68.5%). Of these mothers, 198 completed the 9-month follow up (79%). Thus, our final sample comprises SM spouses who are mothers for each time point were $n = 250$ at baseline and $n= 198$ at 9-months.

Demographics

Of the $n = 250$ mothers, 94% percent were married, 67% were in their current relationship 10 years or more, with an average of 2 children (Range= [1,9]). The majority of mothers (92%) had at least one child living at home at least 3 days a week. Mothers were primarily white (84.4%) and an average age of 37 (SD = 7.53, Median=36 years), who worked (40% full time; 24.8% part-time) or were actively seeking employment (3.6%), while the rest were unemployed (23.6%), retired or other (6%). Full sample characteristics are depicted in Table 1.

Measures

Parenting. The Alabama Parenting Questionnaire-Short Form (APQ-SF; Elgar et al., 2007), positive parenting (PP) subscale was used to assess the extent to which the following parenting behaviors occurred with the oldest child in the home: "You let your child know when he/she is doing a good job with something," "You compliment your child after he/she has done something well," and "You praise your child if he/she behaves well." Response options include 1=Never, 2=Almost never, 3=Sometimes, 4=Often, 5=Always. Items were reversed scored, such that higher scores will indicate negative parenting. The APQ-SF has adequate reliability and validity ($\alpha = .77$; Elgar et al., 2007), ranging to $\alpha = .91$ in the parenting literature among military families (Gerwitz et al, 2014). The present study scale reliability is consistent, $\alpha=.977$ at baseline and 9-months.

Household Duties. The Self-Reliance Index (SRI; McCubbin & Patterson, 1982) was used to assess how well SM spouses managed household roles and responsibilities when their SM is away (field assignments, temporary duty, etc.). Items included handle/discipline child(ren); get jobs done at home (cook meals, do laundry, do maintenance work, etc.); offer support and encouragement to your child(ren); handle family finances; make decisions for the family; maintain a positive attitude toward your spouse/partner being away; and handle emergencies (medical, major breakdown in household equipment, theft, etc.). Response options included: 1=no problem, 2=yes, small problem, 3=yes, big problem. Scale reliability $\alpha=.831$ at baseline.

CHAOS. Home environment was assessed using a modified 6-item version of the Confusion, Hubbub and Order Scale (CHAOS, Matheny et al., 1995). The modified

version has shown interrater and test-retest reliabilities in $\alpha = [.6, .8]$ (Deater-Deckard et al., 2009) and reliability $\alpha = .65$ (Deater-Deckard et al., 2012). These items assess how well the following statements describe the home context: "I have a regular morning routine," "You can't hear yourself think in our home," "It's a real zoo in our home," "We are usually able to stay on top of things," "There is usually a television turned on somewhere in our home," and "The atmosphere in our house is calm." Response options included: 1=not at all, 2=a little bit 3=neutral 4=somewhat 5=very much. Items one, four, and six will be reverse scored where higher sum scores indicate higher levels of chaos. The present study reliability analysis shows consistent with the literature, $\alpha = .618$, at baseline and $\alpha = .635$, at 9-months. However, the item "There is usually a television turned on somewhere in our home" indicated that removing this would increase the scale reliability. This particular item is not part of the original CHAOS scale (Matheny et al. 1995), though this adaptation has been used in other studies (e.g., Deater-Deckard, et al., 2009; Petrill, et al., 2009). It was more common among study participants to have a television in the home than to have a working telephone that could be used freely, so the item "The telephone takes up a lot of our time at home" was revised to the above statement. Due to the newer technology such as video games and individual communication devices (smart phones and tablets), this item may not be as relevant to assessing the current home environment. Thus, both theoretical and statistical evidence supports removing this item. The remaining five-item scale was tested, and results indicate acceptable reliability, $\alpha = .725$.

Alcohol. Alcohol use and problematic alcohol frequency was assessed using the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C; Bush et al., 1998). The *alcohol frequency* (FRQ) item surveyed "How often do you have a drink containing alcohol" with responses: 0=never, 1=monthly or less, 2=2 to 4 times a month, 3=2 to 3 times a week, and 4=4 or more times a week. The *alcohol quantity* (QTY) item surveyed "How many standard drinks containing alcohol do you have on a typical day when you are drinking" with responses: 0=never, 1=1 or 2, 2=3 or 4, 3=5 or 6, 4=7 to 9, and 5=10 or more. The *hazardous drinking frequency* (HFRQ) item surveyed "How often do you have six or more drinks on one occasion" with responses: 0=never, 1=less than monthly, 2=monthly, 3=weekly, 4=daily or almost daily. A review of the literature on the AUDIT-C has determined test-retest reliabilities over a 3-month interval ranging from $\alpha = [.65, .85]$ (Bradley et al., 1998) and Bergman and Kallmen (2002) report a test-retest reliability of $\alpha = .98$ over a 3 to 4 week interval, providing further evidence for the temporal stability of the AUDIT-C. Reliability coefficients found were at an acceptable level, ranging from $\alpha = [.69, .91]$, (Bergman & Kallmen, 2002; Gomez et al., 2005; Rumpf et al.; 2002). The present study internal consistencies across the different waves of data were $\alpha = .894$ and $\alpha = .790$ respectively.

Drinking Motivation. Drinking to cope motivations were assessed using three items from the Drinking Motive Questionnaire revised short form (DMQ-R SF; Kuntsche, & Kuntsche, 2009). An example item is "Thinking of all the times you drink, how often do you drink... "Because it helps you when you feel depressed or nervous?" with response items 1=Never or almost never, 2=Some of the time, 3=Half of the time,

4=Most of the time, 5=Always or almost always. Reliability coefficients found were at an acceptable level, both at baseline and follow-up, $\alpha=.869$, $.904$, respectively (Bergman & Kallmen, 2002; Gomez et al., 2005; Rumpf et al.; 2002), comparable to reliabilities found in the literature, reliability coping (e.g., $\alpha = .84$; Veilleux, Skinner, Reese, & Shaver, 2014).

Negative Affect. Mothers' negative affect experiences were measured by mothers' reports of loneliness and psychological distress. Hughes and colleagues (2004) short scale was used to measure loneliness with the following 3 items: "How often do you feel that you lack companionship," "How often do you feel left out," and "How often do you feel isolated from others." Response options include 1=hardly ever, 2=some of the time, 3=often. The three-item reliability is adequate in the literature, $\alpha=.72$ (Hughes et al., 2004) and within a military related sample, $\alpha = 0.87$ (Straus, Norman, & Pietrzak, 2020). In the present study, scale reliability was $\alpha=.834$ at baseline and $\alpha=.856$ at 9-months.

In addition, past 30-day distress was measured using the K6-Psychological distress scale (K6; Kessler et al., 2002) with 6 items that surveyed how often spouses "feel so depressed that nothing could cheer you up?" "Feel hopeless?" "Feel restless or fidgety?" "Feel that everything was an effort?" "Feel worthless?" and "Feel nervous?" Response options included 1=none of the time, 2=a little of the time, 3=some of the time, 4=most of the time, 5=all of the time. The Kessler Psychological Distress Scale has been identified as promising global measures of parental mental health in terms of psychometric properties and clinical utility (Webb et al., 2018). Internal consistency within a military sample was $\alpha = .898$ (Mohr et al., 2018); likewise, among SM spouses,

internal reliability was $\alpha = .87$ (Lee et al., 2020). The present study scale reliability was $\alpha=.878$, at baseline and $\alpha=.902$ at 9-months.

Data Analytic Strategy

Data Screening. A preliminary investigation was conducted to determine distributional assumption criteria, missing data patterns, and concerns regarding clustering, sample size, and power. Missing data analysis was conducted to compare associations of missing data between main study variables and demographics as well as between missingness at time one and time two (9m) and examining the reverse pattern of association between time points as outlined by Rubin (1976) for distinctions between types of missing data. Results indicated that the data is, at best, missing at random (MAR; see Supplement 1 for analyses). Next, previous work has indicated clustering of groups can bias standard errors if ignored (Barcikowski, 1981), thus, the intra-class correlation coefficients (ICC) were calculated to determine whether analyses require multilevel approaches (Bliese, 1998) as participants were recruited from partner groups, by SM branch (Army or Air), and several SM units within those branches of service. Results in Table 3 show that proportion of the total variance in each variable due to group difference (number partner, branch of partner service and SM unit) ranged between 0-.13, indicating minimal between-group variances. Thus, there was no empirical evidence of between group variance on these outcomes that would suggest clustering was a concern.

Next, a sensitivity analysis was conducted to determine whether having children “at least 3-days a week” was a significant influence on study variables as recent studies recommend including more specific factors related to social role obligations for interpretation of results (Kuntsche et al., 2011). Results of the one-way analysis of variance (ANOVA) indicated that only CHAOS levels measured at the follow-up time

point differed significantly between mothers with children at home at least 3 days a week ($n=181$) versus mothers with children less than 3 days per week ($n=15$), $F(1,195) = 10.59, p < .001$, which was not found among the baseline sample. Testing the homogeneity of variances determined group variances of CHAOS at 9 months did not differ significantly, $F_L(1,194) = 1.39, p = .239$, ns; however, there were substantial differences in group sizes that indicated conducting a Welch's test. Although results from the Welch's test indicated a significant difference among the two groups, $F_W(1, 18.02) = 16.02, p < .001$, these analyses did not control for intervention effects, and due to the inconsistency of influence at baseline compared to the follow-up, I determined there was no statistical reason to conclude that having children at least three days a week should be considered influential in this model – thus the full sample was retained.

Hypothesis Testing. The first hypothesis was that mothers' multiple role burden can be modeled comprehensively as a single phenomenon of domestic role strain (DRS) consisting of mothers' parenting behavior, home environment chaos level, and self-reliance difficulty in managing household and family obligations (H1). To test this, latent variable (LVs) from confirmatory factor analysis (CFA) were constructed for each of the main study variables at both baseline and follow up (9M) using Mplus version 8.0 (Muthén, & Muthén, 1998-2020) maximum likelihood with robust estimates (MLR) to account for non-normality and missingness (Kline, 2011). LVs allow researchers to explicitly take errors of measurement into account, thereby avoiding bias in parameter estimates and standard errors (Bollen, 1989; Brown, 2014) providing a better true estimate of each since they are not directly observable phenomena.

Next, mothers' DRS was modeled using structural equation modeling (SEM) second-order LV CFA of the three baseline subscales of parenting behavior, self-reliance, and CHAOS using MLR in Mplus (8.0) and the referent approach, setting the first, first-order LV for parenting behavior loading to 1 and the second-order LV (DRS) factor variance constrained to 1 (Newsom, 2015). Given that many good fitting models have significant chi-square tests, criteria from alternative fit indices as recommended by Hu and Bentler (1999) were used as benchmarks for model fit, including comparative fit index (CFI) close to .95 or higher, in combination with absolute fit indices, either the Root Mean Square Error of Approximation (RMSEA) or Standardized Root Mean Square Residual (SRMR)—above around .08 or .06, respectively.

The second set of hypotheses was that mothers' negative affect mediated the relationship between DRS and alcohol use behavior, specifically looking at loneliness (H2) and distress (H3). These hypotheses were tested using SEM with LV, where, in separate negative affect models for each time point, I tested whether mothers' DRS was associated with loneliness and distress with simultaneous alcohol outcomes (FRQ, QTY, and HFRQ). I also examined the indirect effects in each model regardless of direct associations in order to explore the interrelationship among variables. In terms of potential covariates, significant correlations (Supplement 3) indicated that number of children and individual income were associated with mothers' alcohol use behavior (FRQ, QTY, and DTC motives); however, the direction and magnitude of the correlation varied at each timepoint. Therefore, mothers' number of children and individual income were included as covariates in each model to account for these significant associations.

Third set of hypotheses was that drinking to cope (DTC) motives influence the relationship between mothers' DRS, negative affect, and alcohol use behavior. Hence, in the final set of analyses, DTC motives were assessed as a moderator of each of the pathways between DRS, negative affect, and alcohol use using a LV interaction approach (Maslowsky, Jager, & Hemken, 2015; Moulder, & Algina, 2002; Wang, & Wang, 2012). Specifically, I conducted independent models for each of the alcohol use outcome variables (FRQ, QTY, and HFRQ) as a function of the interaction of DTC and mothers' DRS and the interaction of DTC with each negative affect variable (loneliness-H4; distress-H5) respective to each alcohol use model. Last, I compared results from baseline and the 9M follow-up to replicate the effects at each time point and explore consistency.

Results

The following results are presented in hypothesis order. First, I present the CFA of mothers' DRS as a second order LV, where CFAs for each first-order LV of underlying factors are annotated in tables found in Supplement 3. Next, results are described by each time point (baseline and follow-up), by negative affect (loneliness and distress) for determining the results of each the mediation then the moderated mediation hypotheses. Following each section will be a brief summary of results.

Descriptive Statistics

Descriptive statistics reveal main study variables to be non-normally distributed at both baseline and 9-month follow-up (Table 2). At baseline ($n=250$), mothers report above average levels of chaos in the home ($M=10.09$, $SD=3.57$), lower than average ratings of difficulty relying on themselves for managing the household obligations ($M=8.69$, $SD=5.60$), and slightly more positive than negative parenting behaviors with their children ($M=4.18$, $SD=1.73$). Mothers report higher than average levels of loneliness ($M=4.72$, $SD=1.70$), and moderate levels of distress ($M=10.44$, $SD=4.11$) on average. Mothers' frequency of alcohol use ($M=1.42$, $SD=1.07$) was reported as monthly to 2 to 4 times a month with an average quantity per occasion of 1 to 2 drinks (Median=1.00). Mothers' hazardous consumption (6 or more drinks per occasion) was rare ($M=.200$, $SD=.478$) and DTC motives at baseline were low ($M=3.83$, $SD=1.79$).

Compared to baseline, mothers ($n=198$) reported slightly higher levels of chaos in the home ($M=11.08$, $SD=4.02$), and slightly more negative parenting behaviors with their children ($M=4.23$, $SD=1.62$) when surveyed 9 months later. Mothers maintained higher

than average levels of loneliness ($M=4.68$, $SD=1.76$), and a moderate level of distress ($M=10.27$, $SD=4.37$), though both slightly lower than the baseline reports. At follow-up, mothers' frequency of alcohol use ($M=1.40$, $SD=1.11$) was consistent with the baseline averages, reporting monthly to 2 to 4 times a month frequency and an average quantity per occasion of 1 to 2 drinks (Median=1.00). Mothers' hazardous consumption ($M=.220$, $SD=.517$) and DTC motives ($M=3.90$, $SD=1.94$) at follow-up remained low, but slightly higher than baseline averages.

Hypothesis 1: Domestic Role Strain (DRS) CFA

The hypothesis that mothers' DRS is a single construct (H1) made up of parenting behavior, home chaos, and household role difficulty (i.e., role strain) was assessed. Results show the chi-square was significant, $\chi^2(100)=148.60$, $p<.001$, $SF_{MLR}=1.10$; however, examination of alternative indices suggest acceptable fit criteria, $RMSEA=.046$, 90%CI [.029, .060], $CFI=.949$, $SRMR=.066$ (Figure 1). Though parenting behavior LV had a low loading value ($\beta=.164$, $p<.005$; Kenny, 1979) on the second-order DRS LV, the structural model was determined to be adequate for further use in both mediational and moderated mediational analyses, as loading values are relative to the phenomena under study and there exists no established standard for comparison (Preacher & MacCallum, 2003). Using the same approach at follow-up, a CFA was conducted using 9m parenting behavior and CHAOS LVs with the baseline self-reliance LV (modeled as a static LV). Results show the chi-square value was significant, $\chi^2(100)=145.472$, $p<.005$, $SF_{MLR}=1.043$; while alternative fit indices suggest acceptable fit, $RMSEA=.044$, 90%CI [.027, .059], $CFI=.957$, $SRMR=.061$. As similar to the baseline

CFA, the DRS second-order structural model was determined to be adequate despite the parenting behavior LV low loading value ($\beta=.188$, $p<.001$) on DRS (Preacher & MacCallum, 2003).

Therefore, Hypothesis 1 was supported at both baseline and follow-up that mothers' DRS can be modeled as a single construct. This result demonstrates explicitly the comprehensive nature of mothers' multiple role expectations and obligations by establishing the factor structure for mothers' DRS consisting of parenting behavior, home chaos level and self-reliance difficulty in managing household and family obligations. This was a critical step toward testing the remaining hypotheses involving mothers' DRS as an antecedent of mothers' negative affect and alcohol use. Examination of mothers' role burden as a higher-order phenomena rather than parsing apart aspects of mothers' role obligations or status removes the potential suppression of effects on affect and coping that may stem from simultaneous demands brought about by this particular context of multiple role strain.

BL Loneliness Models

BL Loneliness Mediation. The second hypothesis that mother's DRS would be associated with loneliness and drinking outcomes (H2) was assessed using SEM in Mplus with MLR estimator. Baseline results show acceptable model fit, $\chi^2(234) = 330.690$, $p < .001$, $SF_{MLR} = 1.038$; CFI = .928, SRMR = .069, RMSEA = .042, 90%CI [.031, .052], $p = .896$, ns. Depicted in Table 3, mothers' negative DRS significantly predicted higher loneliness (H2a), $\beta=.851$, $SE=.175$, $p<.001$, $\beta^*=.634$; however, neither DRS nor loneliness were directly associated with alcohol use outcomes ($ps=ns$; H2b-H2g).

Examination of the indirect effects (Table 4) did not support the hypothesized mediational relationships between DRS, loneliness, and alcohol use outcomes at baseline (p s= ns; H2h- H2j).

BL Loneliness Moderation. Next, I tested the hypothesis that DTC motives would influence the relationships between mothers' DRS and each of the drinking outcomes when mediated by loneliness (H4). Looking first at results for FRQ, higher alcohol FRQ was predicted by stronger DTC endorsement, $\beta=.666$, $SE=.156$, $p<.001$; however, neither interaction term, DRS, nor loneliness predicted alcohol FRQ (p s=ns). Moreover, neither DTC motives nor the interaction of DRS and DTC motives were associated with loneliness (p s=ns; Table 5). These results do not support the hypothesis that DTC motives influence the relationship between mothers' DRS and alcohol FRQ when mediated by loneliness (H4a) at baseline.

