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Relations of Negative and Positive Work Experiences to Employee Alcohol Use: Testing the Intervening Role of Negative and Positive Work Rumination

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Abstract

This study tested a model linking work experiences to employee alcohol use. The model extended past research in three ways. First, it incorporated both negative and positive work experiences. Second, it incorporated a previously unexplored cognitive intervening process involving negative and positive work rumination. Third, it incorporated several important dimensions of alcohol use (heavy use, workday use, and after work use). Data were collected from a national probability sample of 2,831 U.S. workers. Structural equation modeling revealed that the conceptual model provided an excellent fit to the data. Negative work experiences were positively related to negative work rumination, which was positively related to heavy alcohol use, workday alcohol use, and after work alcohol use. Positive work experiences were positively related to positive work rumination, which was negatively related to heavy alcohol use and after work alcohol use, but was unrelated to workday alcohol use. The study also provided initial support for the psychometric properties and construct validity of the Negative and Positive Work Rumination Scale (NAPWRS).

Keywords

Work experiences; work stress; negative work rumination; positive work rumination; alcohol use

Alcohol use in the workforce use can undermine employee health and productivity, and increase health care costs (Frone, 2009, 2013; Normand, Lempert, & O'Brien, 1994; Roman & Blum, 1995). Especially relevant is heavy alcohol use off the job, alcohol use during the workday, and alcohol use after work. Among the U.S. workforce, the 12 month prevalence rates are 26.1% for heavy drinking (5 or more drinks per day), 29.5% for drinking to intoxication, 22.7% for drinking to the point of experiencing a hangover, 7.0% for drinking during the workday, and 37.8% for initiating alcohol use within two hours of leaving work (Frone, 2013). Furthermore, among employees who initiate alcohol use right after work, 5.6% report consuming 4 or more drinks per occasion (Frone, 2013). It is not surprising, therefore, that researchers and those formulating social policy are interested in the factors that influence employee alcohol use.

Because most adults spend a majority of their waking time in formal employment, it is important from a public health perspective to develop a better understanding of the potential impact of the work environment on employee alcohol use. For instance, it is widely believed that exposure to negative work experiences (i.e., work stressors) lead to elevated levels of employee alcohol use, which has been referred to as work stress-induced alcohol use (Frone, 1999, 2013). In fact, because of this strong and theoretically justifiable belief, the single largest focus of research on the workplace and employee drinking has been on negative work experiences (Frone, 1999, 2013). However, this research has produced a body of inconsistent results and has been limited in several ways. First, many studies only use overall, context-free, assessments of alcohol use. Incorporating assessments of alcohol use in temporal contexts that can affect productivity, such as use during and following the workday, would broaden research findings in this area (Frone, 1999, 2008).

Second, most studies have explored the overall relation between negative work characteristics and employee alcohol use. By comparison, relatively little attention has been paid to intervening variables. The inclusion of intervening variables has two benefits. First, they help to explain how negative work experiences might lead to alcohol use. Second, modeling intervening variable might provide a more consistent link between negative work experiences and alcohol use (Frone, 1999). As shown by Kenny and Judd (2014), failing to model the intervening variable(s) connecting an independent and dependent variable may decrease the likelihood of finding evidence that the two variables are significantly related. Of the studies that have explored indirect effects between negative work experiences and alcohol use, attention has focused almost exclusively on some form of negative affect (e.g., depression, anxiety, job dissatisfaction) as the intervening variable.

Consistent with general tension-reduction (Conger, 1956) and affect regulation models (Cooper, Frone, Russell, & Mudar, 1995) of alcohol use, prior studies have explored the general proposition that negative work experiences cause elevated negative affect, which then causes elevated levels of drinking to reduce the negative affect. Although some research has found that negative work experiences were indirectly related to alcohol use via negative affect (e.g., Frone, Barnes, & Farrell, 1994; Vasse, Nijhuis, & Kok, 1998; Wolff, Rospenda, Richman, Liu, & Milner, 2013), several other studies have failed to support the intervening role of negative affect (e.g., Armeli, Tennen, Affleck, & Kranzler, 2000; Bamberger & Bacharach, 2006; Cooper, Russell, & Frone, 1990; Kawakami, N., Araki, S., Haratani, T., & Hemmi, 1993). One reason for these inconsistent findings is that the relation between negative affect and alcohol use may be conditional. For instance, this relation may be strongest among individuals who hold strong outcome expectancies regarding the tension reduction properties of alcohol (e.g., Wolff et al., 2013).

Although additional research should explore potential boundary conditions affecting the indirect relation between negative work experiences and alcohol use via negative affect (Frone, 1999; Wolff et al., 2013), it would be useful for theory development and practical reasons to begin exploring additional intervening variables that may link work experiences to alcohol use. For example, Armeli et al. (2000, p. 868) stated that individuals may drink “not only to reduce negative affect caused by stressful situations, but also to reduce negative thoughts associated with such events. This would be consistent with theoretical models

positing the anticipated dampening effect of alcohol on cognitive processes such as attention and memory.”

Finally, past research has focused almost exclusively on negative work experiences and intervening processes as a potential risk factor for elevated alcohol use. Thus, the possibility that positive work experiences and intervening processes might have a protective influence leading to reduced alcohol use has been largely unexplored. In an effort to more fully understand how the work environment might influence employee alcohol use, it would be useful for research to explore both negative and positive work experiences.

The central goal of the present study, therefore, is to extend past research on work experiences and alcohol use by developing and testing a model that addresses each of the three issues discussed earlier. The conceptual model is depicted in Figure 1 and is comprised of two indirect paths. The model incorporates (a) both negative and positive work experiences, (b) previously unexplored cognitive intervening variables involving negative and positive work rumination, and (c) several dimensions of employee alcohol use. Below, I begin by summarizing the general literature on rumination and alcohol use, and then I discuss the two indirect paths comprising the hypothesized model.

General Literature on Rumination and Alcohol Use

Rumination can be defined generally as “a class of conscious [repetitive] thoughts that revolve around a common instrumental theme and that occur in the absence of immediate environmental demands requiring the thoughts” (Martin & Tesser, 1996, p. 7). Although this general definition does not restrict the valence of the instrumental theme, rumination typically has been cast as a negative process that involves repetitive thoughts regarding an experienced negative event or mood (Watkins, 2008; Whitmer & Gotlieb, 2013). For instance, Whitmer and Gotlieb (2013) defined rumination as “repetitive thinking about negative information” (p.1036). Likewise, Brosschot, Gerin, and Thayer (2006) defined perseverative cognition broadly as “the repeated or chronic activation of the cognitive representation of one or more stressors” (p. 114). As a form of perseverative cognition, rumination represents prolonged cognitive activation of stressors already experienced (e.g., Brosschot, Pieper, & Thayer, 2005; Brosschot et al., 2006).

Consistent with this general focus on negative perseverative cognition, research has begun to explore the relation of negative rumination to alcohol use. It has been hypothesized that alcohol may be used strategically to reduce negative rumination (Caselli, Bortolai, Leoni, Rovetto, & Spada, 2008; Caselli et al., 2010; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). A theoretical underpinning for this hypothesis can be developed from two literatures. First, the literature on rumination discussed earlier suggests that negative rumination represents an unpleasant and undesirable cognitive process because it prolongs exposure to a negative experience. Therefore, individuals should be motivated to reduce or eliminate the negative perseverative thoughts, even if only temporarily. Second, research on the effects of alcohol suggests that it can interfere with the cognitive, especially attentional, processes that would be involved in rumination (e.g., Frone, 2013; Glencross, 1990). For example, consider the following scenario presented by Steele and Josephs (1988, p. 196):

“It is not a sudden feeling. It slips up on you. The host hands you the glass. Your tongue, mouth, and throat experience a familiar flavor, a strong, attention-grabbing flavor, one that seems capable of altering your chemistry. You move on, sipping this flavor, talking to friends, acquaintances. Shortly, your immediate experience begins to take on a certain intensity. The present seems to move to the foreground of awareness. Thoughts about the past, the future, problems, and anxieties recede in awareness. They become more difficult to retrieve and hang onto. It is the present—the conversations, the salient events and thoughts—that reigns over awareness. The sipping continues, as if to further intensify the present, to further draw out its distinction from the rest of experience, to leave the rest behind. Like being on a raft that has shoved off from the bank, there is a lifting feeling of having broken away.”