Turning to alcohol QTY, SEM analyses showed that higher loneliness was predicted by stronger DTC motives, $\beta=.263$, $SE=.132$, $p<.05$; however, the interaction between DTC and negative DRS was not associated with loneliness (p =ns; Table 6). Meanwhile, higher alcohol QTY was predicted by stronger DTC motives, $\beta=.281$, $SE=.082$, $p<.005$; and the interaction between DRS and DTC motives, $\beta=.441$, $SE=.140$, $p<.005$; and lower alcohol QTY was predicted by the interaction between loneliness and DTC, $\beta= -.237$, $SE=.098$, $p<.05$. These results support the hypothesis that DTC motives influence the relationship between mothers' DRS and alcohol QTY when mediated by loneliness (H4b) at baseline.

Given support for the moderation hypothesis, examination of conditional effects demonstrated that DTC motives influence the indirect moderated mediation pathway (Figure 2a) between loneliness and alcohol QTY at mean ($\beta = -.236$, $SE = .119$), and high ($\beta = -.256$, $SE = .127$) levels of DTC motives. These results indicate that mothers drink lower amounts of alcohol when lonely and consume less at mean and high levels of DTC motive endorsement. Additionally, conditional direct effects demonstrated DTC motives influence the direct pathway (Figure 2b) between DRS and alcohol QTY at low ($\beta = .407$, $SE = .118$), mean ($\beta = 1.194$, $SE = .346$), and high ($\beta = 1.981$, $SE = .591$) levels of DTC motives. These results indicate that mothers who have more negative DRS consume higher amounts of alcohol, and this relationship intensifies at stronger levels of DTC motive endorsement. Finally, the total indirect effects (Figure 2c) demonstrated that DTC motives influence mothers' negative DRS and alcohol QTY when mediated by loneliness at low ($\beta = .415$, $SE = .136$), mean ($\beta = 1.203$, $SE = .385$), and high ($\beta = 1.991$, $SE = .637$) levels of DTC endorsement. These results indicate that mothers consume higher amounts of alcohol as a function of higher DRS because of their loneliness, and this relationship intensifies at higher levels of DTC motive endorsement.

BL Loneliness Summary. In summary, findings from mediation models show mothers' higher DRS predicted higher loneliness; however, results did not support the hypothesized mediational relationships between DRS, loneliness, and alcohol use outcomes at baseline. Additionally, findings from moderated mediation when DTC motives were included in the model demonstrate DTC motives moderate relationships in the loneliness- QTY model. Essentially, lonely mothers consume less alcohol per

occasion at higher levels of DTC motives, whereas mothers consume more alcohol per occasion when facing higher DRS and consume more at stronger levels of DTC.

Meanwhile, mothers who face higher DRS and report higher loneliness, consume more alcohol per occasion as a function of their DTC motives. Therefore, despite the decrease in alcohol QTY when DTC in response to higher loneliness, mothers who face higher DRS and higher loneliness consume higher amounts of alcohol, and this intensifies at stronger DTC motivation endorsement.

BL Distress Models

BL Distress Mediation. The third hypothesis that mother's DRS would be associated with distress and drinking outcomes (H3) was assessed using SEM in Mplus with MLR estimator. At baseline, results show adequate model fit, $\chi^2(305) = 481.768$, $p < .001$, $SF_{MLR} = 1.042$; CFI = .903, SRMR = .072, RMSEA = .051, 90%CI [.042, .059], $p = .443$, ns. Results indicate that higher DRS predicted higher distress, $\beta = .367$ SE = .061, $p < .001$, $\beta^* = .601$ (H3a), and higher distress predicted lower alcohol FRQ, $\beta = -.440$, SE = .151, $p < .01$, $\beta^* = -.251$ (H3e). Meanwhile, mothers' DRS was not directly associated with any alcohol use outcomes, nor was distress associated with alcohol QTY or HFRQ (p 's = ns; Table 7).

Examination of the indirect effects demonstrated support for the mediation hypothesis that mothers' DRS indirectly predicted lower alcohol FRQ via distress, $\beta = -.162$, SE = .067, $p < .05$, $\beta^* = -.151$, 95%CI [-.272, -.029] (H3h; Table 8). These results suggest that while mothers' DRS is not directly associated with alcohol use, it is significantly associated with less frequent alcohol consumption when accounting for

higher distress. Thus, mothers with higher DRS consume alcohol less frequently as a function of higher distress.

BL Distress Moderation. Next, I tested the hypothesis that DTC motives would influence the relationship between mothers' DRS and each of the drinking outcomes when mediated by distress (H5). Looking first at FRQ, results of the moderated mediation test showed that higher distress was predicted stronger DTC motives, $\beta=.184$, $SE=.093$, $p<.05$; but not by the interaction between DRS and DTC ($p=ns$; Table 9). Moreover, the interactions of DTC with neither distress nor DRS were associated with alcohol FRQ. Though, higher distress predicted less FRQ alcohol use, $\beta=-.714$, $SE=.228$, $p<.005$, and stronger DTC motives predicted more FRQ alcohol use, $\beta=.853$, $SE=.203$, $p<.001$. Thus, the results did not support the hypothesis that DTC motives moderate relationships between mothers' DRS and alcohol FRQ when mediated by distress (H5a) at baseline.

Results of the same model testing with alcohol QTY revealed that higher distress was predicted by the interaction between DTC and DRS, $\beta=.062$, $SE=.030$, $p<.05$; and higher alcohol QTY was predicted by the interaction between DTC and DRS, $\beta=.376$, $SE=.142$, $p<.01$, which supports the hypothesis that DTC motives moderate the relationship between mothers' DRS and alcohol QTY when mediated by distress (H5b; Table 10) at baseline. However, alcohol QTY was not predicted by the interaction between distress and DTC motives ($p=ns$). Examination of conditional effects demonstrated that DTC motives influence the conditional direct pathway (Figure 3a) where higher DRS predicts higher alcohol QTY at low ($\beta=.400$, $SE=.132$), mean

($\beta=1.071$, $SE=.369$), and high ($\beta=1.742$, $SE=.619$) levels of DTC endorsement. Next, the total indirect effects (Figure 3b) demonstrated that when mediated by distress, higher DRS indirectly predicts higher alcohol QTY at low ($\beta=.353$, $SE=.148$), mean ($\beta=1.013$, $SE=.405$), and high ($\beta=1.672$, $SE=.666$) levels of DTC endorsement. Essentially, the relationship between higher DRS and higher alcohol QTY gets stronger at higher levels of DTC endorsement, and this remains true when mediated by distress.

BL Distress Summary. In summary, mothers' DRS was not directly associated with any alcohol use outcomes; however, mothers' higher DRS predicted less frequent alcohol use when mediated by distress. This may suggest that the relationship between DRS and alcohol FRQ becomes evident when accounting for mothers' distress related to higher DRS. Further probing of this mediation also indicates that mothers drink more frequently when higher distress is associated with higher DRS compared to when mothers drink from distressed affect alone ($\beta\Delta=.279$). Meanwhile, when exploring whether DTC motives influence this relationship, findings did not support any moderating effect on the relationships predicting alcohol FRQ. However, there was support for moderation of DTC on mothers' DRS and alcohol QTY. Specifically, DTC motives moderated the direct relationship between mothers' DRS and alcohol QTY, and the indirect relationship between DRS and alcohol QTY when mediated by distress. Essentially, mothers with higher DRS have higher levels of distress and consume higher amounts of alcohol, and this relationship gets stronger at higher levels of DTC motive endorsement.

Nine-month Results

In this next section of results, analyses were conducted as a replication of the baseline model testing using the follow up (9m) survey. Descriptive statistics, distributional diagnostics and summary statistics are depicted in Tables 1 and 2, respectively.

Nine-month Loneliness Models

Nine-month Loneliness Mediation. Recalling that the second hypothesis stated the prediction that mother's DRS would be associated with loneliness and drinking outcomes (H2); for the follow-up assessment, analyses controlled for intervention effects (Cond). Once again, results show acceptable model fit criteria, $\chi^2(252) = 369.756, p < .001$, $SF_{MLR} = .983$; $CFI = .922$, $SRMR = .074$, $RMSEA = .049$, $90\%CI [.038, .059]$, $p = .554$, ns. Depicted in Table 11, mothers' higher DRS predicted higher loneliness (H2a), $\beta = .515$, $SE = .130$, $p < .001$, $\beta^* = .450$; however, neither DRS nor loneliness were directly associated with alcohol use outcomes ($ps = ns$; H2b-H2g). Examination of the indirect effects (Table 12) did not support the hypothesized mediational relationship between DRS, loneliness, and alcohol use outcomes at follow-up (H2h, H2i).

Nine-month Loneliness Moderation. Next, I tested the hypothesis that DTC motives would influence the relationship between mothers' DRS and each of the drinking outcomes when mediated by loneliness (H4). Results showed that higher alcohol FRQ was predicted by stronger DTC motives, $\beta = 1.040$, $SE = .484$, $p < .05$; and the interaction between loneliness and DTC motives, $\beta = .381$, $SE = .173$, $p < .05$, while mothers' DRS, loneliness, and the interaction between DRS and DTC motives merely approached

significance ($ps = [.055, .073]$; Table 13). These results support the hypothesis that DTC motives influence the relationship between mothers' DRS and alcohol FRQ when mediated by loneliness (H4a) at follow up. Meanwhile, examination of conditional direct effects (Figure 4a) demonstrated DRS predicted alcohol FRQ at low ($\beta = -1.508$, $SE = .744$), mean ($\beta = -2.684$, $SE = 1.354$), and high ($\beta = -3.860$, $SE = 1.966$) levels of DTC endorsement such that mothers with higher DRS consumed alcohol less frequently and this relationship intensified at higher levels of DTC motives. Additionally, the total indirect effects (Figure 4b) demonstrated that when mediated by loneliness, DRS predicts alcohol FRQ at low ($\beta = -1.355$, $SE = .669$), mean ($\beta = -2.492$, $SE = 1.262$), and high ($\beta = -3.629$, $SE = 1.857$) levels of DTC endorsement such that mothers with higher DRS consumed alcohol less frequently because of their loneliness, which intensified at higher levels of DTC motives.

Turning to alcohol QTY, results showed higher alcohol QTY was predicted by stronger DTC motives, $\beta = .268$, $SE = .124$, $p < .05$; and the interaction between DRS and DTC motives, $\beta = .332$, $SE = .122$, $p < .01$; whereas lower alcohol QTY was predicted by the interaction between loneliness and DTC, $\beta = -.253$, $SE = .102$, $p < .05$ (Table 14). These results support the hypothesis that DTC motives influence the relationship between mothers' DRS and alcohol QTY when mediated by loneliness (H4b) at follow-up. Examination of conditional direct effects (Figure 5a) demonstrated DRS predicted alcohol QTY at low ($\beta = .655$, $SE = .249$), mean ($\beta = 1.298$, $SE = .480$), and high ($\beta = 1.942$, $SE = .715$) levels of DTC endorsement such that mothers with higher DRS drank more alcohol, and this intensified at higher levels of DTC motives. Additionally, the total

indirect effects (Figure 5b) demonstrated that when mediated by loneliness, DRS predicted alcohol QTY at low ($\beta=.654$, $SE=.235$), mean ($\beta=1.297$, $SE=.466$), and high ($\beta=1.940$, $SE=.698$) levels of DTC endorsement such that mothers with higher DRS consumed more alcohol because of their loneliness, and this relationship intensified at higher levels of DTC motives.

Nine-month Loneliness Summary. Similar to the baseline results, mothers' DRS predicted higher levels loneliness; yet, neither DRS nor loneliness were directly associated with alcohol use outcomes and results did not support the hypothesized mediational relationships between DRS, loneliness, and alcohol use outcomes at follow-up. However, unlike the baseline results, DTC motives did moderate relationships in the loneliness-FRQ model at follow-up, where DTC motives influenced the direct relationship between mothers' DRS and alcohol FRQ and the indirect relationship between DRS and alcohol FRQ when mediated by loneliness. In other words, mothers with stronger DTC motives drink less frequently as a function of higher DRS because they predicted higher levels of loneliness.

Meanwhile, results also differed from baseline in that DTC motives did not moderate the relationship between loneliness and alcohol QTY; however, as found in the baseline analyses, DTC did moderate the direct relationship between mothers' DRS and alcohol QTY, and the indirect relationship between DRS and alcohol QTY when mediated by loneliness. Essentially, mothers drink more alcohol per occasion as a function of higher DRS because they predicted higher levels of loneliness. Together,

these model results demonstrate that mothers drink less frequently but in higher quantities as a function of higher loneliness related to higher DRS.

Nine-months Distress Models

Nine-month Distress Mediation. Recalling that the third hypothesis stated the prediction that mother's DRS would be associated with distress and drinking outcomes (H3); for the follow-up assessment, analyses controlled for intervention effects (Cond). Once again, results show acceptable model fit, $\chi^2(326) = 528.588, p < .001$, $SF_{MLR} = 1.006$; CFI = .899, SRMR = .076, RMSEA = .059, 90%CI [.048, .065], $p = .113$, ns. Similar to baseline, results indicated higher DRS predicted higher distress, $\beta = .407$ SE = .064, $p < .001$, $\beta^* = .669$ (H3a), but was not directly associated with alcohol use outcomes ($p = ns$; Table 15). Meanwhile, unlike baseline results, distress was not associated with alcohol use FRQ and examination of the indirect effects did not support the hypothesis that mothers' DRS predicted alcohol use when mediated by distress (Table 16). These results indicate that at follow-up, mothers' DRS was associated with increased distress, but was not associated with alcohol use, nor does distress mediate these relationships.

Nine-month Distress Moderation. Next, I tested the hypothesis that DTC motives would influence the relationship between mothers' DRS and each of the drinking outcomes when mediated by distress at follow-up. Results depicted in Table 17 show that higher alcohol FRQ was predicted by stronger DTC motives, $\beta = 1.214$, SE = .459, $p < .01$, and the interaction between DRS and DTC motives, $\beta = .896$, SE = .279, $p < .001$; whereas the interaction between distress and DTC motives predicted lower alcohol FRQ, $\beta = -.988$, SE = .364, $p < .01$. These results support the hypothesis that DTC motives influence the

relationship between mothers' DRS and alcohol FRQ when mediated by distress (H5a) at follow-up.

Examination of conditional effects demonstrated DTC motives influence the indirect mediation pathway (Figure 6a) between distress and alcohol FRQ at low ($\beta = -.811$, $SE = .353$), mean ($\beta = -1.051$, $SE = .502$), and high ($\beta = -1.291$, $SE = .659$) levels of DTC endorsement where mothers' higher distress predicted less frequent drinking, which was stronger at higher levels of DTC motives. The conditional direct effects (Figure 6b) demonstrated DRS predicted alcohol FRQ at low ($\beta = 2.091$, $SE = .829$), mean ($\beta = 3.829$, $SE = 1.355$), and high ($\beta = 5.567$, $SE = 1.889$) levels of DTC endorsement where mothers' higher DRS predicted more frequent drinking and this relationship was stronger at higher levels of DTC motives. Finally, the total indirect effects (Figure 6c) demonstrated that when mediated by distress, DRS indirectly predicts alcohol FRQ at low ($\beta = 1.403$, $SE = .406$), mean ($\beta = 2.900$, $SE = .803$), and high ($\beta = 4.398$, $SE = 1.206$) levels of DTC endorsement where mothers' higher DRS predicted more frequent drinking as a function of higher distress, which was stronger at higher levels of DTC motives.

Turning to models predicting alcohol QTY, lower alcohol QTY was predicted by the interaction between distress and DTC motives, $\beta = -.573$, $SE = .201$, $p < .005$, while distress, DRS, DTC, and the interaction between DRS and DTC motives were not significant ($ps = ns$; Table 18). Still, these results support the hypothesis that DTC motives influence the relationship between mothers' DRS and alcohol QTY when mediated by distress (H5b). Examination of the total indirect effects (Figure 7) demonstrate DRS predicts alcohol QTY at low ($\beta = .894$, $SE = .350$), mean ($\beta = 1.813$, $SE = .758$), and high

($\beta=2.731$, $SE=1.169$) levels of DTC endorsement such that mothers' higher DRS predicted higher alcohol QTY as a function of higher distress, which was stronger at higher levels of DTC motives.

Nine-month Distress Summary. In summary, mothers' DRS predicted increased distress; however, unlike baseline results, neither DRS nor distress predicted alcohol use outcomes and results did not support the hypothesized mediational relationships between DRS, distress, and alcohol use at follow-up. Meanwhile, DTC motives were found to moderate several pathways in the distress-FRQ model, where, at higher levels of DTC motives, mothers with higher distress drank less frequently. Meanwhile, at higher levels of DTC motives, mothers with higher DRS and who experience more distress from higher DRS drank more frequently. In addition, DTC motives moderated the indirect pathway in the distress-QTY model which indicated mothers with higher DRS consumed more alcohol because of higher distress, and this intensified at higher levels of DTC motives.

Moderation Models: Hazardous Alcohol Frequency

With respect to the moderation models examining alcohol HFRQ, model results did not terminate normally. Mplus warnings suggested to increase the iterations and/or the convergence value; however, the model continued to fail to perform when iterations were increased to 1000 and, when the convergence value was increased. Without empirical evidence to support additional modification, at this juncture, the results are inconclusive as to whether DTC motives influence the relationship between mothers' DRS and alcohol HFRQ when mediated by either negative affect across both time points.

Alternative structuring of the data for this particular variable, such as a categorical/ordinal variable, may be the first step to analyze this hypothesis; hence, caution is recommended when interpretating this result.

Discussion

The first hypothesis was affirmed that mothers' DRS can be modeled as a single construct made up of parenting behavior, home environment, and self-reliance in managing household/family obligations. Meanwhile, both survey timepoints demonstrate that mothers' higher DRS is associated with higher levels of loneliness and distress, which is in line with parenting literature on negative affect (Goldstein et al. 2007; Handley & Chassin, 2008; Hawkley & Cacioppo, 2010; Johnston & Mash, 2001; Lee, et al., 2019; Mandai et al., 2018; Pelham & Lang, 1993) and affirms the hypotheses that mothers' DRS is associated with each negative affect. However, at both timepoints, in both negative affect mediation models, mothers' DRS was not directly associated with any of the alcohol use outcomes, nor was either negative affect directly associated with alcohol QTY and HFRQ. Although, at baseline, evidence supports mediation between DRS and alcohol FRQ via distress, this was not replicated at follow-up. The inconsistent finding may stem from the significant correlation between alcohol FRQ and distress found at baseline ($r = -.135$, $p < .05$) that was not present at follow up. Further analyses across sample differences would be required to conclude that mothers drink less frequently as a function of DRS and distress.