This poignant description highlights alcohol’s ability to loosen the grip of perseverative thoughts regarding past experiences and events. Applying Steele and Josephs’ (1988, 1990) attention-allocation model, alcohol may reduce negative rumination because it reduces a person’s attentional capacity. Specifically, “alcohol can affect a variety of psychological stresses through its ability to screen out of awareness, in conjunction with activity, a common source of these states, that is, the thoughts that cause them” (Steele and Josephs, 1990, p. 929). However, alcohol’s ability to reduce ongoing negative ruminative will be strongest when consumed in the presence of a distraction. As blood alcohol levels rise and an individual’s attentional capacity decreases, a person’s attention will be directed to the most salient and immediate cues in the environment. A number of laboratory studies looking at changes in mood and memory performance support the general prediction that alcohol reduces attentional capacity, and by doing so can reduce anticipatory levels of stress (e.g., anxiety) in the presence of a distracting task (Erblich & Earleywine, 1995; Steele & Josephs, 1988, 1990). The requirement for some form of distraction might seem to be a limiting factor regarding the ability of alcohol to reduce negative rumination. However, Sayette (1999) pointed out that, in naturalistic settings, most people drink in situations that include distractions. These distractions can include conversing with a friend or stranger, listening to music, watching television, and reading email or surfing the internet on a smart phone.

Taken together, the literatures on negative rumination and alcohol’s effect on attentional capacity suggest that negative experiences can trigger negative perseverative thoughts, which may motivate the use of alcohol in an effort to escape the negative ruminative process. Consistent with these expectations, a longitudinal study by Michl, McLaughlin, Shepard, and Nolen-Hoeksema (2013) found that negative life events at T1 led to increased levels of depressive rumination at T2. Further, ruminating with regard to negative emotions has been found to predict alcohol use, even after controlling for level of negative affect, in cross-sectional (Caselli et al., 2008) and longitudinal studies (Caselli et al., 2010; Nolen-Hoeksema et al., 2007; Nolen-Hoeksema & Harrell, 2002). In addition, using data from a two-wave panel study, Nolen-Hoeksema et al. (2007) found that T1 depressive rumination predicted T2 alcohol use after controlling for T1 alcohol use, though earlier alcohol use did not predict later rumination. Although these results collectively suggest that negative life experiences can trigger a negative ruminative process that leads to alcohol use to escape the rumination, no single study has directly tested the full indirect relation in a single sample.

Negative Work Experiences, Negative Work Rumination, and Alcohol Use

In addition to the broader social and clinical psychology literatures on negative rumination described earlier, a nascent literature on work-related ruminative processes is developing (e.g., Berset, Elfering, Luthy, & Semmer, 2011; Cropley, Michalianou, Pravettoni, & Milward, 2012; Fritz & Sonnentag, 2006). For the present study, negative work rumination refers to preoccupation with and repetitive thoughts focused on negative work experiences that may extend beyond the workday. Building from the general literature on negative rumination, these repetitive thoughts about negative work experiences represent an unpleasant and undesirable cognitive process because they prolong exposure to the negative work experience. Therefore, as shown in Figure 1, it is expected that negative work experiences trigger negative work rumination, which then leads to increased alcohol use in an effort to escape the negative ruminative process.

Although no work rumination research has assessed alcohol use, recent research supports the first stage of the indirect effect by showing that negative work experiences and events predict higher levels of negative work rumination or reflection. For example, a cross-sectional study by Berset et al. (2011) reported that two work stressors (time pressure and effort-reward imbalance) predicted higher levels of negative work rumination. A limitation of this study was that the authors failed to control for potential confounding variables, such as negative emotionality, or the frequency of experiencing negative emotions. However, a daily diary study by Volmer, Binnewies, Sonnentag, and Niessen (2012) found that reports of conflict with customers during the workday predicted higher levels of negative work reflection that occurred after work during leisure time.