While the mediation hypotheses were not initially supported, several mediation relationships were significant once DTC motives were included in the model as a moderator (see Table 20 for affirmed hypotheses). At both time points, each negative affect (loneliness and distress) was affirmed to mediate the relationship between mothers' DRS and alcohol QTY as a function of DTC motives. This was also true between

mothers' DRS and alcohol FRQ but only at follow-up. Overall, at lower levels of DTC motives, there was not much evidence for predicted patterns as there was at higher levels of DTC, as would be expected (Cooper et al., 1995). At higher levels of DTC motives, findings suggest several potential patterns of alcohol-related coping among mothers in accordance with the tension-reduction hypothesis (Conger, 1956), in which mothers' alcohol use may be motivated by its function as a coping strategy to reduce effects of strain/stressors (i.e., DRS and negative affect). First is mothers' drinking behavior related to each negative affect as a function of DTC motives. Second is mothers' drinking behavior related to DRS as a function of DTC motives. And third, is mothers' drinking behavior in response to DRS as a function of negative affect and dependent on level of DTC motives.

DTC and Negative Affect

The first pattern of mothers' alcohol use behavior is demonstrated by the association between negative affect and alcohol use as dependent on the level of DTC motives. Evidence from this study reveals that mothers with higher DTC motives were lonelier and more distressed in general. Among lonely mothers, those who endorsed higher DTC motives drank more frequently, but consumed lower quantities of alcohol compared to less lonely mothers and those with lower DTC motives. Among distressed mothers, those who endorsed higher DTC motives drank less frequently and consumed lower quantities of alcohol compared to less distressed mothers and those with lower DTC motives. These findings suggest that both lonely and distressed mothers who endorse higher DTC drink less frequently, but lonely mothers report higher quantities and

distressed mothers report lower quantities of alcohol consumed per occasion. Thus, not all forms of negative affect similarly predict alcohol use at higher levels of drinking to cope motives.

DTC and Domestic Role Strain

The second pattern of alcohol use behavior among mothers is demonstrated by the association between their DRS and alcohol use as dependent on level of DTC motives. Findings reveal mothers' higher DRS (controlling for either negative affect) is related to a higher quantity of alcohol consumed per occasion as a function of stronger DTC motive endorsement; however, mothers' higher DRS is related to less frequent drinking occasions when controlling for loneliness as a function of stronger DTC motive endorsement. And mothers' higher DRS is related to more frequent drinking occasions when controlling for distress, as a function of stronger DTC motive endorsement. In other words, the pattern suggests that when we control for loneliness, mothers with higher DRS consume a higher quantity of alcohol but drink less frequently at higher levels of DTC motives compared to mothers with lower DRS and those with lower DTC motives. Mothers with higher DRS with stronger DTC motives (compared to mothers with lower DRS and/or lower DTC motive) consume a higher quantity of alcohol and drink more frequently when controlling for distress.

DTC and Domestic Role Strain via Negative Affect

The third pattern of alcohol use behavior among mothers is demonstrated by the association between DRS and alcohol use when accounting for their negative affect, and dependent on their level of DTC motives. Where previous literature is mixed regarding

the mediating role of negative affect in the relationship between parenting and alcohol use (Colder, & Chassin, 1993; Cooper, Russell, & Frone, 1990), findings from this study suggest that when we account for mother's negative affect related to DRS, their alcohol use behavior is illuminated as a function of their level of DTC motive endorsement in such contexts. First, mothers who endorse DTC motives are lonelier and distressed compared to lower DTC mothers. Second, lonely and distressed mothers with higher DRS consume higher quantities of alcohol at higher levels of DTC motives compared to mothers with lower DRS, lower DTC motives, and lower negative affect. Finally, at higher levels of DTC motives, distressed mothers with higher DRS are drinking more frequently whereas lonely mothers with lower DRS are drinking less frequently, relative to mothers with lower DRS, lower DTC motives, and lower negative affect (respectively). Overall, findings support recommendations to disentangle the influence of various forms of negative affect on alcohol use behavior (Hussong, Hicks, Levy & Curran, 2001) in order to clarify how mothers' DTC motives may be influencing the relationship between mothers' DRS and alcohol consumption behavior.

Implications

The mechanisms by which parenting is related to drinking has been limited in scope by the lack of identifying the multitude of factors in mothers' stressor-context leading to alcohol use behavior. The present study demonstrates how mothers' DRS is supported as a single phenomenon made up of parenting behavior, home environment, and self-reliance in managing household and family obligations. This inference is crucial for determining the stressor-context of mothers' multiple role strain in relation to their

negative affect and alcohol use. Where evidence supporting the stress-negative affect-drinking model has been mixed likely due to differences in researcher operationalization of negative affect (e.g., Dermody, Cheong, & Manuck, 2013; Hussong & Chassin, 1994; McCreary & Sadava, 2000), implications from the current study suggest examining specific components of negative affect found prevalent among mothers to parse the differential relationships therein. Specifically, loneliness and psychological distress have been associated in the context of mental health of mothers raising children (e.g., Mandai et al., 2018), where the current study contributes further evidence as to how mothers drinking behavior is influenced by DRS and higher distress and loneliness.

In line with current literature that shows at high levels of loneliness (relative to men), women exhibit greater frequency of alcohol intoxication (Bonin, McCreary, & Sadava, 2000), this work supports the notion that the interaction of loneliness and DTC motives acts as an amplifying effect for more frequent alcohol consumption among mothers. Meanwhile, in somewhat of a contrast to previous literature supporting the association between parental distress and increased risky and heavy drinking (Maloney et al., 2010), the present study suggests the interaction between distress and DTC motives lessens both frequency and quantity of alcohol consumption among mothers. Therefore, drinking motives are recommended as a useful mechanism for disentangling the differential relationships between women's multiple role strain, negative affect, and alcohol use, comparable to findings regarding mothers' multiple roles and alcohol consumption (Kuntsche et al., 2011; 2019).

By incorporating drinking motives as a moderator in this process, this study pinpoints avenues for future research to tease apart the antecedents and consequences of mothers' experience of parenting and negative affect (as each predictor relates to coping motives and alcohol use) in order to find alternative or more adaptive coping strategies. It is recommended that future studies aim to detect the onset, progression, and resolution of discrete problems within specific parenting experiences (e.g., discipline, child problem behavior) to evaluate how DTC motivation and other forms of avoidance coping are related to mother's negative affect, both directly and indirectly, and in regard to their alcohol use behavior.

This work also highlights the utility for interventions for alcohol misuse among SM dependents, who are at higher risk of alcohol misuse due to stressors of military family life demands (Chambers, 2013; Eaton et al., 2008; Faber, Willerton, Clymer, MacDermid, & Weiss, 2008; MacDermid Wadsworth, 2010). The multipath influence of drinking motives in the relationships between mothers' experience of parenting, negative affect, and alcohol use behaviors points to specific areas to target for current resources/programs such as increasing levels of family readiness, social connection, and reactivity to stress in the family during SM separations (Erbes et al., 2017) that may work to reduce risk of alcohol problems.

Moreover, considering the comprehensive nature of mothers' experience of parenting, this study has the potential to showcase the broad challenges mothers face that may point to specific parenting skills that could be enhanced in existing military parenting programs (DiNallo, J., Kuhl, M., Borden, L.M., & Perkins, D., 2016; Gewirtz,

DeGarmo, & Zamir, 2018) and parenting programs for mothers who incur similar contextual stressors (e.g., single mothers) in the general population. These findings may encourage military and other work/organizations to incorporate family supportive supervisor training (Hammer et al., 2021) for employers of women with children. Subsequently, this may be informative for important work-place policy issues (i.e., maternity leave, breast-feeding rooms, flexible work schedules) for women with dependent children (Rubery, Smith, & Fagan, 1997) to reduce stressors from competing employee role demands as this study forward the notion that mothers' DRS can be detrimental for women's health and well-being (Fokkema, 2002; Lahelma et al., 2002).

Limitations

Several limitations of the current study should be noted. Although a strength of the study is its focus on a military spouse population, this also necessarily limits the generalizability of the findings. However, to an extent, these results may reach mothers who face similar stressors (e.g., single mothers), whose spouses work in high-risk occupations (e.g., first responders), and who may be facing perceived stigma in meeting social and cultural expectations (i.e. superwoman syndrome, "do it all"). Our model is also limited in that it does not account for all drinking behavior. Cooper (1992, 1994) suggests individuals also drink to be sociable, to conform to perceived group norms, or to excuse desired but proscribed behavior. Despite the constrained nature of our model, results of this study strongly support the utility of understanding mother's alcohol use from an emotion management perspective (e.g., Dermody, et al., 2013; Veilleux, et al.,

2014) as results suggest differential alcohol use behavior related to different forms of negative affect.

Furthermore, drinking problems as a result of this stressor-negative affect influencing relationship may in turn exacerbate subsequent negative emotions (e.g., Folkman & Lazarus, 1984). Likewise, distressed, or lonely mothers may have higher DRS (e.g., Deater-Deckard et al., 2010). On this note, the present models could likely have been structured in the reverse direction such that mothers' negative affect is associated with higher DRS (e.g., Bridgett et al., 2011; Deater-Deckard, Sewell, Petrill, & Thompson, 2010), which may in turn relate to alcohol consumption. Alternatively, mothers who consume alcohol may be lonelier or more distressed and this in turn relates to higher DRS (e.g., Zebrak, & Green, 2016). Future research testing this model may benefit from using a diary method to establish more definitively a temporal sequence among the variables, which would allow us to model reciprocal and feedback relationships, and mitigate concerns about reliance on retrospective, self-report data. Taking this into account, appropriate caution should be exercised in drawing causal inferences from these data. Daily reporting or multimethod approach for data collection is recommended.

Therefore, with respect to the mediation models, longitudinal analyses across time points would be ideal to determine whether negative affect mediates the DRS-alcohol use relationship among mothers. Moreover, alcohol use is commonly attributed to socially and culturally acceptable normative practices, where weekends represent an interlude to the structured routine of the weekdays (Wood et al. 2007) are viewed as a period to

unwind, and exhibit considerably higher rates of alcohol consumption than weekdays (Ekholm, Strandberg-Larsen, & Grønæk 2011; Kuntsche and Cooper 2010; Studer et al. 2014). The parenting-affect-drinking relationship measured at day or week level may provide more precise culturally normative outcomes and could be why the relationships were not consistently found at each time point in this study.

Another limitation of note is the use of the self-reliance index (SRI) as time invariant since data was not collected for SRI at the follow-up time point. The baseline SRI was used in the follow-up experience of parenting latent variable. Therefore, our study is limited by not properly addressing the variability in this construct; however, it was assumed that difficulty in the same household duties did not vary over the 9-month time interval and there was stability in the factor structure for the latent variable at both time points. Nonetheless, future research should include SRI and other role duty strain at all time points to assess for variability in this construct over time and the nature by which these fluctuations impact the parenting-affect-drinking relationship.

Conclusion

Trends of increased alcohol use and alcohol-related problems among women coupled with the social and cultural stigmatization associated with their alcohol use renders mother's drinking behavior an issue of significance. Mothers have an increased likelihood of experiencing negative affect and greater exposure to and experience of stress, which represents a specific risk pathway for the onset and development of AUD in women. SM spouses represent a subgroup of mothers who are particularly vulnerable to increased risk of problematic drinking as they may be over-burdened by childrearing duties, managing the household alone, and likely doing this in a more chaotic home environment. To our knowledge, this is the first study to examine the contextual factors related to motherhood as a comprehensive construct of mother's antecedents of negative affect, and explore the relationship between parenting, negative affect, and alcohol use among SM spouses. For military spouses and mothers with similar life stressors, this study demonstrates how alcohol consumption is a strategy to cope with DRS and dependent on drinking to cope with related negative affect. This work supports summary findings that not all forms of negative affect similarly predict drinking behavior (Hussong, Hicks, Levy & Curran, 2007) and furthers this notion by considering how DTC motives influence effects of negative affective experiences on alcohol consumption (Arbeau et al., 2011; Grant, Stewart, & Mohr, 2009; Mohr et al., 2005; Park, Armeli, & Tennen, 2004).

Therefore, this thesis disentangles potential contributing factors of mothers' alcohol use behavior by highlighting the critical relationship that coping motives play in

terms of mothers' DRS, associated negative affect, and alcohol use. As this triad is known to have numerous deleterious effects, such as impaired or ineffective parenting, heightened parental/family stress, marital discord, and child health and adjustment problems (Berg-Nielsen, Vikan, & Dahl, 2002; Connell & Goodman, 2002; Osborne & Berger, 2009), the ripple effect of stressful situations may reinforce mothers' coping motives (Conger, 1956) and potentially perpetuate mothers' susceptibility to harmful drinking (Boden & Fergusson, 2011; Conner et al., 2009; Keough et al., 2015). Finally, the multipath influence of coping motives between mothers' DRS and alcohol use may inform parenting and alcohol interventions and support programs to target alternative coping strategies to increase levels of family readiness, social connection, and reactivity to stress in the family that may work to reduce risk of alcohol problems for military and comparable civilian families.

Tables

Table 1. Sample Characteristics of Service Member Spouses (Baseline and Follow-up)

Demographic / Category	Baseline (n=250)		Follow-up (n=198)	
	N	Percent	N	Percent
Race/Ethnicity				
American Indian or Alaska native	1	0.40%	2	1.00%
Asian	11	4.40%	10	5.10%
Pacific Islander or US territory	1	0.40%	1	0.50%
White	211	84.4%	167	85.2%
Latino or hispanic	17	6.80%	13	6.60%
Multiple Ethnicities	7	2.80%	5	2.60%
Employment				
Full-time	100	40.00%	79	31.60%
Part-Time	62	24.80%	58	23.20%
Student	12	4.80%	12	4.80%
Looking for work	9	3.60%	6	2.40%
Unemployed and not seeking work	59	23.60%	41	16.40%
Retired or other	15	6.00%	7	2.80%
Individual gross income before taxes				
Under \$25,000	131	52.40%	106	54.10%
\$25,000 - \$39,999	33	13.20%	31	15.80%
\$40,000 - \$49,999	25	10.00%	16	8.20%
\$50,000 - \$74,999	33	13.20%	33	16.80%
\$75,000 - \$84,999	7	2.80%	3	1.50%
\$85,000 - \$99,999	7	2.80%	3	1.50%
\$100,000 and higher	4	0.16%	4	2.00%
Education				
Less than high school	8	3.20%	4	2.00%
High school diploma/GED	24	9.60%	19	9.60%
Some college or technical school, no degree	69	27.60%	56	28.30%
Completed college or technical school	116	46.40%	87	43.90%
Graduate study in progress or completed	33	13.20%	32	16.20%
Relationship Length				
Less than a year	1	0.40%	0	0.00%
1-9 years	81	32.80%	62	31.80%
10-19 years	122	49%	92	47.18%
20 or more years	43	18.20%	41	21.03%
Marital Status (Married)				
Married	236	94.40%	190	96%
Cohabiting but not married	10	4.00%	5	2.50%
Number of Children				
1	54	21.60%	38	19.39%
2	103	41.20%	85	43.37%
3	57	22.80%	49	25.00%
4	21	8.40%	12	6.12%
5 or more	14	6.00%	11	5.61%
Child with disability	26	10.40%	21	10.70%

Note: Average age, M=37.27, SD=7.57, Mode =36 (baseline) and M=37.84, SD=7.65, Mode =35 (follow-up). Average Relationship Length, M=13.24, SD=7.65, Mode=10, (baseline) and M=13.89, SD=7.69, Mode=6 (follow-up). Individual income represents before taxes.

Table 2. Distributional diagnostics and summary statistics (Baseline and Follow-up)

Variables	M	SD	Median	Range	IQR	Skew	Skew SE	Kurtosis	Kurtosis SE
BL CHAOS	10.09	3.57	9.00	[5, 21]	[7, 13]	-.46	.18	-.53	.36
9M CHAOS	11.08	4.02	10.00	[5,24]	[8,14]	.48	.18	-.39	.35
BL Loneliness	4.72	1.70	4.50	[2,9]	[3,6]	.67	.16	-.37	.31
9M Loneliness	4.68	1.76	4.00	[3,9]	[3,6]	.86	.17	-.12	.35
BL Self Reliance	8.69	5.60	10.00	[2,27]	[2,12]	.39	.16	-.35	.32
BL Distress	10.44	4.11	9.00	[6,28]	[7,12.5]	1.23	.16	.16	.32
9M Distress	10.27	4.37	9.00	[3,30]	[7,13]	1.36	.17	2.26	.35
BL Parenting	4.18	1.73	3.00	[2,12]	[3,6]	1.40	.17	1.63	.33
9M Parenting	4.23	1.62	3.00	[2,9]	[3,6]	.93	.18	-.31	.36
BL DTC	3.83	1.79	3.00	[2,15]	[3,4]	2.97	.16	10.55	.32
9M DTC	3.90	1.94	3.00	[2,15]	[3,4]	3.32	.18	13.28	.35
BL FRQ	1.42	1.07	1.00	[0,4]	[1,2]	.48	.16	-.47	.318
9M FRQ	1.40	1.11	1.00	[0,4]	[1,2]	.55	.17	-.41	.35
BL QTY	.87	.53	1.00	[0,5]	[1,1]	.57	.16	5.10	.32
9M QTY	.84	.51	1.00	[0,5]	[1,1]	-.25	.17	.36	.35
BL HFRQ	.20	.48	.00	[0,4]	[0,0]	2.91	.16	10.54	.32
9M HFRQ	.22	.52	.00	[0,4]	[0,0]	2.50	.17	6.57	.35

Note: Baseline sample = BL; follow-up sample = 9M; Drinking to cope = DTC. Frequency= FRQ; Hazardous alcohol use frequency=HFRQ; Alcohol use quantity=QTY. Alcohol frequency responses: 0=never, 1=monthly or less, 2=2 to 4 times a month, 3=2 to 3 times a week, and 4=4 or more times a week; alcohol quantity responses: 0=never, 1=1 or 2, 2=3 or 4, 3=5 or 6, 4=7 to 9, and 5=10 or more; hazardous drinking frequency responses: 0=never, 1=less than monthly, 2=monthly, 3=weekly, 4=daily or almost daily.

Table 3. Direct Effects: Domestic Role Strain, Loneliness and Alcohol Use (BL)

Outcome / Predictor	β	SE	p-value	β^*	p*-value
<i>Loneliness</i>					
Domestic Role Strain	.851	.175	.000	.634	.000
Number of children	-.159	.063	.011	-.146	.008
Individual Income	.118	.060	.050	.136	.047
<i>Alcohol Frequency</i>					
Domestic Role Strain	-.112	.158	.480	-.104	.479
Loneliness	.014	.108	.899	.017	.899
Number of children	-.122	.056	.030	-.140	.031
Individual Income	.104	.048	.030	.150	.031
<i>Alcohol Quantity</i>					
Domestic Role Strain	-.043	.080	.591	-.081	.595
Loneliness	.005	.054	.927	.012	.926
Number of children	-.047	.030	.116	-.109	.127
Individual Income	-.012	.021	.575	-.034	.569
<i>Hazardous Alcohol Frequency</i>					
Domestic Role Strain	-.005	.077	.948	-.010	.948
Loneliness	-.010	.053	.853	-.027	.854
Number of children	-.016	.022	.469	-.040	.476
Individual Income	.001	.024	.972	.003	.972

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized.

Table 4. Indirect effects: Domestic Role Strain, Loneliness, and Alcohol Use (BL)

Mediator / Outcome	β	SE	p-value	β^*	95%CI*
<i>Loneliness</i>					
Alcohol Frequency	.012	.092	.899	.011	[-.158, .179]
Alcohol Quantity	.004	.046	.927	.008	[-.161, .176]
Alcohol Hazardous Frequency	-.008	.045	.853	-.017	[-.200, .166]

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized; 95% Confidence Interval=95%CI.

Table 5. DTC Moderation: DRS and Alcohol FRQ mediated by loneliness (BL)

Outcome by Predictor	β	S.E.	P-Value
Loneliness			
Domestic Role Strain	.830	.180	.000
Drink to Cope	.117	.286	.682
DRS X DTC	.169	.110	.125
Number of children	-.137	.062	.027
Individual income	.128	.060	.034
Alcohol Frequency			
Loneliness	-.022	.107	.839
Loneliness X DTC	-.066	.271	.808
Domestic Role Strain	-.146	.173	.400
Drink to Cope	.666	.156	.000
DRS X DTC	-.123	.484	.799
Number of children	-.081	.055	.146
Individual income	.105	.046	.023

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope; X= interaction. β = loading estimate; Standard error=SE. Bold indicates significance (<.05)

Table 6. DTC Moderation: DRS and Alcohol QTY mediated by loneliness (BL)

Outcome by Predictor	β	S.E.	P-Value
Loneliness			
Domestic Role Strain	.853	.230	.000
Drink to Cope	.263	.132	.045
DRS X DTC	.048	.063	.452
Number of children	-.136	.062	.028
Individual income	.131	.058	.024
Alcohol Quantity			
Loneliness	.009	.072	.906
Loneliness X DTC	-.237	.098	.015
Domestic Role Strain	-.128	.144	.264
Drink to Cope	.281	.082	.001
DRS X DTC	.441	.140	.002
Number of children	-.032	.031	.295
Individual income	-.006	.020	.762

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05)

Table 7. Direct Effects: Domestic Role Strain, Distress and Alcohol Use (BL)

Outcome / Predictor	β	SE	p-value	β^*	p*-value
<i>Distress</i>					
Domestic Role Strain	.367	.061	.000	.601	.000
Number of children	-.039	.032	.220	-.077	.227
Individual Income	.012	.028	.661	.031	.662
<i>Alcohol Frequency</i>					
Domestic Role Strain	.068	.130	.602	.063	.602
Distress	-.441	.154	.004	-.251	.007
Number of children	-.143	.053	.007	-.162	.007
Individual Income	.111	.043	.010	.162	.010
<i>Alcohol Quantity</i>					
Domestic Role Strain	-.026	.066	.689	-.050	.690
Distress	-.004	.139	.979	-.004	.979
Number of children	-.049	.029	.096	-.112	.110
Individual Income	-.011	.020	.587	-.031	.582
<i>Hazardous Alcohol Frequency</i>					
Domestic Role Strain	-.001	.051	.992	-.001	.992
Distress	-.033	.068	.628	-.041	.637
Number of children	-.016	.022	.486	-.039	.492
Individual Income	.000	.023	.994	.001	.994

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized.

Table 8. Indirect effects: Domestic Role Strain, Distress and Alcohol Use (BL)

Mediator / Outcome	β	SE	p-value	β^*	95%CI*
<i>Distress</i>					
Alcohol Frequency	-.162	.067	.015	-.151	[-.272, -.029]
Alcohol Quantity	-.001	.051	.979	-.002	[-.090, .185]
Alcohol Hazardous Frequency	-.012	.025	.626	-.025	[-.127, .077]

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized; 95% Confidence Interval=95%CI.

Table 9. DTC Moderation: DRS and Alcohol FRQ, mediated by distress (Baseline)

Outcome by Predictor	β	S.E.	P-Value
Distress			
Domestic Role Strain	.380	.078	.000
Drink to Cope	.184	.093	.049
DRS X DTC	.125	.109	.249
Number of children	-.024	.029	.398
Individual income	.011	.023	.651
Alcohol Frequency			
Distress	-.714	.228	.002
Distress X DTC	-.420	.297	.156
Domestic Role Strain	.118	.158	.452
Drink to Cope	.853	.203	.000
DRS X DTC	.203	.332	.541
Number of children	-.108	.049	.028
Individual income	.113	.040	.005

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05)

Table 10. DTC Moderation: DRS and Alcohol QTY by Distress (Baseline)

Outcome by Predictor	β	S.E.	P-Value
Distress			
Domestic Role Strain	.364	.059	.000
Drink to Cope	.218	.081	.007
DRS X DTC	.062	.030	.040
Number of children	-.025	.030	.397
Individual income	.018	.025	.475
Alcohol Quantity			
Distress	-.107	.138	.439
Distress X DTC	-.243	.231	.292
Domestic Role Strain	-.056	.097	.560
Drink to Cope	.258	.102	.011
DRS X DTC	.376	.142	.008
Number of children	-.042	.028	.130
Individual income	-.003	.018	.877

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05)

Table 11. Direct Effects: Domestic Role Strain, Loneliness and Alcohol Use (9M)

Outcome / Predictor	β	SE	p-value	β^*	p*-value
<i>Loneliness</i>					
Domestic Role Strain	.515	.130	.000	.450	.000
Condition Control	-.394	.169	.020	-.172	.017
Number of children	-.077	.062	.215	-.081	.213
Individual Income	.013	.061	.835	.017	.835
<i>Alcohol Frequency</i>					
Domestic Role Strain	-.107	.133	.422	-.097	.420
Loneliness	.097	.096	.309	.101	.304
Condition Control	.004	.154	.978	.002	.978
Number of children	-.087	.057	.130	-.096	.135
Individual Income	.146	.056	.009	.198	.008
<i>Alcohol Quantity</i>					
Domestic Role Strain	.009	.068	.900	.017	.900
Loneliness	.025	.046	.589	.057	.589
Condition Control	.013	.072	.861	.012	.861
Number of children	-.041	.029	.151	-.099	.148
Individual Income	.049	.024	.039	.145	.037
<i>Hazardous Alcohol Frequency</i>					
Domestic Role Strain	.011	.067	.868	.021	.868
Loneliness	.065	.056	.244	.143	.241
Condition Control	.112	.075	.135	.108	.129
Number of children	-.019	.023	.401	-.045	.402
Individual Income	.032	.030	.280	.093	.259

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized.

Table 12. Indirect effects: Domestic Role Strain, Loneliness and Alcohol Use (9M)

Mediator / Outcome	β	SE	p-value	β^*	95%CI*
<i>Loneliness</i>					
Alcohol Frequency	-.103	.096	.284	-.094	[-.267, .079]
Alcohol Quantity	-.057	.055	.294	-.113	[-.323, .097]
Alcohol Hazardous Frequency	.021	.052	.688	.040	[-.154, .235]

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized; 95% Confidence Interval=95%CI.

Table 13. DTC Moderation: DRS and Alcohol FRQ mediated by loneliness (9M)

Outcome by Predictor	β	S.E.	<i>p</i> -Value
Loneliness			
Domestic Role Strain	.630	.234	.007
Drink to Cope	-.192	.150	.324
DRS X DTC	.110	.175	.530
Condition Control	-.357	.175	.041
Number of children	-.080	.065	.221
Individual income	.022	.065	.730
Alcohol Frequency			
Loneliness	.182	.101	.073
Loneliness X DTC	.381	.173	.028
Domestic Role Strain	-.320	.167	.055
Drink to Cope	1.040	.484	.031
DRS X DTC	-.606	.317	.055
Condition	-.063	.144	.661
Number of children	.360	.052	.487
Individual income	.158	.054	.003

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. Condition= intervention control variable. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05)

Table 14. DTC Moderation: DRS and Alcohol QTY by loneliness (9M)

Outcome by Predictor	β	S.E.	P-Value
Loneliness			
Domestic Role Strain	.553	.168	.001
Drink to Cope	.274	.157	.080
DRS X DTC	.136	.079	.087
Condition Control	-.412	.175	.018
Number of children	-.071	.064	.266
Individual income	.022	.064	.730
Alcohol Quantity			
Loneliness	-.001	.048	.979
Loneliness X DTC	-.253	.102	.013
Domestic Role Strain	.005	.070	.944
Drink to Cope	.268	.124	.030
DRS X DTC	.332	.122	.007
Condition	-.033	.068	.624
Number of children	-.030	.027	.276
Individual income	.038	.024	.104

Note: Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. Condition= intervention control variable. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05)

Table 15. Direct Effects: Domestic Role Strain, Distress and Alcohol Use (9M)

Outcome / Predictor	β	SE	p-value	β^*	p*-value
<i>Distress</i>					
Domestic Role Strain	.407	.064	.000	.669	.000
Condition Control	-.192	.083	.021	-.158	.009
Number of children	-.059	.031	.060	-.118	.045
Individual Income	-.027	.021	.204	-.066	.185
<i>Alcohol Frequency</i>					
Domestic Role Strain	.050	.170	.770	.045	.771
Distress	-.254	.226	.261	-.140	.279
Condition Control	-.083	.159	.604	-.037	.604
Number of children	-.109	.058	.060	-.121	.064
Individual Income	.140	.054	.010	.190	.009
<i>Alcohol Quantity</i>					
Domestic Role Strain	.078	.090	.385	.155	.382
Distress	-.141	.126	.264	-.169	.271
Condition Control	-.024	.074	.742	-.024	.741
Number of children	-.051	.030	.088	-.124	.086
Individual Income	.046	.024	.060	.135	.057
<i>Hazardous Alcohol Frequency</i>					
Domestic Role Strain	.023	.088	.794	.044	.795
Distress	.051	.128	.688	.060	.685
Condition Control	.096	.082	.242	.093	.232
Number of children	-.021	.024	.390	-.049	.393
Individual Income	.035	.030	.249	.100	.226

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized.

Table 16. Indirect effects: Domestic Role Strain, Distress and Alcohol Use (9M)

Mediator / Outcome	β	SE	p-value	β^*	95%CI*
<i>Distress</i>					
Alcohol Frequency	.050	.049	.309	.045	[-.042, .133]
Alcohol Quantity	.013	.024	.586	.026	[-.067, .118]
Alcohol Hazardous Frequency	.033	.028	.236	.064	[-.043, .171]

Note: Bold= significant $p < .05$. β = loading estimate; Standard error=SE; (*)=Standardized; 95% Confidence Interval=95%CI.

Table 17. DTC Moderation: DRS predicting Alcohol FRQ mediated by distress (9M)

Outcome by predictor	β	S.E.	P-Value
Distress			
Domestic Role Strain	.450	.086	.000
Drink to Cope	.341	.156	.029
DRS X DTC	.125	.098	.201
Condition	-.215	.079	.007
Number of children	-.038	.029	.184
Individual income	-.018	.019	.338
Alcohol Frequency			
Distress	-.990	.609	.104
Distress X DTC	-.988	.364	.007
Domestic Role Strain	.335	.350	.339
Drink to Cope	1.214	.459	.008
DRS X DTC	.896	.279	.001
Condition	-.333	.188	.076
Number of children	-.087	.056	.125
Individual income	0.129	0.051	.011

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05)

Table 18. DTC Moderation: DRS predicting Alcohol QTY mediated by distress (9M)

Outcome by predictor	β	S.E.	P-Value
Distress			
Domestic Role Strain	.479	.148	.001
Drink to Cope	.425	.344	.216
DRS X DTC	0.197	.229	.390
Condition	-.184	.082	.024
Number of children	-.035	.030	.239
Individual income	-.018	.019	.348
Al. Quantity			
Distress	-.411	.638	.519
Distress X DTC	-.573	.201	.004
Domestic Role Strain	.163	.328	.620
Drink to Cope	.577	.582	.322
DRS X DTC	.555	.382	.146
Condition	-.116	.129	.368
Number of children	-.039	.031	.202
Individual income	0.036	0.026	.167

Note: DRS= Domestic Role Strain; DTC= Drinking to Cope. X= interaction. β = loading estimate; Standard error=SE; Bold indicates significance (<.05).

Table 19. Mediation Model Hypotheses

Hypothesis	<u>Loneliness (H2)</u>		<u>Distress (H3)</u>	
	BL	9M	BL	9M
a. DRS predicts negative affect	X	X	X	X
b. DRS predicts alcohol FRQ	-	-	-	-
c. DRS predicts alcohol QTY	-	-	-	-
d. Exp predicts alcohol HFRQ	-	-	-	-
e. Negative affect predicts alcohol FRQ	-	-	X	-
f. Negative affect predicts alcohol QTY	-	-	-	-
g. Negative affect predicts alcohol HFRQ	-	-	-	-
h. DRS predicts FRQ via negative affect	-	-	X	-
i. DRS predicts QTY via negative affect	-	-	-	-
j. DRS predicts HFRQ via negative affect	-	-	-	-

Note: 'X' indicates affirmation of hypothesis by data. Refer to column specified negative affect. DRS= Domestic Role Strain; FRQ= frequency; QTY= quantity; HFRQ= hazardous frequency; DTC= Drinking to Cope; 9M= nine months.

Table 20. Moderated Mediation Model Hypotheses

Hypothesis	<u>Loneliness (H4)</u>				<u>Distress (H5)</u>			
	<u>FRQ^a</u>		<u>QTY^b</u>		<u>FRQ^a</u>		<u>QTY^b</u>	
	B	9M	B	9M	B	9M	B	9M
1. DTC predicts negative affect	-	-	X	-	X	X	X	-
2. DTC predicts alcohol use	X	X	X	X	X	X	X	-
3. DRS x DTC predicts negative affect	-	-	-	-	-	-	X	-
4. DRS x DTC predicts alcohol use	-	-	X	X	-	X	X	-
5. DTC x NA predicts alcohol use	-	X	X	X	-	X	-	X
6. DTC moderates direct pathway	-	X	X	X	-	X	X	-
7. DTC moderates mediated pathway	-	-	X	-	-	X	-	-
8. DTC moderates indirect pathway	-	X	X	X	-	X	X	X

Note: a superscript annotates hypothesis H4a 'X' indicates affirmation of hypothesis by data. Refer to column specified for negative affect. Refer to column specified for type of alcohol use behavior.

NA=negative affect; DRS= Domestic Role Strain; FRQ= frequency; QTY= quantity; HFRQ= hazardous frequency; DTC= Drinking to Cope; 9M= nine months. Direct pathway indicates relationship between mothers' experience of parenting predicting alcohol use. Mediated pathway indicates relationship between mothers' negative affect predicting alcohol use. Indirect pathway indicates relationship between mothers' experience of parenting predicting alcohol use when mediated by negative affect.

Figures

Figure 1. Second Order Latent Variable Confirmatory Factor Analysis (CFA) of Mothers' Domestic Role Strain (DRS). SRI= self-reliance index. Parenting= negative parenting behavior

Figure 2. Simple Slopes: DTC Moderated DRS and Alcohol QTY by Loneliness (BL). Mean DTC=3.83, SD= 1.79. DTC= Drinking to Cope; QTY= Quantity. (#)=slope estimate.

Figure 3. Simple Slopes: DTC Moderated DRS and Alcohol QTY by Distress (BL).
Mean DTC= 3.83, SD=1.74. DTC= Drinking to Cope; QTY= Quantity. (#) =slope estimate.

Figure 4. Simple Slopes: DTC Moderates DRS and Alcohol FRQ by Loneliness (9M). (#)=slope estimate. Mean DTC=3.90, SD= 1.94. DTC= Drinking to Cope; FRQ= Frequency; (#)=slope estimate.

Figure 5. Simple Slopes: DTC Moderated DRS and Alcohol QTY by Loneliness (9M). Mean DTC=3.90, SD= 1.94. DTC= Drinking to Cope; QTY= Quantity. (#) =slope estimate.

Figure 6. Simple Slopes: DTC Moderates DRS and Alcohol FRQ by Distress (9M).
Mean DTC= 3.90, SD=1.94. DTC= Drinking to Cope; FRQ= Frequency; (#) =slope estimate.

Figure 7. Simple Slopes: DTC Moderated DRS and Alcohol QTY mediated by Distress (9M). Mean DTC= 3.90, SD=1.94. DTC= Drinking to Cope; QTY= Quantity. (#) =slope estimate.

References

- Ahmadi, H., & Green, S. L. (2011). Screening, brief intervention, and referral to treatment for military spouses experiencing alcohol and substance use disorders: A literature review. *Journal of Clinical Psychology in Medical Settings*, 18(2), 129–136. <https://doi.org/10.1007/s10880-011-9234-7>
- Akaike, H. (1974). A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, 19, 716-723.
- Åkerlind, I., & Hörnquist, J. O. (1992). Loneliness and alcohol abuse: A review of evidences of an interplay. *Social Science and Medicine* 34(4), 405-414. [https://doi.org/10.1016/0277-9536\(92\)90300-F](https://doi.org/10.1016/0277-9536(92)90300-F)
- Allison, P. D. (2001). Missing data. *Sage University Papers Series on Quantitative Applications in the Social Sciences*, 07-136. Retrieved from <https://www.bmj.com/lookup/doi/10.1136/bmj.38977.682025.2C>
- American Psychiatric Association. (2013). Anxiety disorders. In *Diagnostic and statistical manual of mental disorders (5th ed.)*. <https://doi.org/10.1176/appi.books.9780890425596.dsm05>
- Ames, G. M., & Cunradi, C. (2004). Alcohol use and preventing alcohol-related problems among young adults in the military. *Alcohol Research and Health*, 28(4), 252–257. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6601669/>
- Ames, G. M., Duke, M. R., Moore, R. S., & Cunradi, C. B. (2009). The impact of occupational culture on drinking behavior of young adults in the U.S. Navy. *Journal of Mixed Methods Research*, 3(2), 129–150. <https://doi.org/10.15288/jsad.2013.74.195>
- Anderson, M.L. (2010). *Thinking About Women: Sociological Perspectives on Sex and Gender*. 9th. Upper Saddle River, NJ: Prentice Hall.