Based on findings from the general and work-related rumination literatures, the present study explores the indirect relations of three negative work experiences to employee alcohol use via negative work rumination. The following specific hypotheses are proposed:

Hypothesis 1: Work demands, role demands, and emotionally unpleasant work will be positively related to negative work rumination.

Hypothesis 2: Negative work rumination will be positively related to heavy alcohol use, workday alcohol use, and after work alcohol use

Hypothesis 3: Work demands, role demands, and emotionally unpleasant work will be positively and indirectly related to heavy alcohol use, workday alcohol use, and after work alcohol use via negative work rumination.

Positive Work Experiences, Positive Work Rumination, and Alcohol Use

Past research has focused almost exclusively on the relation of negative work experiences to alcohol use. Thus, the possibility that positive work experiences might be a protective factor leading to lower levels of alcohol use has rarely been considered. Only two daily process studies have looked at this issue using small convenience samples ($Ns = 46$ & 83). Both studies found evidence of a negative relation between positive work experiences and alcohol use (Armeli et al., 2000; Carney, Armeli, Tennen, Affleck, & O'Neil, 2000). Neither of these two studies, however, were able explain this negative relation. In the Armeli et al.

(2000) study, positive affect failed to explain the negative relation between positive work experiences and alcohol use, and in the Carney et al. (2000) study, perceived stress did not explain the relation.

There also has been a relative lack of attention to positive ruminative processes (Watkins, 2008). As noted earlier, the predominant assumption has been that rumination represents a negative cognitive process, mostly because the a priori focus of past research has been on repetitive thoughts about negative experiences or moods. However, Martin and Tesser's (1996) general definition of rumination, which was presented earlier, does not presume that the instrumental theme serving as the focus of repetitive thoughts must be negative, and they suggest that it may be positive. In addition, Watkins (2008) noted that rumination may have constructive outcomes as well as unconstructive outcomes, and that one determining factor is the valence of the events and thought content that are the focus of rumination.

Therefore, the conceptual model in Figure 1 incorporates positive work rumination as a cognitive process linking positive work experiences to employee alcohol use. For the present study, positive work rumination refers to preoccupation with and repetitive thoughts focused on positive work experiences that may extend beyond the workday. In contrast to negative work rumination, repetitive thoughts about positive work experiences represent a pleasant and desirable cognitive process because they prolong exposure to the positive experiences and events. Consequently, individuals should be motivated to maintain and prolong positive perseverative thoughts.

As described earlier, Steele and Josephs' (1988, 1990) attention-allocation model of alcohol use was developed to help explain how alcohol might be used instrumentally to reduce negative perseverative thoughts. Although speculative, the attentional-allocation model also may provide an explanation for a relation between positive work rumination and alcohol use. The attention-allocation model more generally predicts that the ability of alcohol to reduce attentional capacity will dampen perseverative thoughts regardless of their valence (negative or positive). Therefore, individuals involved in positive perseverative thoughts may be less likely to engage in alcohol use so as not to dampen these positive cognitions.

Given the conceptualization of positive work rumination and alcohol's ability to interfere with such cognitive processes, it is expected that positive work experiences trigger positive work rumination, which then leads to lower levels of alcohol use in order to maintain and extend the positive perseverative thoughts. However, only one study has explored the first stage relation between positive work experiences and positive work-related rumination. Sonnentag and Grant (2012) found that firefighters and rescue workers who perceived that they had a positive impact on the lives of others in a given work day reported more positive work reflection after work. No research has explored the second stage relation between any form of positive rumination and alcohol use. Therefore, the present study explores the indirect relations of three positive work experiences to employee alcohol use via positive work rumination. The following specific hypotheses are proposed:

Hypothesis 4: Distributive justice, workplace friendship formation, and emotionally pleasant work will be positively related to positive work rumination.