- Anestis, M. D., Lavender, J. M., Marshall-Berenz, E. C., Gratz, K. L., Tull, M. T., & Joiner, T. E. (2012). Evaluating distress tolerance measures: Interrelations and associations with impulsive behaviors. *Cognitive Therapy and Research*, 36(6), 593-602. <https://doi.org/10.1007/s10608-011-9377-8>
- Arbeau, K. J., Kuiken, D., & Wild, T. C. (2011). Drinking to enhance and to cope: A daily process study of motive specificity. *Addictive Behaviors*, 36(12), 1174–1183. <https://doi.org/10.1016/j.addbeh.2011.07.020>
- Armeli, S., Sullivan, T. P., & Tennen, H. (2015). Drinking to cope motivation as a prospective predictor of negative affect. *Journal of Studies on Alcohol and Drugs*, 76(4), 578–584. <https://doi.org/10.15288/jsad.2015.76.578>
- Arpin, S. N., Mohr, C. D., & Brannan, D. (2015). Having friends and feeling lonely: A daily process examination of transient loneliness, socialization, and drinking behavior. *Personality and Social Psychology Bulletin*, 41(5), 615–628. <https://doi.org/10.1177/0146167215569722>
- Azeez, A., Faizal, A., Ranjan, A., R., A., C., A. K., S., A., ... Raj, H. (2014). Quantity and Prevalence with Gender Comparison for Alcohol Consumption Among College Students. *Journal of Health and Allied Sciences NU*, 4(02), 105–107. <https://doi.org/10.1055/s-0040-1703774>
- Bachman, J.G., O'Malley, P.M., Schulenberg, J.E., Johnston, L.D., Bryant, A.L., & Merline, A.C. (2002) *The Decline of Substance Use in Young Adulthood: Changes in Social Activities, Roles, and Beliefs*. Mahwah, Nj: Lawrence Erlbaum,
- Barcikowski, R. S. (1981). Statistical Power with Group Mean as the Unit of Analysis. *Journal of Educational Statistics*, 6(3), 267–285. <https://doi.org/10.3102/10769986006003267>
- Bartel, S. J., Sherry, S. B., Molnar, D. S., Mushquash, A. R., Leonard, K. E., Flett, G. L., & Stewart, S. H. (2017). Do romantic partners influence each other's heavy episodic drinking? Support for the partner influence hypothesis in a three-year

longitudinal study. *Addictive Behaviors*, 69, 55–58.

<https://doi.org/10.1016/j.addbeh.2017.01.020>

Baruch, G. K., & Barnett, R. C. (1986). Role quality, multiple role involvement, and psychological well-being in midlife women. *Journal of Personality and Social Psychology*, 51(3), 578–585. <https://doi.org/10.1037//0022-3514.51.3.578>

Bentler, P. M., & Chou, C.-P. (1987). Practical issues in structural equation modeling. *Sociological Methods and Research*, 16, 78–117.

Bergman H, Kallmen H (2002) Alcohol use among Swedes and a psychometric evaluation of the Alcohol Use Disorders Identification Test. *Alcohol*, 37, 245–251. <https://academic.oup.com/alcalc/article-lookup/doi/10.1093/alcalc/37.3.245>

Berg-Nielsen, T. S., Vikan, A., & Dahl, A. A. (2002). Parenting Related to Child and Parental Psychopathology: A Descriptive Review of the Literature. *Clinical Child Psychology and Psychiatry*, 7(4), 529–552. <https://doi.org/10.1177/1359104502007004006>

Berscheid, E., & Reis, H. T. (1998). Attraction and close relationships. In D. T. Gilbert & S. T. Fiske (Eds.), *The Handbook of Social Psychology* (Vol. 2, 4th ed., pp. 193–281). New York, NY, US: McGraw-Hill.

Bianchi, S. M. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography*, 37, 401–414. <https://doi.org/10.1353/dem.2000.0001>

Bianchi, S. M. (2011). Family change and time allocation in American families. *ANNALS of the American Academy of Political and Social Science*, 638, 21–44. <https://doi.org/10.1177/0002716211413731>

Blevins, C. E, Abrantes, A. M, & Stephens, R. S. (2016). Motivational pathways from antecedents of alcohol use to consequences: A structural model of using alcohol

- to cope with negative affect. *The American Journal of Drug and Alcohol Abuse*, 42(4), 395–403. <https://doi.org/10.3109/00952990.2016.1141915>
- Bliese, P. D. (1998). Group size, ICC values, and group-level correlations: A simulation. *Organizational Research Methods*, 1(4), 355–373. <https://doi.org/10.1177/109442819814001>
- Blow, A. J., Gorman, L., Ganoczy, D., Kees, M., Kashy, D. A., Valenstein, M., Chermack, S. (2013). Hazardous drinking and family functioning in National Guard veterans and spouses post deployment. *Journal of Family Psychology*, 27(2), 303–313. <https://doi.org/10.1037/a0031881>
- Boden, J. M., & Fergusson, D. M. (2011). Alcohol and depression. *Addiction*, 106(5), 906–914. <http://dx.doi.org/10.1111/j.1360-0443.2010.03351.x>.
- Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York: John Wiley.
- Bollen, K. A. (1987). Total, Direct, and Indirect Effects in Structural Equation Models. *Sociological Methodology*, 17, 37–69. <https://doi.org/10.2307/271028>
- Bonin, M. F., McCreary, D. R., & Sadava, S. W. (2000). Problem drinking behavior in two community-based samples of adults: Influence of gender, coping, loneliness, and depression. *Journal of Addictive Behaviors*, 14, 151–161. <https://doi.org/10.1037/0893-164X.14.2.151>
- Boyd, S.C. (2004). *From Witches to Crack Whores: Women, Drug Law, and Policy*. Durham, NC: Carolina Academic Press.
- Bradbard, D.A., Maury, R., Armstrong, N.A. (2016). The force behind the force: A business case for leveraging Military Spouse Talent (Employing Military Spouses, Paper No. 1). Syracuse, NY: Institute for Veterans and Military Families, Syracuse University. <https://ivmf.syracuse.edu/wp-content/uploads/2016/07/The-Force-Behind-the-Force-Infographic.pdf>

- Bradley, K. A., Bush, K. R., Epler, A. J., Dobie, D. J., Davis, T. M., Sporleder, J. L., ... Kivlahan, D. R. (2003). Two Brief Alcohol-Screening Tests From the Alcohol Use Disorders Identification Test (AUDIT). *Archives of Internal Medicine*, 163(7), 821. <https://doi.org/10.1001/archinte.163.7.821>
- Bradley, K. A., Bush, K. R., McDonell, M. B., Malone, T., & Fihn, S. D. (1998). Screening for problem drinking. *Journal of General Internal Medicine*, 13(6), 379–388. <https://doi.org/10.1046/j.1525-1497.1998.00118.x>
- Brady, K.T., Sinha, R. (2005). Co-occurring mental and substance use disorders: The neurobiological effects of chronic stress. *American Journal of Psychiatry*, 162(8), 1483-1493. <https://doi.org/10.1176/appi.ajp.162.8.1483>.
- Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R., Torre, L., Jemal, A. (2018) Global cancer statistics 2018: GLO- BOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 68(6), 394–424. <http://doi.wiley.com/10.3322/caac.21492>
- Bray, R. M., Brown, J. M., & Williams, J. (2013). Trends in binge and heavy drinking, alcohol-related problems, and combat exposure in the U.S. military. *Substance Use & Misuse*, 48(10), 799–810. <https://doi.org/10.3109/10826084.2013.796990>
- Brazelton, T. B. (2013). *Toddlers and Parents: A Declaration of Independence* (Rev. ed.). New York, NY: Dell.
- Bridgett, D. J., Gartstein, M. A., Putnam, S. P., Lance, K. O., Iddins, E., Waits, R., et al. (2011). Emerging effortful control in toddlerhood: The role of infant orienting/regulation, maternal effortful control, and maternal time spent in caregiving activities. *Infant Behavior and Development*, 34, 189–199. <http://dx.doi.org/10.1016/j.infbeh.2010.12.008>
- Bronfenbrenner, U. (1994). Ecological models of human development. *The International Encyclopedia of Education*, 3(2), 1643-1647.

<https://www.stolaf.edu/people/huff/classes/Psych130F2010/Readings/Bronfenbrenner1994.pdf>

- Brooks, P. J., & Zakhari, S. (2013). Moderate alcohol consumption and breast cancer in women: from epidemiology to mechanisms and interventions. *Alcoholism, clinical and experimental research*, 37(1), 23–30. <https://doi.org/10.1111/j.1530-0277.2012.01888.x>
- Brown, R., & Gregg, M. (2012). The pedagogy of regret: Facebook, binge drinking and young women. *Continuum. Journal of Media & Cultural Studies*, 26(3), 357–269. <https://doi.org/10.1080/10304312.2012.665834>
- Brown, R. L., & Richman, J. A. (2012). Sex differences in mediating and moderating processes linking economic stressors, psychological distress, and drinking. *Journal of Studies on Alcohol and Drugs*, 73(5), 811–819. <https://doi.org/10.15288/jsad.2012.73.811>
- Buckner, J. D., Keough, M. E., & Schmidt, N. B. (2007). Problematic alcohol and cannabis use among young adults: The roles of depression and discomfort and distress tolerance. *Addictive Behaviors*, 32(9), 1957–1963. <https://doi.org/10.1016/j.addbeh.2006.12.019>
- Burden, D. (1986). Single Parents and the Work Setting: The Impact of Multiple Job and Homelife Responsibilities. *Family Relations*, 35(1), 37-43. <https://doi.org/10.2307/584280>
- Bureau of Labor Statistics. (2021). *Bureau of Labor Statistics Employment Characteristics of Families 2020*. <https://www.bls.gov/cps>
- Bush, K., Kivlahan, D. R., McDonell, M. B., Fihn, S.D., & Bradley, K. A. (1998). The AUDIT alcohol consumption questions (AUDIT-C): An effective brief screening test for problem drinking. Ambulatory Care Quality Improvement Project (ACQUIP). Alcohol Use Disorders Identification Test. *Archives of Internal Medicine*, 158(16):1789–1795. <https://doi.org/10.1001/archinte.158.16.1789>

- Byvelds, C., & Jackson, Heather. (2019). *Motherhood and Social Exclusion*. Bradford, Ontario: Demeter Press.
- Campbell, L. (2019) How “Mommy Juice” Culture Is Normalizing Alcohol Addiction. San Francisco, CA: Health- Line. <https://www.healthline.com/health-news/the-rise-of-mommy-juice- culture-and-its-impact-on-kids>
- Clever, M., & Segal, D. R. (2013). The demographics of military children and families. *The Future of Children*, 23(2), 13–39. <https://doi.org/10.1353/foc.2013.0018>
- Cacioppo, J. T., Hawkley, L. C., Crawford, L. E., Ernst, J. M., Burleson, M. H., Kowalewski, R. B., ... Berntson, G. G. (2002). Loneliness and health: Potential mechanisms. *Psychosomatic Medicine*, 64, 204–417. <https://doi.org/10.1097/00006842-200205000-00005>
- Cacioppo, J. T., Hawkley, L. C., Ernst, J. M., Burleson, M., Berntson, G. G., Nouriani, B., & Spiegel, D. (2006). Loneliness within a nomological net: An evolutionary perspective. *Journal of Research in Personality*, 40(6), 1054–1085. <https://doi.org/10.1016/j.jrp.2005.11.007>
- Centers for Disease Control and Prevention (CDC). (2012). Alcohol use and binge drinking among women of childbearing age--United States, 2006-2010. *MMWR. Morbidity and Mortality Weekly Report*, 61(28), 534–538. <http://www.ncbi.nlm.nih.gov/pubmed/22810267>
- Centers for Disease Control and Prevention (CDC). (2013). Vital signs: binge drinking among women and high school girls--United States, 2011. *MMWR. Morbidity and Mortality Weekly Report*, 62(1), 9–13. <http://www.ncbi.nlm.nih.gov/pubmed/23302817>
- Center for Substance Abuse Treatment. (2009). Substance abuse treatment: Addressing the specific needs of women. (Treatment Improvement Protocol (TIP) Series, No. 51.), *Chapter 3: Physiological Effects of Alcohol, Drugs, and Tobacco on Women*. Rockville (MD). <https://doi.org/pubmed.ncbi.nlm.nih.gov/22514859/>

- Chassin, L., Curran, P. J., Hussong, A. M., & Colder, C. R. (1997). The relation of parent alcoholism to adolescent substance use: A longitudinal follow-up study. In G. A. Marlatt, & G. R. VandenBos (Eds.), *Addictive behaviors: Readings on etiology, prevention, and treatment* (pp. 509–533). Washington, DC: American Psychological Association.
- Colder, C. R., & Chassin, L. (1993). The stress and negative affect model of adolescent alcohol use and the moderating effects of behavioral under control. *Journal of Studies on Alcohol*, 54, 326–333. <https://doi.org/10.15288/jsa.1993.54.326>
- Coldwell, J., Pike, A., & Dunn, J. (2006). Household chaos – Links with parenting and child behavior. *Journal of Child Psychology and Psychiatry*, 47(11), 1116–1122. <http://dx.doi.org/10.1111/j.1469-7610.2006.01655.x>
- Conger, J. J. (1956). Alcoholism: Theory, problem, and challenge: II. Reinforcement theory and the dynamics of alcoholism. *Quarterly Journal of Studies on Alcohol*, 17(2), 296-305. https://doi.org/10.1300/J082v07n04_03.
- Connell, A. M., & Goodman, S. H. (2002). The association between psychopathology in father versus mothers and children's internalizing and externalizing behavior problems: A meta-analysis. *Psychological Bulletin*, 128, 746-773. <https://doi.org/10.1037/0033-2909.128.5.746>.
- Connelly, R., & Kimmel, J. (2015). If you're happy and you know it: How do mothers and fathers in the US really feel about caring for their children? *Feminist Economics*, 21(1), 1–34. <https://doi.org/10.1080/13545701.2014.970210>
- Conner, K. R., Pinquart, M., & Gamble, S. A. (2009). Meta-analysis of depression and substance use among individuals with alcohol use disorders. *Journal of Substance Abuse Treatment*, 37(2), 127–137. <https://doi.org/10.1016/j.jsat.2008.11.007>
- Cooper, M. L. (1992). Alcohol and increased behavioral risk for AIDS. *Alcohol, Health, and Research World*, 16, 64-72. <https://psycnet.apa.org/record/1994-37222-001>

- Cooper, M. L. (1994). Motivations for alcohol use among adolescents: Development and validation of a four-factor model. *Psychological Assessment*, 6(2), 117-128.
<https://doi.org/10.1037/1040-3590.6.2.117>
- Cooper, L.M., Frone, M.R., Russell, M., Mudar, P. (1995). Drinking to regulate positive and negative emotions: A motivational model of alcohol use. *Journal of Personality and Social Psychology*, 69(5), 990–1005.
<https://doi.org/10.25816/5ec5bc1bed176>
- Cooper, M. L., Russell, M., & Frone, M. R. (1990). Work stress and alcohol effects: A test of stress-induced drinking. *Journal of Health and Social Behavior*, 31, 260–276. <https://doi.org/10.2307/2136891>
- Cooper, M. L., Russell, M., & George, W. H. (1988). Coping, expectancies, and alcohol abuse: A test of social learning formulations. *Journal of Abnormal Psychology*, 97, 218–230. <https://doi.org/10.1037//0021-843x.97.2.218>
- Corbin, W. R., Waddell, J. T., Ladensack, A., & Scott, C. (2020). I drink alone: Mechanisms of risk for alcohol problems in solitary drinkers. *Addictive Behaviors*, 102, 106147. <https://doi.org/10.1016/j.addbeh.2019.106147>
- Covington, S. S. (2000). Helping women recover: A comprehensive integrated treatment model. *Alcohol Treatment Quarterly*, 18, 99–111.
https://doi.org/10.1300/J020v18n03_09
- Cox, W. M., & Klinger, E. (1988). A motivational model of alcohol use. *Journal of Abnormal Psychology*, 97(2), 168–180. <https://doi.org/10.1037/0021-843X.97.2.168>
- Crnic, K., & Low, C. (2002). Everyday stresses and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Practical Issues in Parenting* (Vol. 5, 2nd ed., pp. 243–267). Mahwah: Lawrence Erlbaum Associates
- Day, K., Gough, B., & McFadden, M. (2004). Warning! Alcohol can seriously damage your feminine health: A discourse analysis of recent British newspaper coverage

- of women and drinking. *Feminist Media Studies*, 4(2), 165–183.
<https://doi.org/10.1080/1468077042000251238>
- Deater–Deckard, K., Chen, N., Wang, Z., & Bell, M. A. (2012). Socioeconomic risk moderates the link between household chaos and maternal executive function. *Journal of Family Psychology*, 26(3), 391–399. <https://doi.org/10.1037/a0028331>
- Deater–Deckard, K., Mullineaux, P. Y., Beekman, C., Petrill, S. A., Schatschneider, C., & Thompson, L. A. (2009). Conduct problems, IQ, and household chaos: A longitudinal multi-informant study. *Journal of Child Psychology and Psychiatry*, 50, 1301–1308. <http://doi.wiley.com/10.1111/j.1469-7610.2009.02108.x>
- Deater-Deckard, K., Mullineaux, P. Y., Beekman, C., Petrill, S. A., Schatschneider, C., & Thompson, L. A. (2009). Conduct problems, IQ, and household chaos: A longitudinal multi-informant study. *The Journal of Child Psychology and Psychiatry*, 50, 1301–1308. <http://dx.doi.org/10.1111/j.1469-7610.2009.02108.x>
- Deater-Deckard, K., Sewell, M. D., Petrill, S. A., & Thompson, L. A. (2010). Maternal working memory and reactive negativity in parenting. *Psychological Science*, 21, 75–79. [doi:10.1177/0956797609354073](https://doi.org/10.1177/0956797609354073)
- Dempster, A. P., Laird, N. M., & Rubin, D. B. (1977). Maximum likelihood from incomplete data via the EM algorithm. *Journal of the Royal Statistical Society, Series B*, 39, 1–38.
- Department of Defense (DoD). (2011b). *Comprehensive plan on prevention, diagnosis, and treatment of substance use disorders and disposition of substance use offenders in the armed forces*. Washington, DC: Office of the Under Secretary of Defense. <https://health.mil/Reference-Center/Reports/2011/07/27/Prevention-Diagnosis-and-Treatment-of-Substance-Use-Disorders>
- Dermody, Sarah Siodmok, Cheong, JeeWon, & Manuck, Stephen. (2013). An evaluation of the stress-negative affect model in explaining alcohol use: The role of

- components of negative affect and coping style. *Substance Use & Misuse*, 48(4), 297–308. <https://doi.org/10.3109/10826084.2012.761713>
- DiNallo J., Kuhl M., Borden L.M., & Perkins D. (2016). Interventions to support and strengthen parenting in military families: State of the evidence. In: Gewirtz A., Youssef A. (Eds.), *Risk and resilience in military and veteran families. Parenting and children's resilience in military families* (pp. 195-212). Cham, Switzerland: Springer International Publishing.
- Dir, A. L., Bell, R. L., Adams, Z. W., & Hulvershorn, L. A. (2017). Gender differences in risk factors for adolescent binge drinking and implications for intervention and prevention. *Frontiers in Psychiatry*, 8, 289. <https://doi.org/10.3389/fpsyt.2017.00289>
- Dragišić Labaš, S. (2016). Alcohol use: social aspect, gender differences and stigmatization. *Alcoholism and Psychiatry Research: Journal on Psychiatric Research and Addictions*, 52(1), 51–64. http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=235995
- Drummet, A. R., Coleman, M., & Cable, S. (2003). Military families under stress: Implications for family life education. *Family Relations*, 52(3), 279-287. <https://doi.org/10.1111/j.1741-3729.2003.00279.x>
- Duncan, S. C., Duncan, T. E., & Strycker, L. A. (2006). Alcohol use from ages 9 to 16: A cohort-sequential latent growth model. *Drug and Alcohol Dependence*, 81, 71–81. <https://doi.org/10.1016/j.drugalcdep.2005.06.001>
- Eagly, A. H. (1987). Sex differences in social behavior: A social-role interpretation. L. Erlbaum Associates.
- Eagly, A. H., & Wood, W. (2012). Social role theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (p. 458–476). Sage Publications Ltd. <https://doi.org/10.4135/9781446249222.n49>

- Eagly, A. H., & Wood, W. (2016). Explaining sex differences in social behavior: A meta-analytic perspective. *Personality & Social Psychology Bulletin*, 17(3), 306–315. <https://doi.org/10.1177/0146167291173011>.
- Eaton, K. M., Hoge, C. W., Messer, S. C., Whitt, A. A., Cabrera, O. A., McGurk, D.,... Castro, C. A. (2008). Prevalence of mental health problems, treatment need, and barriers to care among primary care- seeking spouses of military service members involved in Iraq and Afghanistan deployments. *Military Medicine*, 173, 1051–1056. <http://dx.doi.org/10.7205/MILMED.173.11.1051>
- Eggert, J., Theobald, H., & Engfeldt, P. (2004). Effects of alcohol consumption on female fertility during an 18-year period. *Fertility and Sterility*, 81(2), 379– 383. <https://doi.org/10.1016/j.fertnstert.2003.06.018>.
- Ekholm, O., Strandberg-Larsen, K., & Grønbaek, M. (2011). Influence of the recall period on a beverage-specific weekly drinking measure. *European Journal of Clinical Nutrition*, 65,520–525. <https://doi.org/10.1038/ejcn.2011.1>
- Elgar, F. J., Waschbusch, D. a., Dadds, M. R., & Sigvaldason, N. (2007). Development and Validation of a Short Form of the Alabama Parenting Questionnaire. *Journal of Child and Family Studies*, 16(2), 243–259. <https://doi.org/10.1007/s10826-006-9082-5>
- Enders, C.K. (2010). *Applied Missing Data Analysis*. New York: Guilford Press.
- Epstein, E.E., Fischer-Elber, K., & Al-Otaiba, Z. (2007) Women, aging, and alcohol use disorders. *Journal of Women Aging*, 19(1-2), 31–48. https://doi.org/10.1300/J074v19n01_03.
- Erbes, C. R., Kramer, M., Arbisi, P. A., Degarmo, D., & Polusny, M. A. (2017). Characterizing Spouse / Partner Depression and Alcohol Problems Over the Course of Military Deployment. *Journal of Consulting and Clinical Psychology*, 85(4), 297–308. <https://doi.org/10.1037/ccp0000190>

- Ernst, J. M., & Cacioppo, J. T. (1998). Lonely hearts: Psychological perspectives on loneliness. *Applied and Preventive Psychology*, 8(1), 1–22.
[https://doi.org/10.1016/S0962-1849\(99\)80008-0](https://doi.org/10.1016/S0962-1849(99)80008-0)
- Erol, A., & Karpyak, V. M. (2015). Sex and gender-related differences in alcohol use and its consequences: Contemporary knowledge and future research considerations. *Drug and Alcohol Dependence*, 156, 1–13.
<https://doi.org/10.1016/j.drugalcdep.2015.08.023>
- Faber, A. J., Willerton, E., Clymer, S. R., MacDermid, S. M., & Weiss, H. M. (2008). Ambiguous absence, ambiguous presence: A qualitative study of military reserve families in wartime. *Journal of Family Psychology*, 22, 222–230.
<http://dx.doi.org/10.1037/0893-3200.22.2.222>
- Fagan, J. (1994). Women and drugs revisited: Female participation in the cocaine economy. *Journal of Drug Issues*, 24(1-2), 179–225.
<https://doi.org/10.1177/002204269402400202>
- Flake, E. M., Davis, B. E., Johnson, P. L., & Middleton, L. S. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental and Behavioral Pediatrics*, 30(4), 271–278.
<https://doi.org/10.1097/DBP.0b013e3181aac6e4>
- Fokkema, T. (2002). Combining a job and children: Contrasting the health of married and divorced women in the Netherlands? *Social Science & Medicine*, 54(5), 741–752.
[https://doi.org/10.1016/S0277-9536\(01\)00106-X](https://doi.org/10.1016/S0277-9536(01)00106-X)
- Fossos, N., Kaysen, D., Neighbors, C., Lindgren, K.P., & Hove, M.C. (2011). Coping motives as a mediator of the relationship between sexual coercion and problem drinking in college students. *Addictive Behavior*, 36, 1001–1007.
<https://doi.org/10.1016/j.addbeh.2011.06.001>

- Fox, H. C., & Sinha, R. (2009). Sex differences in drug-related stress-system changes: Implications for treatment in substance-abusing women. *Harvard Review of Psychiatry*, 17(2), 103-119. <https://doi.org/10.1080/10673220902899680>
- Fujita, F., Diener, E., & Sandvik, E. (1991). Gender differences in negative affect and well-being: The case for emotional intensity. *Journal of Personality and Social Psychology*, 61(3), 427-434. <https://doi.org/10.1037/0022-3514.61.3.427>
- Gmel, G., Bloomfield, K., Ahlström, S., Choquet, M., & Lecomte, T. (2000). Women's roles and women's drinking: a comparative study in four European countries. *Substance Abuse*, 21(4), 249-264. <https://doi.org/10.1080/08897070009511437>
- Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Englewood Cliffs, NJ: Prentice Hall.
- Goldstein, J., Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2003). Smoking, drinking, and drug use in young adulthood: the impacts of new freedoms and new responsibilities. *Contemporary Sociology*, 32(1), 39-41. <https://doi.org/10.2307/3089835>
- Goldstein, L. H., Harvey, E. A., & Friedman-Weieneth, J. L. (2007). Examining subtypes of behavior problems among 3-year-old children, part III: Investigating differences in parenting practices and parenting stress. *Journal of Abnormal Child Psychology*, 35(1), 125-136. <https://doi.org/10.1007/s10802-006-9047-6>.
- Goode, W. J. (1960) A theory of role strain. *American Sociological Review*, 25, 483-496. <https://doi.org/10.2307/2092933>
- Gorman, L. A., Blow, A. J., Ames, B. D., & Reed, P. L. (2011). National Guard families after combat: Mental health, use of mental health services, and perceived treatment barriers. *Psychiatric Services*, 62(1), 28-34. http://dx.doi.org/10.1176/ps.62.1.pss6201_0028

- Gotham, H. J., Sher, K. J., & Wood, P. K. (2003). Alcohol involvement and developmental task completion during young adulthood. *Journal of Studies on Alcohol*, 64(1), 32–42. <https://doi.org/10.15288/jsa.2003.64.32>
- Grant, B. F., Chou, S. P., Saha, T. D., Pickering, R. P., Kerridge, B. T., Ruan, W. J., ... Hasin, D. S. (2017). Prevalence of 12-month alcohol use, high-risk drinking, and DSM-IV alcohol use disorder in the United States, 2001-2002 to 2012-2013: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *JAMA Psychiatry*, 74(9). <https://doi.org/10.1001/jamapsychiatry.2017.2161>
- Grant, V. V., Stewart, S. H., & Mohr, C. D. (2009). Coping-anxiety and coping-depression motives predict different daily mood-drinking relationships. *Psychology of Addictive Behaviors*, 23(2), 226–237. <https://doi.org/10.1037/a0015006>
- Greenfield, T. K., & Room, R. (1997). Situational norms for drinking and drunkenness: Trends in the US adult population, 1979-1990. *Addiction*, 92(1), 33-47. <https://doi.org/10.1111/j.1360-0443.1997.tb03636.x>
- Guinle, M. I. B., & Sinha, R. (2020). The role of stress, trauma, and negative affect in alcohol misuse and alcohol use disorder in women. *Alcohol Research: Current Reviews*, 40(2), 5. <https://doi.org/10.35946/arcr.v40.2.05>
- Hammer, L. B., Brockwood, K., & Haverly, S. N. (2021). The Key Role of Supervisors for Supporting Veterans in the Workplace. In *Military Veteran Employment: A Guide for the Data-driven Leader*. (pp. 218–239). <https://doi.org/10.1093/oso/9780190642983.003.0011>
- Hammer, L. B., Ernst Kossek, E., Bodner, T., & Crain, T. (2013). Measurement Development and Validation of the Family Supportive Supervisor Behavior Short-Form (FSSB-SF). *Journal of Occupational Health Psychology*, 18(3), 285–296. <https://doi.org/10.1037/a0032612>

- Handley, E. D., & Chassin, L. (2008). Stress-induced drinking in parents of adolescents with externalizing symptomatology: The moderating role of parent social support. *American Journal on Addictions, 17*(6), 469–477. <https://doi.org/10.1080/10550490802408795>.
- Hardaway, C. R., Wilson, M. N., Shaw, D. S., & Dishion, T. J. (2012). Family functioning and externalizing behavior among low-income children: Self-regulation as a mediator. *Infant and Child Development, 21*(1), 67–84. <http://dx.doi.org/10.1002/icd.765>
- Hawkins, D., & Monahan, K. (2009). Covariance of Problem Behaviors in Adolescence. Paper presented at the IOM Committee of the Science of Adolescence workshop, Washington, DC.
- Hawkey, L. C., & Cacioppo, J. T. (2010). Loneliness matters: A theoretical and empirical review of consequences and mechanisms. *Annals of Behavioral Medicine, 40*(2), 218–227. <https://doi.org/10.1007/s12160-010-9210-8>.
- Hays, S. (1996). *The Cultural Contradictions of Motherhood*. New Haven, CT: Yale University Press.
- Homish, G. G., & Leonard, K. E. (2005). Marital quality and congruent drinking. *Journal of studies on alcohol, 66*(4), 488–496. <https://doi.org/10.15288/jsa.2005.66.488>.
- Hosseini, S. (2017). *I'm Done Making Mommy Wine Jokes, and This is Why*. New York: Scary Mommy; 2017 [cited 2019, Apr 29]. <https://www.scarymommy.com/done-making-mommy-wine-jokes/>.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55. <https://doi.org/10.1080/10705519909540118>
- Hughes, M. E., Waite, L. J., Hawkey, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys results from two population-based studies. *Research on Aging, 26*(6), 655-672. <https://doi.org/10.1177/0164027504268574>

- Hull, J. G. (1981). A self-awareness model of the causes and effects of alcohol consumption. *Journal of Abnormal Psychology*, 90(6), 586-600.
<https://doi.org/10.1037/0021-843X.90.6.586>
- Hull, J. G., Levenson, R. W., Young, R. D., & Sher, K. J. (1983). Self-awareness-reducing effects of alcohol consumption. *Journal of Personality and Social Psychology*, 44(3), 461-473. <https://doi.org/10.1037/0022-3514.44.3.461>
- Hussong, A. M., & Chassin, L. (1994). The stress-negative affect model of adolescent alcohol use: Disaggregating negative affect. *Journal of Studies on Alcohol*, 55(6), 707-718. <https://doi.org/10.15288/jsa.1994.55.707>
- Hussong, A M, Hicks, R E, Levy, S A, & Curran, P J. (2001). Specifying the relations between affect and heavy alcohol use among young adults. *Journal of Abnormal Psychology*, 110(3), 449-461. <https://doi.org/10.1037//0021-843X.110.3.449>.
- Hussong, A. M. (2007). Predictors of drinking immediacy following daily sadness: An application of survival analysis to experience sampling data. *Addictive Behaviors*, 32(5), 1054-1065. <https://doi.org/10.1016/j.addbeh.2006.07.011>.
- Jacobs, R. (2012). Uncorking the mommy market: Phenomenal Facebook following has Marilé Borden contemplating the future of moms who need wine. *Colby Magazine*. 100(4), 9.
<https://digitalcommons.colby.edu/colbymagazine/vol100/iss4/9>.
- Johnston, A. D. (2011). *Women are the New Face of Alcohol Advertising*. Toronto: *The Star*; 2011. <http://www.camy.org/docs/newsroom/in-the-news/PDFs-In%20the%20News/jernigantontorontostararticle.pdf>.
- Johnston, C., & Mash, E. (2001). Families of children with attention-deficit/hyperactivity disorder: Review and recommendations for future research. *Clinical Child and Family Psychology Review*, 4(3), 183-207.
<https://doi.org/10.1023/a:1017592030434>.

- Karoly, P. (1993). Mechanisms of self-regulation: A systems review. *Annual Review of Psychology*, 44, 23–52. <http://dx.doi.org/10.1146/annurev.ps.44.020193.000323>
- Karriker-Jaffe, K. J., Tam, C. C., Cook, W. K., Greenfield, T. K., & Roberts, S. C. M. (2019). Gender equality, drinking cultures and second-hand harms from alcohol in the 50 US states. *International Journal of Environmental Research and Public Health*, 16(23). <https://doi.org/10.3390/ijerph16234619>
- Kaufman, G., & Uhlenberg, P. (2000). The influence of parenthood on the work effort of married men and women. *Social Forces*, 78(3), 931–947. <https://doi.org/10.1093/sf/78.3.931>
- Kenny, D. A. (1979). Correlation and Causality. John Wiley & Sons, Inc
- Keough, M. T., O'Connor, R. M., Sherry, S. B., & Stewart, S. H. (2015). Context counts: Solitary drinking explains the association between depressive symptoms and alcohol- related problems in undergraduates. *Addictive Behaviors*, 42, 216–221. <https://doi.org/10.1016/j.addbeh.2014.11.031>
- Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S. L., ... & Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, 32(06), 959-976. <https://doi.org/10.1017/S0033291702006074>
- Keyes, K. M., Grant, B. F., & Hasin, D. S. (2008). Evidence for a closing gender gap in alcohol use, abuse, and dependence in the United States population. *Drug & Alcohol Dependence*, 93(1), 21– 29. <https://doi.org/10.1016/j.drugalcdep.2007.08.017>.
- Kindy, K., & Keating, D. (2016) For women, heavy drinking has been normalized. That's dangerous. *The Washington Post*, Washington, D.C. https://www.washingtonpost.com/national/for-women-heavy-drinking-has-been-normalized-thats-dangerous/2016/12/23/0e701120-c381-11e6-9578-0054287507db_story.html?utm_term=.a19202196c81.

- Klee, H. (1998) Drug-using parents: Analyzing the stereotypes. *International Journal of Drug Policy*, 9(6), 437–448. [https://doi.org/10.1016/S0955-3959\(98\)00060-7](https://doi.org/10.1016/S0955-3959(98)00060-7)
- Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd ed.). Guilford Press.
- Krauthamer, C. (1979). Maternal attitudes of alcoholic and nonalcoholic upper middle-class women. *Substance Use and Misuse*, 14(5), 639-644. <https://doi.org/10.3109/10826087909041896>
- Krieger, N. (1999). Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Health Services*, 29(2), 295-352. <https://doi.org/10.2190/M11W-VWXE-KQM9-G97Q>.
- Kuntsche, E., & Cooper, M. (2010). Drinking to have fun and to get drunk: Motives as predictors of weekend drinking over and above usual drinking habits. *Drug and Alcohol Dependence*, 110(3), 259-262. <https://doi.org/10.1016/j.drugalcdep.2010.02.021>.
- Kuntsche, E., & Kuntsche, S. (2009). Development and validation of the Drinking Motive Questionnaire revised short form (DMQ-R SF). *Journal Of Clinical Child And Adolescent Psychology*, 38(6), 899-908. <http://www.tandfonline.com/doi/abs/10.1080/15374410903258967>
- Kuntsche, E., Knibbe, R., Gmel, G., & Engels, R. (2005). Why do young people drink? A review of drinking motives. *Clinical Psychology Review*, 25(7), 841–861. <https://doi.org/10.1016/j.cpr.2005.06.002>
- Kuntsche, S., Knibbe, R. A., & Gmel, G. (2012). Parents' alcohol use: Gender differences in the impact of household and family chores. *European Journal of Public Health*, 22(6), 894–899. <https://doi.org/10.1093/eurpub/ckr145>
- Kuntsche, S., Knibbe, R. A., Kuntsche, E., & Gmel, G. (2011). Housewife or working mum-each to her own? The relevance of societal factors in the association

between social roles and alcohol use among mothers in 16 industrialized countries. *Addiction*, 106(11), 1925–1932. <https://doi.org/10.1111/j.1360-0443.2011.03507.x>

Kuntsche, E., Wicki, M., Windlin, B., Roberts, C., Gabhainn, S. N., van der Sluijs, W., ... Demetrovics, Z. (2015). Drinking motives mediate cultural differences but not gender differences in adolescent alcohol use. *Journal of Adolescent Health*, 56(3), 323–329. <https://doi.org/10.1016/j.jadohealth.2014.10.267>.