Hypothesis 5: Positive work rumination will be negatively related to heavy alcohol use, workday alcohol use, and after work alcohol use.

Hypothesis 6: Distributive justice, workplace friendship formation, and emotionally pleasant work will be negatively and indirectly related to heavy alcohol use, workday alcohol use, and after work alcohol use via positive work rumination.

Method

Sample and Study Design

There were 2,975 U.S. workers who took part in a telephone survey called the National Survey of Work Stress and Health. The population from which the study participants were randomly sampled was all noninstitutionalized adults aged 18 to 65 who were employed in the civilian labor force and residing in households in the 48 contiguous United States and the District of Columbia. Data were collected by 29 extensively trained interviewers using computer-assisted telephone interviewing (CATI) stations from December 2008 to May 2012. Of all selected eligible individuals, 47% participated in the study. On average, the interview lasted 55 minutes and participants were paid \$25.00 for their time. Of the 2,975 study participants, the present analyses were restricted to the 2,831 workers who had complete data on all of the variables used in this report.

Sampling Weights

For all analyses, the participants are weighted according to standard procedures for sample survey data to generalize to the target population defined earlier (e.g., Korn and Graubard, 1999; Levy and Lemeshow, 1999). The sampling weights account for differences in the initial selection probability for the reached telephone number, the number of different telephone lines through which the household could be reached, and the number of eligible adults in the household. The weights further adjust for differential nonresponse and are poststratified to population totals obtained from the Current Population Survey (Bowler and Morisi, 2006) for the months during which the present study was in the field.

Participant Characteristics

The respondent (i.e., population) characteristics are described with weighted means and percentages. Of the participants, 53.0% were men. Furthermore, 69.4% were White, 12.7% were Black, 8.7% were Hispanic, and 9.2% were of other racial/ethnic makeup. The average age of the participants was 41 years. In terms of highest level of education, 0.4% did not attend high school; 3.7% attended high school but did not graduate; 18.9% graduated from high school or obtained a GED; 3.1% attended trade, technical, or vocational training beyond high school; 19.5% attended some college; 9.0% received an Associate's degree; 23.6% received a Bachelor's degree; 3.0% attended some graduate school; 13.80% received a Master's degree; and 4.8% received a doctoral level degree. Median family income was \$68,000. In terms of the 10 intermediate aggregated occupation groups based on the 2000 Standard Occupation Classification codes (U.S. Office of Management and Budget, 2000), 15.2% were in management/business/financial occupations; 31.9% were in professional

occupations; 14.9% were in service occupations; 8.0% were in sales occupations; 13.5% were in office/administrative occupations; 0.4% were in farming/fishing/forestry occupations; 3.1% were in construction/extraction occupations; 3.5% were in installation/maintenance/repair occupations; 3.5% were in production occupations; and 6.1% were in transportation/material moving occupations. On average, the participants worked 40.6 hours per week and held their present job for 5.9 years.

Measures

Descriptive statistics for and correlations among all study variables are provided in Table 1. Each of the variables is describe below.

Work demands—Overall work demands was assessed with six items commonly used to represent workload and work pace (Hurrell & McLaney, 1988; Lisle et al., 1998; Spector & Jex, 1998). The three workload items were: *During the past 12 months, how often did you have too little time to get things done?*; *During the past 12 months, how often did you have too much work to do?*; and *During the past 12 months, how often did you have to do more work than you can do well?* The three work pace items were: *During the past 12 months, how often did your job require you to work under time pressure?*; *During the past 12 months, how often did your job require you to hurry your work?*; and *During the past 12 months, how often did your job require you to work very fast?* Response anchors for each item ranged from 0 (*never*) to 4 (*everyday*). Internal consistency reliability was .86 for workload and .80 for work pace.

Role demands—Overall role demands was assess with items assessing role conflict and role ambiguity. Role conflict was assessed with three items—two items from Peterson et al. (1994) and one item from House, Schuler, and Levanoni (1983). Role ambiguity was assessed with four items developed by House et al. (1983). The three role conflict items were: *I often receive conflicting requests from two or more people at work*; *I often have to meet the conflicting demands from various people at work*; and *I often have to deal with conflicting demands at work*. The four role ambiguity items were: *My work responsibilities are clearly defined*; *My job has clear goals and objectives*; *I know what my work responsibilities are*; and *I know exactly what is expected of me at work*. Response anchors ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Internal consistency reliability was .85 for role conflict and .82 for role ambiguity.