Kuntsche, Emmanuel, Knibbe, Ronald, Gmel, Gerhard, & Engels, Rutger. (2006). Who drinks and why? A review of socio-demographic, personality, and contextual issues behind the drinking motives in young people. *Addictive Behaviors*, 31(10), 1844–1857. <https://doi.org/10.1016/j.addbeh.2005.12.028>

Kuntsche, S., & Kuntsche, E. (2019). Being old fashioned in a modern world: Gender role attitudes moderate the relation between role conflicts and alcohol use of parents. *Drug and Alcohol Dependence*, 195, 90–93. <https://doi.org/10.1016/j.drugalcdep.2018.11.025>.

Kuntsche, E., & Labhart, F. (2013) Drinking motives moderate the impact of pre-drinking on heavy drinking on a given evening and related adverse consequences-an event-level study. *Addiction*, 108(10), 1747–1755. <https://doi.org/10.1111/add.12253>.

Kushner, M. G., Abrams, K., & Borchardt, C. (2000). The relationship between anxiety disorders and alcohol use disorders: A review of major perspectives and findings. *Clinical Psychology Review*, 20(2), 149-171. [https://doi.org/10.1016/s0272-7358\(99\)00027-6](https://doi.org/10.1016/s0272-7358(99)00027-6).

Lahelma, E., Arber, S., Kivelä, K., & Roos, E. (2002). Multiple roles and health among British and Finnish women: The influence of socioeconomic circumstances. *Social Science & Medicine*, 54(5), 727–740. [https://doi.org/10.1016/s0277-9536\(01\)00105-8](https://doi.org/10.1016/s0277-9536(01)00105-8).

- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria what did they really say. *Organizational Research Methods*, 9(2), 202-220.
<http://journals.sagepub.com/doi/10.1177/1094428105284919>
- Lapp, C. A., Taft, L. B., Tollefson, T., Hoepner, A., Moore, K., & Divyak, K. (2010). Stress and coping on the home front: Guard and reserve spouses searching for a new normal. *Journal of Family Nursing*, 16(1), 45-67.
<https://doi.org/10.1177/1074840709357347>
- Lareau, A. (2011). *Unequal Childhoods: Class, Race, and Family Life*. Berkeley: University of California Press.
- Latané, B. (1981). The psychology of social impact. *American Psychologist*, 36(4), 343–356 <http://www.apa.org/pubs/journals/amp/>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer. https://doi.org/10.1007/978-1-4419-1005-9_215.
- Lee, C. (1997). Social context, depression and the transition to motherhood. *British Journal of Health Psychology* 2(2), 93–108. <https://doi.org/10.1111/j.2044-8287.1997.tb00527.x>
- Lee, J. D., O'Neill, A. S., Denning, E.C., Mohr, C. D., & Hammer, L.B. (2020). A Dyadic Examination of Drinking Behaviors within Military-Connected Couples. *Military Behavioral Health*, 8(4), 396–409.
<https://doi.org/10.1080/21635781.2020.1825241>
- Lee, K., Vasileiou, K., & Barnett, J. (2019). Lonely within the mother: An exploratory study of first-time mothers' experiences of loneliness. *Journal of Health Psychology*, 24(10), 1334-1344. <https://doi.org/10.1177/1359105317723451>.
- Lehavot, K., Stappenbeck, C. A., Luterek, J. A., Kaysen, D., & Simpson, T. L. (2014). Gender differences in relationships among PTSD severity, drinking motives, and

- alcohol use in a comorbid alcohol dependence and PTSD sample. *Psychology of Addictive Behaviors*, 28(1), 42-52. <https://doi.org/10.1037/a0032266>.
- Leonard, K. E., & Eiden, R. D. (2007). Marital and family processes in the context of alcohol use and alcohol disorders. *Annual review of clinical psychology*, 3, 285–310. <https://doi.org/10.1146/annurev.clinpsy.3.022806.091424>.
- Levitt, A., & Cooper, M. L. (2010). Daily alcohol use and romantic relationship functioning: evidence of bidirectional, gender-, and context-specific effects. *Personality and Social Psychology Bulletin*, 36(12), 1706–1722. <https://doi.org/10.1177/0146167210388420>
- Lewis, H. B. (1971). *Shame and Guilt in Neurosis*. New York: International Universities Press.
- Little, R. J. (1995). Modeling the drop-out mechanism in repeated-measures studies. *Journal of The American Statistical Association*, 90(431), 1112-1121.
- Little, R. J. A. (1988) A Test of Missing Completely at Random for Multivariate Data with Missing Values. *Journal of the American Statistical Association*, 83, 1198-1202. <http://dx.doi.org/10.1080/01621459.1988.10478722>
- Long, J., & Porter K. L. (1984) Multiple Roles of Midlife Women. In: Baruch G., Brooks-Gunn J. (eds) *Women in Midlife. Women in Context: Development and Stresses*. Springer, Boston, MA. https://doi.org/10.1007/978-1-4684-7823-5_6
- Luoma, J., Guinther, P., Lawless DesJardins, N., & Vilardaga, R. (2018). Is shame a proximal trigger for drinking? A daily process study with a community sample. *Experimental and Clinical Psychopharmacology*, 26(3), 290-301. <https://doi.org/10.1037/pha0000189>.
- MacCallum, R. (1986). Specification searches in covariance structure modeling. *Psychological Bulletin*, 100, 107-120.

- MacDermid Wadsworth, S., & Southwell, K. (2011). Military Families: Extreme Work and Extreme "Work-Family." *Annals of the American Academy of Political and Social Science*, 638(1), 163–183. <https://doi.org/10.1177/0002716211416445>
- MacDermid Wadsworth, S. M. (2010). Family risk and resilience in the context of war and terrorism. *Journal of Marriage and Family*, 72, 537–556. <http://dx.doi.org/10.1111/j.1741-3737.2010.00717.x>
- Maloney, E., Hutchinson, D., Burns, L., & Mattick, R. (2010). Prevalence and patterns of problematic alcohol use among Australian parents. *Australian and New Zealand Journal of Public Health*, 34(5), 495–501. <https://doi.org/10.1111/j.1753-6405.2010.00596.x>
- Manchón Walsh, P., Carrillo, P., Flores, G., Masuet, C., Morchon, S., & Ramon, J. M. (2007). Effects of partner smoking status and gender on long term abstinence rates of patients receiving smoking cessation treatment. *Addictive Behaviors*, 32(1), 128-136 <https://doi.org/10.1016/j.addbeh.2006.03.027>
- Mandai, M., Kaso, M., Takahashi, Y., & Nakayama, T. (2018). Loneliness among mothers raising children under the age of 3 years and predictors with special reference to the use of SNS: A community-based cross-sectional study. *BMC Women's Health*, 18(1), 131. <https://doi.org/10.1186/s12905-018-0625-x>.
- Mansfield, A. J., and C. C. Engel. 2011. Understanding substance use in military spouses. *Journal of Clinical Psychology in Medical Settings*, 18(2), 198-199. <https://doi.org/10.1007/s10880-011-9244-5>
- Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review*, 42(6), 921-936. <http://www.jstor.org/stable/2094577?origin=crossref>
- Marsh, J. C., D'Aunno, T. A., & Smith, B. D. (2000). Increasing access and providing social services to improve drug abuse treatment for women with children.

Addiction, 95(2), 1237-1247. <https://doi.org/10.1046/j.1360-0443.2000.958123710.x>

Maslowsky, J., Jager, J., & Hemken, D. (2015). Estimating and interpreting latent variable interactions: A tutorial for applying the latent moderated structural equations method. *International Journal of Behavioral Development*, 39(1), 87–96. <https://doi.org/10.1177/0165025414552301>

Matheny, A. P., Wachs, T. D., Ludwig, J. L., & Phillips, K. (1995). Bringing order out of chaos: Psychometric characteristics of the Confusion, Hubbub, and Order Scale. *Journal of Applied Developmental Psychology*, 16, 429–444. <https://linkinghub.elsevier.com/retrieve/pii/0193397395900284>

McCaul, M. E., Roach, D., Hasin, D. S., et al. (2019) Alcohol and women: A brief overview. *Alcohol Clinical and Experimental Research*. 43(5), 774-779. <https://doi.org/10.1111/acer.13985>

McCreary, D. R., & Sadava, S. W. (1998). Stress, drinking, and the adverse consequences of drinking in two samples of young adults. *Psychology of Addictive Behaviors*, 12(4), 247–261. <https://doi.org/10.1037/0893-164X.12.4.247>

McCreary, D. R., & Sadava, S. W. (2000). Stress, alcohol use and alcohol-related problems: The influence of negative and positive affect in two cohorts of young adults. *Journal of Studies on Alcohol*, 61, 466–474. <https://doi.org/10.15288/jsa.2000.61.466>

McCubbin, H. I., & Patterson, J. (1982). Self-Reliance Index (SRI). In *Family Assessment: Resiliency, Coping and Adaptation Inventories for Research and Practice* (p. 625-637). Madison, Wisconsin: University of Wisconsin Publishers

McKee, L., Colletti, C., Rakow, A., Jones, D. J., & Forehand, R. (2008). Parenting and child externalizing behaviors: Are the associations specific or diffuse? *Aggression and Violent Behavior*, 13(3), 201-215. <https://doi.org/10.1016/j.avb.2008.03.005>

- Mcketta, S., & Keyes, K. (2019). Heavy and binge alcohol drinking and parenting status in the United States from 2006 to 2018: An analysis of nationally representative cross-sectional surveys. *PLoS Medicine*, 16(11), <https://doi.org/10.1371/journal.pmed.1002954>
- Meeussen, L., & Van Laar, C. (2018). Feeling pressure to be a perfect mother relates to parental burnout and career ambitions. *Frontiers in Psychology*, 9, 2113. <https://doi.org/10.3389/fpsyg.2018.02113>
- Merrill, J. E., & Thomas, S. E. (2013). Interactions between adaptive coping and drinking to cope in predicting naturalistic drinking and drinking following a lab-based psychosocial stressor. *Addictive Behaviors*, 38(3), 1672–1678. <http://dx.doi.org/10.1016/j.addbeh.2012.10.003>.
- Mohr, C. D., Armeli, S., Tennen, H., Todd, M., Clark, J., & Carney, M. (2005). Moving beyond the keg party: A daily process study of college student drinking motivations. *Psychology of Addictive Behaviors*, 19(4), 392–403. <https://doi.org/10.1037/0893-164X.19.4.392>
- Mohr, Cynthia D, McCabe, Cameron T, Haverly, Sarah N, Hammer, Leslie B, & Carlson, Kathleen F. (2018). Drinking Motives and Alcohol Use: The SERVe Study of U.S. Current and Former Service Members. *Journal of Studies on Alcohol and Drugs*, 79(1), 79–87. <http://www.jsad.com/doi/10.15288/jsad.2018.79.79>
- Moos, R.H., Moos, B.S., & Timko, C.(2006). Gender, treatment and self-help in remission from alcohol use disorders. *Clinical Medicine & Research*, 4(3), 163–174. <https://doi.org/10.3121/cmr.4.3.163>
- Moulder, B. C., & Algina, J. (2002). Comparison of Methods for Estimating and Testing Latent Variable Interactions. *Structural Equation Modeling: A Multidisciplinary Journal*, 9(1), 1–19. https://doi.org/10.1207/S15328007SEM0901_1
- Newsom, J.T. (2015). Longitudinal structural equation modeling: A comprehensive introduction. New York: Routledge.

- Newsom, J. (2020). Structural Equation Modeling: *Nested Models, Model Modifications, and Correlated Errors* [Lecture Handout]. Portland State University, PSY 523/623. http://web.pdx.edu/~newsomj/semclass/ho_nested.pdf
- National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2020) *Drinking levels defined: Binge drinking and heavy alcohol use*. <https://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking#:~:text=Heavy%20Alcohol%20Use%3A,than%203%20drinks%20for%20women.>
- Offer, S. (2014). Time with children and employed parents' emotional well-being. *Social Science Research*, 47, 192-203. <https://doi.org/10.1016/j.ssresearch.2014.05.003>
- Osborne, C., & Berger, L. M. (2009). Parental substance abuse and child well-being: A consideration of parents' gender and co-residence. *Journal of Family Issues*, 30(3), 341-370. <https://doi.org/10.1177/0192513X08326225>
- Padden, D. L., R. A. Connors, and J. G. Agazio. 2011. Determinants of health-promoting behaviors in military spouses during deployment separation. *Military Medicine* 176(1): 26-34. <https://doi.org/10.7205/MILMED-D-d1-000141>
- Paradis, C. (2011). Parenthood, drinking locations and heavy drinking. *Social Science and Medicine*, 72(8), 1258–1265. <https://doi.org/10.1016/j.socscimed.2011.02.025>
- Park, C., Armeli, S., & Tennen, H. (2004). The daily stress and coping process and alcohol use among college students. *Journal of Studies on Alcohol*, 65(1), 126–135. <https://doi.org/10.15288/jsa.2004.65.126>
- Parks, K., & Scheidt, D. (2000) Male bar drinkers' perspective on female bar drinkers. *Sex Roles*, 43(11), 927– 941. <https://doi.org/10.1023/A:1011045207587>

- Pascoe, E. A., & Richman, L. S. (2009). Perceived Discrimination and Health: A Meta-Analytic Review. *Psychological Bulletin*, 135(4):531–554.
<https://doi.org/10.1037/a0016059>
- Peirce, R. S., Frone, M. R., Russell, M., & Cooper, M. L. (1994). Relationship of financial strain and psychosocial resources to alcohol use and abuse: the mediating role of negative affect and drinking motives. *Journal of Health and Social Behavior*, 35(4), 291–308. <https://doi.org/10.2307/2137211>
- Pelham, W. E., & Lang, A. R. (1993). Parental alcohol consumption and deviant child behavior: Laboratory studies of reciprocal effects. *Clinical Psychology Review*, 13(8), 763–784. [https://doi.org/10.1016/S0272-7358\(05\)80005-4](https://doi.org/10.1016/S0272-7358(05)80005-4)
- Peltier, M. R., Verplaetse, T. L., Mineur, Y. S., Petrakis, I. L., Cosgrove, K. P., Picciotto, M. R., & McKee, S. A. (2019). Sex differences in stress-related alcohol use. *Neurobiology of Stress*, 10, 100149. <https://doi.org/10.1016/j.ynstr.2019.100149>.
- Peralta, R. L., & Jauk, D. (2011) A brief feminist review and critique of the sociology of alcohol-use and substance- abuse treatment approaches. *Sociology Compass*, 5(10), 882–897. <https://doi.org/10.1111/j.1751-9020.2011.00414.x>
- Petrill, S. A., Pike, A., Price, T., Plomin, R. (2004). Chaos in the home and socioeconomic status are associated with cognitive development in early childhood: Environmental mediators identified in a genetic design. *Intelligence*, 32, 445–460.
- Pincus, S. H., House, R., Christenson, J., & Adler, L. E. (2001). The emotional cycle of deployment: A military family perspective. *Journal of the Army Medical Department*, 2, 15–23. <https://www.military.com/spouse/military-deployment/dealing-with-deployment/emotional-cycle-of-deployment-military-family.html>
- Plant, M., & Plant, M. (2006). *Binge Britain: Alcohol and the National Response*. Oxford: Oxford University Press.

- Preacher, K. J., & MacCallum, R. C. (2003). Repairing Tom Swift's Electric Factor Analysis Machine. *Understanding Statistics*, 2(1), 13–43.
https://doi.org/10.1207/s15328031us0201_02
- Raley, S., Bianchi, S. M., & Wang, W. (2012). When do fathers care? Mothers' economic contribution and fathers' involvement in childcare. *American Journal of Sociology*, 117(5), 1422–1459. <https://doi.org/10.1086/663354>
- Read, J. P., Wood, M. D., Kahler, C. W., Maddock, J. E., & Palfai, T. P. (2003). Examining the role of drinking motives in college student alcohol use and problems. *Psychology of Addictive Behaviors*, 17(1), 13–23.
<https://doi.org/10.1037/0893-164X.17.1.13>
- Reyno, S. M., Stewart, S. H., Brown, C. G., Horvath, P., & Wiens, J. (2006). Anxiety sensitivity and situation-specific drinking in women with alcohol problems. *Brief Treatment and Crisis Intervention*, 6(3), 268–282. <https://doi.org/doi:10.1093/brief-treatment/mhl007>
- Robins, L. N., & Reiger, D. A. (1991). *Psychiatric Disorders in America: The Epidemiological Catchment Area Study*. New York: Free Press.
- Roeters, A., & Gracia, P. (2016). Child care time, parents' well-being, and gender: Evidence from the American time use survey. *Journal of Child and Family Studies*, 25(8), 2469–2479. <https://doi.org/10.1007/s10826-016-0416-7>
- Rokach, A. (2004). Giving life: Loneliness, pregnancy and motherhood. *Social Behavior and Personality*, 32(7), 691–702. <https://doi.org/10.2224/sbp.2004.32.7.691>
- Ross, C. E., & Willigen, M. Van. (1996). Gender, parenthood, and anger. *Journal of Marriage and the Family*, 58(3), 572–584. <https://doi.org/10.2307/353718>
- Rubery, J., Smith, M., Fagan, C., & Grimshaw, D. (1997). *Women and European Employment*. London: Routledge.
- Rubin, D.B. (1976). Inference with missing data. *Biometrika*, 63, 581–592.