Emotionally unpleasant work—The extent to which a person's job exposed them to emotionally unpleasant and disturbing situations was assessed with two items developed for this study: *During the past 12 months, how often did your job put you in emotionally unpleasant or disturbing situations?*; and *During the past 12 months, how often was the work you do emotionally unpleasant or disturbing?* Response anchors ranged from 0 (*never*) to 4 (*everyday*). Internal consistency reliability was .80.

Distributive justice—Perceptions of distributive justice were assessed with four items adapted from Colquitt (2001): *My rewards reflect the effort I put into my work*; *My rewards are appropriate for the work I have completed*; *My rewards reflect what I have contributed*

to the organization; and *My rewards are justified given my performance*. Response anchors ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Internal consistency reliability was .94.

Friendship formation—The extent to which respondents formed strong friendships at work was assessed with three items—one item from Nielson, Jex, and Adams (2000) and two items developed for this study. The items were: *I have formed strong friendships at work*; *I feel close to some of the people I work with*; and *I work with people I consider close friends*. Response anchors ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Internal consistency reliability was .89.

Emotionally pleasant work—The extent to which a person's job exposed them to emotionally pleasant and enjoyable situations was assessed with two items developed for this study: *During the past 12 months, how often did your job put you in emotionally pleasant or enjoyable situations?*; and *During the past 12 months, how often was the work you do emotionally pleasant or enjoyable?* Response anchors ranged from 0 (*never*) to 4 (*everyday*). Internal consistency reliability was .77.

Work rumination—To assess negative and positive ruminative thoughts related to work, the Negative and Positive Work Rumination Scale (NAPWRS) was developed for this study.

This measure was comprised of eight items—four items for negative work rumination and four items for positive work rumination. The items are presented in the Appendix and more detail on the measure can be found in the supplemental material file. Internal consistency reliability was .91 for negative work rumination and .86 for positive work rumination.

Alcohol use—Three dimensions of alcohol use were assessed with items used in prior research (e.g., Frone, 2013). Heavy drinking was represented by three items assessing the frequency over the past 12 months of drinking five or more drinks within two hours [if male]/four or more drinks within two hours [if female]; drinking to intoxication; and drinking enough to experience a hangover. Workday drinking was assessed with two indicators—one indicator represented the frequency during the past 12 months of drinking while working, during lunch, or during other breaks and the other indicator represented the typical number of drinks consumed when drinking during the workday. After work drinking was assessed with two items—one item assessed the frequency during the past 12 months of commencing drinking within two hours of leaving work and the other item assessed the typical number of drinks consumed when drinking after work. Response anchors for the five alcohol items assessing frequency of drinking ranged from 0 (*never*) to 4 (*everyday*). The two items assessing quantity of alcohol consumed were open-ended. Internal consistency reliability was .82 for heavy drinking, .89 for workday drinking, and .81 for after work drinking.

Covariates—Several covariates were included in the analyses to control for possible confounding and spurious relations between work experiences, work rumination, and alcohol use. The demographic covariates were gender (0 = women, 1 = men), race (0 = White, 1 = minority), age (in years), years of formal education (10 ordinal response options),

total family income, and working in a human services-related occupation (0 = no, 1 = yes). Human services-related occupations, defined broadly, included social workers, teachers, lawyers, physicians, nurses, firefighters, police officers, and emergency medical technicians.