- Rueda, M. R., Posner, M. I., & Rothbart, M. K. (2005). The development of executive attention: Contributions to the emergence of self-regulation. *Developmental Neuropsychology*, 28(2), 573–594. http://dx.doi.org/10.1207/s15326942dn2802_2
- Rumpf, H.-J, Hapke, U., Meyer, C., & John, U. (2002). Screening for alcohol use disorders and at-risk drinking in the general population: psychometric performance of three questionnaires. *Alcohol and Alcoholism*, 37(3), 261–268. <https://doi.org/10.1093/alcalc/37.3.261>
- Sanchez, L., & Thomson, E. (1997). Becoming mothers and fathers: Parenthood, gender, and the division of labor. *Gender & Society*, 11(6), 747–772. <https://doi.org/10.1177/089124397011006003>
- Sayer, L. C., Bianchi, S. M., & Robinson, J. P. (2004). Are parents investing less in children? Trends in mothers' and fathers' time with children. *American Journal of Sociology*, 110(1), 1–43. <https://doi.org/10.1086/386270>
- Schafer, J.L., & Graham, J.W. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7, 147–177.
- Schumm, W. R., Bell, D. B. and Gade, P. A. (2000). Effects of a military overseas peacekeeping deployment on marital quality, satisfaction, and stability. *Psychological Reports* 87(3), 815–821. <https://doi.org/10.2466/pr0.2000.87.3.815>
- Seljamo, S., Aromaa, M., Koivusilta, L., Rautava, P., Sourander, A., Helenius, H., & Sillanpää, M. (2006). Alcohol use in families: A 15-year prospective follow-up study. *Addiction*, 101, 984–992. <https://doi.org/10.1111/j.1360-0443.2006.01443.x>.
- Shaver, P. R., & Brennan, K. A. (1991). Measures of depression and loneliness. In J. P. Robinson & P. R. Shaver (Eds.), *Measures of Personality and Social Psychological Attitudes* (pp. 195–289). <https://doi.org/10.1016/B978-0-12-590241-0.50010-1>

- Shaw, D. S., & Bell, R. Q. (1993). Developmental theories of parental contributors to antisocial behavior. *Journal of Abnormal Child Psychology*, 21(5), 493–518. <https://doi.org/10.1007/BF00916316>.
- Simon, J. M. (2014). Disciplining Drunken Mothers: Media Representations of Women's Use of Alcohol. *Communication Review*, 17(1), 45–64. <https://doi.org/10.1080/10714421.2014.872499>
- Simons, J. S., & Gaher, R. M. (2005). The distress tolerance scale: Development and validation of a self-report measure. *Motivation and Emotion*, 29(2), 83–102. <https://doi.org/10.1007/s11031-005-7955-3>
- Simons, J.S., Gaher, R.M., Correia, C.J., Hansen, C.L., & Christopher, M.S. (2005) An affective-motivational model of marijuana and alcohol problems among college students. *Psychology of Addictive Behaviors* 19(3), 326–334. <http://doi.apa.org/getdoi.cfm?doi=10.1037/0893-164X.19.3.326>
- Sinha, R. (2008). Chronic stress, drug use, and vulnerability to addiction. *Annals of the New York Academy of Sciences*, 1141, 105–130. <https://doi.org/10.1196/annals.1441.030>.
- Skeggs, B. (2005). The making of class and gender through visualizing moral subject formation. *Sociology*, 39(5), 965–982. <https://doi.org/10.1177/0038038505058381>
- Smith, M. (2004). Parental mental health: Disruptions to parenting and outcomes for children. *Child & Family Social Work*, 9(1), 3–11. <https://doi.org/10.1111/j.1365-2206.2004.00312.x>
- Spera, C., Thomas, R. K., Barlas, F., Szoc, R., & Cambridge, M. H. (2011). Relationship of military deployment recency, frequency, duration, and combat exposure to alcohol use in the Air Force. *Journal of Studies on Alcohol and Drugs*, 72(1), 5–14. <https://doi.org/10.15288/jsad.2011.72.5>.

- Stahre, M. A., Brewer, R. D., Fonseca, V. P., & Naimi, T. S. (2009). Binge drinking among U.S. active-duty military personnel. *American Journal of Preventive Medicine*, 36(3), 208–217. <https://doi.org/10.1016/j.amepre.2008.10.017>
- Stern, D. (2009). Consuming the fractured female: Lessons from MTV's The Real World. *Communication Review*, 12(1), 50–77. <https://doi.org/10.1080/10714420802716353>
- Stewart, S. H., Gavric, D., & Collins, P. (2009). Women, girls, and alcohol. In K. T. Brady, S. E. Back, & S. F. Greenfield (Eds.), *Women and Addiction: A Comprehensive Handbook* (pp. 341-359). Guildford Press. <https://psycnet.apa.org/record/2009-07257-019>
- Stewart, S. H., Loughlin, H. L., & Rhyno, E. (2001). Internal drinking motives mediate personality domain-drinking relations in young adults. *Personality and Individual Differences*, 30(2), 271–286. [https://doi.org/10.1016/S0191-8869\(00\)00044-1](https://doi.org/10.1016/S0191-8869(00)00044-1)
- Stewart-Knox, B., Gardiner, K., & Wright, M. (2003). What is the problem with breast-feeding? A qualitative analysis of infant feeding perceptions. *Journal of Human Nutrition and Dietetics*, 16(4), 265-73. <https://doi.org/10.1046/j.1365-277X.2003.00446.x>
- Straus, E., Norman, S. B., & Pietrzak, R. H. (2020). Determinants of new-onset alcohol use disorder in U.S. military veterans: Results from the National Health and Resilience in Veterans Study. *Addictive Behaviors*, 105(August 2019), 106313. <https://doi.org/10.1016/j.addbeh.2020.106313>
- Stringer, K. L., & Baker, E. H. (2018). Stigma as a barrier to substance abuse treatment among those with unmet need: An analysis of parenthood and marital status. *Journal of Family Issues*, 39(1), 3–27. <https://doi.org/10.1177/0192513X15581659>
- Studer, J., Baggio, S., Mohler-Kuo, M., Dermota, P., Daepfen, J. B., & Gmel, G. (2014). Differential association of drinking motives with alcohol use on weekdays and

weekends. *Psychology of Addictive Behaviors*, 28(3), 651–658.

<https://doi.org/10.1111/1745-9125.12044>.

Substance Abuse and Mental Health Services Administration (SAMHSA) (2014). *Table 2.46B—Alcohol use, binge alcohol use, and heavy alcohol use in the past month among persons aged 18 or older, by demographic characteristics: Percentages, 2013 and 2014*. National Survey on Drug Use and Health (NSDUH) [Accessed July 26, 2020]. <http://www.samhsa.gov/data/sites/default/files/NSDUH-DetTabs2014/NSDUH-DetTabs2014.htm#tab2-46b>.

Tan, C. H., Denny, C. H., Cheal, N. E., Sniezek, J. E., & Kanny, D. (2015). Alcohol use and binge drinking among women of childbearing age, United States, 2011–2013. *Morbidity and Mortality Weekly Report*, 64(37), 1042–1046.

<https://doi.org/10.15585/mmwr.mm6437a6>

Tangney, J. P., & Dearing, R. L. (2002). Emotions and social behavior. *Shame and guilt*. Guilford Press. <https://doi.org/10.4135/9781412950664.n388>

Taylor, E., & Wallace, L. (2012). For shame: Feminism, breastfeeding advocacy, and maternal guilt. *Hypatia*, 27(1), 76–98. <https://doi.org/10.1111/j.1527-2001.2011.01238.x>

U.S. Department of Defense. (2017). 2017 Demographics report: *Profile of the military community*. Washington DC: Department of Defense. <http://download.militaryonesource.mil/12038/MOS/Reports/2017-demographics-report.pdf>

Veilleux, J. C., Skinner, K. D., Reese, E. D., & Shaver, J. A. (2014). Negative affect intensity influences drinking to cope through facets of emotion dysregulation. *Personality and Individual Differences*, 59, 96–101.

<https://doi.org/10.1016/j.paid.2013.11.012>

Vest, B. M., Heavey, S. C., Homish, D. L., & Homish, G. G. (2018). Alcohol misuse in reserve soldiers and their partners: Cross-spouse effects of deployment and

combat exposure. *Substance Use & Misuse*, 53(5), 800-807.

<https://doi.org/10.1080/10826084.2017.1385632>.

Vogeltanz-Holm, N. D., Neve, R., Greenfield, T., Wilsnack, R. W., Kubicka, L., Wilsnack, S. C., et al. (2004). A cross-cultural analysis of women's drinking and drinking-related problems in five countries: findings from the International Research Groupon Gender and Alcohol. *Addiction Research & Theory*, 12(1), 31-40. <https://doi.org/10.1046/j.1360-0443.2000.95225112.x>.

Vourakis, C. (2017). Women and binge drinking. *Journal of Addictions Nursing*, 28(1), 1-3. <https://doi.org/10.1097/JAN.0000000000000161>.

Wachs, T. D., & Evans, G. W. (2010). Chaos in context. In G. W. Evans, & T. D. Wachs (Eds.), *Chaos and Its Influence on Children's Development: An Ecological Perspective* (pp. 3–13). Washington, DC US: American Psychological Association. <https://doi.org/10.1037/12057-001>

Wall, G. (2010). Mothers' experiences with intensive parenting and brain development discourse. *Women's Studies International Forum*, 33(3), 253–263. <https://doi.org/10.1016/j.wsif.2010.02.019>

Walters, K. L., Simoni, J. M., & Evans-Campbell, T. (2002). Substance use among American Indians and Alaska natives: Incorporating culture in an "indigenist" stress-coping paradigm. *Public Health Reports (Washington, D.C., 1974)*, 117(1), 104–117. <https://europepmc.org/article/pmc/pmc1913706>

Wang, J., & Wang, X. (2012). Testing interactions involving latent variables. In *Structural Equation Modeling: Applications using mplus (Vol. 8, pp. 134–138)*. <https://doi.org/10.1002/9781118356258>

Webb, R., Ayers, S., & Rosan, C. (2018). A systematic review of measures of mental health and emotional wellbeing in parents of children aged 0–5. *Journal of Affective Disorders*, 225(May 2017), 608–617. <https://doi.org/10.1016/j.jad.2017.08.063>

- White, A., Castle, I.J., Chen, C.M., et al. (2015). Converging patterns of alcohol use and related outcomes among females and males in the United States 2002 to 2012. *Alcoholism: Clinical and Experimental Research*, 39(9), 1712–1726.
<https://doi.org/10.1111/acer.12815>.
- White, H. R., Johnson, V., & Buyske, S. (2000). Parental modeling and parenting behavior effects on offspring alcohol and cigarette use: A growth curve analysis. *Journal of Substance Abuse*, 12(3), 287–310. [https://doi.org/10.1016/S0899-3289\(00\)00056-0](https://doi.org/10.1016/S0899-3289(00)00056-0)
- Wiechelt, S.A., & Sales, E. (2005) The role of shame in women's recovery from alcoholism. *Journal of Social Work Practice in the Addictions*, 1(4), 101–16.
https://kb.osu.edu/bitstream/handle/1811/36922/12_wiechelt_paper.pdf?sequence=1.
- Wiechelt, S.A. (2007). The specter of shame in substance misuse. *Substance Use and Misuse*, 42(2–3), 399–409.
<http://www.tandfonline.com/doi/full/10.1080/10826080601142196>
- Willerton, E., Schwarz, R. L., MacDermid-Wadsworth, S. M. & Oglesby, M. S. (2011). Military fathers' perspectives on involvement. *Journal of Family Psychology*, 25(4), 521–530. <https://doi.org/10.1037/a0024511>
- Wills, T. A., & Shiffman, S. (1985). *Coping and Substance Use: A Conceptual Framework*. Orlando, FL: Academic Press.
- Wilsnack, R. W., & Wilsnack, S. C. (Eds.). (1997). *Gender and alcohol: Individual and social perspectives*. New Jersey: Rutgers Center of Alcohol Studies.
<https://psycnet.apa.org/record/1997-30249-000>
- Wilsnack, R. W., Wilsnack, S. C., Gmel, G., & Kantor, L. W. (2017). Gender differences in binge drinking prevalence, predictors, and consequences. *Alcohol Research: Current Reviews*, 39(1), 57-76.

https://www.researchgate.net/publication/327278033_Gender_Differences_in_Binge_Drinking

Wood, P. K., Sher, K. J., & Rutledge, P. C. (2007). College student alcohol consumption, day of the week, and class schedule. *Alcoholism: Clinical and Experimental Research*, 31(7), 1195–1207. <https://doi.org/10.1111/j.1530-0277.2007.00402.x>.

Woody, G. E., Urschel, H. C., & Alterman, A. (1992). The many paths to drug dependence. In M. Glantz & R. Pickens (Eds.), *Vulnerability to drug abuse* (pp. 491-507). Washington, DC: American Psychological Association.
<http://content.apa.org/books/10107-016>

World Health Organization (WHO). (2014). Management of Substance Abuse Unit. *Global status report on alcohol and health, 2014*. Geneva: World Health Organization.
https://www.who.int/substance_abuse/publications/alcohol_2014/en/

Wray, T. B., Simons, J. S., Dvorak, R. D., & Gaher, R. M. (2012). Trait-based affective processes in alcohol-involved “risk behaviors.” *Addictive Behaviors*, 37(11), 1230–1239. <https://doi.org/10.1016/j.addbeh.2012.06.004>

Yeung, W. J., Sandberg, J. F., Davis-Kean, P. E., & Hofferth, S. L. (2001). Children's time with fathers in intact families. *Journal of Marriage and Family*, 63(1), 136-154. <http://doi.wiley.com/10.1111/j.1741-3737.2001.00136.x>

Zack, M., Poulos, C., Fragopoulos, F., & Macleod, C. (2003). Effects of negative and positive mood phrases on priming of alcohol words in young drinkers with high and low anxiety sensitivity. *Experimental and Clinical Psychopharmacology*, 11(2), 176-185. <https://doi.org/10.1037/1064-1297.11.2.176>

Zebrak, K., & Green, K. (2016). Mutual Influences Between Parental Psychological Distress and Alcohol Use and Child Problem Behavior in a Cohort of Urban African

Americans. *Journal of Family Issues*, 37(13), 1869-1890.

<https://doi.org/10.1177/0192513X14553055>

Appendix A. Missing Data Analysis

Missing data is a common problem and many methods have been proposed to address concerns such as loss of power in detecting effects and potentially biased regression estimates and standard errors (i.e., significance tests) depending on which values are missing. Therefore, a missing data analysis was conducted following the types of missing data distinguished by Rubin (1976) as missing at random (MAR), missing completely at random (MCAR) and not missing at random (NMAR). First, I conducted a missing data pattern analysis to determine which variables had missing data greater than 10%. Among composite sum scores of each of the measures, there was incomplete data among 100% of the variables. Among participants, 78 (31.2%) of cases had incomplete data, and across all participants, there were 281 missing responses (11.24%). There were three variables with missing data greater than 10%, where baseline alcohol quantity was missing 26% (n=65), hazardous drinking frequency was missing 25.6% (n=64) and parenting behavior was missing 13.2% (n=33) of responses.

The self-reliance index (SRI) measure items indicated 7 of the 9 items with missing values greater than 10%; both the baseline CHAOS and parenting behavior measures indicated all items had missing data greater than 10% and the baseline AUDIT measure had 26% missing data on drinking quantity and 25.6% missing on hazardous drinking frequency. Meanwhile the baseline loneliness, drinking motives to cope, and psychological distress measures had no items missing data greater than 10%. At follow-up, CHAOS, parenting behavior, drinking motives to cope, and psychological distress

measures had no missing data greater than 10%; however, AUDIT measures indicated 23.2% missing data on hazardous drinking frequency and 23.2% missing data on drinking quantity.

Next, I computed a new variable for each item with missing data (>10%) that indicated (0,1) whether data are missing or present and then tested correlations and group comparisons (Little, 1988). If none of the variables are related to missingness then the data are suggested to be MCAR (Allison, 2001) whereas NMAR is when variables are related to missingness. Meanwhile, researchers claim there is no way to test whether data are MAR; however, considering attrition over time, it may be possible to support likelihood of the data as MAR by testing whether missingness is associated with the value of the variable that has present values at an earlier time point (Little, 1995). Accordingly, my next step was to test the likelihood that values are MAR by exploring whether the value of each variable at Time 1 (i.e., with complete data) was associated with the missingness for that variable at Time 2 for items missing data greater than 10%. Then, I tested this relationship in reverse, where missingness of the variable at time one was compared with the full data at time two. Finally, I compared results from each to determine the nature of missing data that would assist determinations for analytic approach in the mediation and moderated mediation models. Comparing results from each of the correlations tables, findings show no empirical support for associations with missingness (Table 3S and 4S; Supplement 3).

Together, these findings support the likelihood that this data is closer to meeting MAR assumption. This supports using full maximum likelihood (FIML; Dempster, Laird,

& Rubin, 1977), estimation techniques, which uses a structural modeling approach and produces superior estimates compared with listwise deletion and the other conventional methods as long as data are at least MAR (Enders, 2010; Schafer & Graham, 2002).

Appendix B. Model Modifications

At baseline, the CHAOS latent variable (LV) model chi-square was significant, $\chi^2(5) = 34.637$, $p < .001$, $SF_{MLR} = 1.17$, and alternative fit indices similarly indicated marginally unacceptable fit, $CFI = .810$, $SRMR = .073$, $RMSEA = .182$, 90%CI [.128, .241], $p < .001$ (Hu & Bentler; 1999). Similarly, the distress LV indicated less than adequate model fit, $\chi^2(9) = 76.99$, $p = .000$, $SF_{MLR} = 1.201$, $CFI = .883$, $SRMR = .070$, $RMSEA = .180$, 90%CI [.144, .218], $p = .000$. Modifications to both the CHAOS and distress LV models were explored due to significant correlated errors related to how the items were worded (Tomás & Oliver, 1999). Theoretically, items in the CHAOS measure are significantly related to directly observed measures of environmental confusion (Matheny, et al., 1995). Likewise, items in the distress measure are, in theory, each related to anxiety symptomology (American Psychiatric Association, 2013). In addition, data driven correlated errors were evident. For the CHAOS model, items “You can’t hear yourself think in our home” and “It’s a real zoo in our home” has large, shared measurement variance, $M.I. = 22.65$, $E.P.C. = .418$, $Std\ E.P.C = .418$, $Std_{YX}\ E.P.C. = .600$. Similarly, in the distress model, items “Feel restless or fidgety” and “Feel nervous” had large, shared measurement variance, $M.I. = 29.88$, $E.P.C. = .244$, $Std\ E.P.C = .244$, $Std_{YX}\ E.P.C. = .420$.

A common approach in this situation is to free the restriction that leads to the largest reduction in the chi-square estimate, and to repeat this process with the revised model until an adequate fit is developed (see Bentler & Chou, 1987); though,

recommendations suggest limiting the number of modifications to one or two (Newsom, 2020) as modifications can lead to development of incorrect models (MacCallum, 1986). Thus, a CFA was conducted for the CHAOS LV implementing the suggested correlation between the above mentioned items, where the model chi-square remained significant, $\chi^2(4) = 14.265$, $p < .01$, $SF_{MLR} = 1.198$, but the alternative fit indices suggest improved model fit, $CFI = .934$, $SRMR = .055$, $RMSEA = .120$, $90\%CI [.057, .190]$, $p < .05$. Likewise, a subsequent distress CFA was conducted implementing the respective correlation modification, and the model chi-square also remained significant, $\chi^2(4) = 14.265$, $p < .01$, $SF_{MLR} = 1.198$, with alternative fit indices suggest improved model fit, $CFI = .934$, $SRMR = .055$, $RMSEA = .120$, $90\%CI [.057, .190]$, $p < .05$.

These findings were also found when the same models were tested using the follow-up survey data; however, caution is still warranted as replication with an independent sample and cross validation are important for building confidence in the new specification (Bollen, 1989).