In addition to these demographic variables, the analyses controlled for negative and positive affectivity, as well as negative and positive affect. Negative affectivity was assessed with seven items developed by Denollet (2005). Example items are: *I take a gloomy view of things* and *I am often down in the dumps*. Positive affectivity was assessed with six items developed by Tellegen (1982). Example items are: *Most days I have moments of real fun or joy* and *Everyday interesting things happen to me*. The response anchors for each of the affectivity items ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). Negative and positive affect was assessed by asking how often the participants experienced each of nine negative (*nervous, hostile, depressed, anxious, furious, sad, worried, angry, and gloomy*) and nine positive (*joyful, lively, confident, happy, active, proud, cheerful, energetic, and strong*) emotions during the prior 12 months. The emotion adjectives were taken from the Brunel mood scale (Terry & Lane, 2003) and the PANAS-X (Watson & Clark, 1994). The response anchors for the emotion adjectives ranged from 0 (*never*) to 3 (*often*). Internal consistency reliability estimates were .83 for negative affectivity, .86 for positive affectivity, .83 for negative affect, and .87 for positive affect.

Data Analysis

The latent variable structural model shown in Figure 2 was analyzed using Mplus 7 software (Muthen & Muthen, 2012). A robust weighted least squares estimator (WLSMV) was used to accommodate the sampling weights and the mix of continuous and ordinal manifest indicator variables (Asparouhov, 2005; Muthen & Muthen, 2012). Although not shown in the figures (but see Table 4), the ten covariates were treated as correlated exogenous variables and each covariate predicted each of the eleven latent variables representing negative and positive work experiences, negative and positive work rumination, and alcohol use. Model fit was assessed with the χ^2 statistic, the comparative fit index (CFI), Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). Based on recommendations by Hu and Bentler (1989), the following cut-offs were used to indicate adequate model fit: CFI and TLI > .95 and RMSEA < .06. Chi-square difference testing of nested models was accomplished using a robust chi-square difference test (DIFFTEST) developed for mean and variance adjusted weighted least squares (WLSMV) estimation (Asparouhov & Muthen, 2006). Finally, because the sampling distribution of indirect effects (i.e., a product of two coefficients) is nonnormal, the significance of the indirect effects was based on bias-corrected bootstrap confidence intervals using 5,000 bootstrap samples (e.g., Edwards & Lambert, 2007; Preacher, Rucker, & Hayes, 2007). Bootstrapping also was used to obtain the standard errors for the reported standardized factor loadings and path coefficients.

Results

Overall Model Fit

The hypothesized conceptual model, which was the model shown in Figure 2 without a path from emotionally unpleasant work to positive work rumination, showed an excellent fit to the data: $\chi^2 (564, N = 2,831) = 882.60, p < .001$; CFI = .995; TLI = .994; and RMSEA = .014 (90% CI [.012, .016]). Nonetheless, the hypothesized model contained 24 paths constrained to equal zero—three direct paths from negative work experiences to positive work rumination, three direct paths from positive work experiences to negative work rumination, and 18 direct paths from the six work experiences variables to the three alcohol outcomes. To test whether or not these 24 constraints were reasonable, the fit of the hypothesized model was compared to a saturated model that freed these additional 24 paths. A robust chi-square difference test showed that freeing these 24 constraints led to a significant reduction in the model chi-square ($\chi^2 [24, N = 2,831] = 49.47, p < .01$). An examination of the additional parameter estimates suggested that a path from emotionally unpleasant work to positive work rumination should be freed in the conceptual model. After freeing this single path, a robust chi-square difference test showed that the revised conceptual model fit better than that hypothesized conceptual model ($\chi^2 [1, N = 2,831] = 17.28, p < .01$). The fit of the revised conceptual model was also compared to the saturated model to see if it was reasonable to constrain the remaining 23 nonhypothesized paths to zero. The nonsignificant robust chi-square difference test supported these 23 constraints ($\chi^2 [23, N = 2,831] = 32.26, ns$). Therefore, the revised conceptual model shown in Figure 2 was retained, and showed an excellent overall fit to the data: $\chi^2 (563, N = 2,831) = 841.42, p < .001$; CFI = .996; TLI = .995; and RMSEA = .013 (90% CI [.011, .015]).

Parameter Estimates

The parameter estimates for the structural equation model are presented in Table 2 to 5 and Figure 2. Table 2 presents the factor loadings for each of the latent variables. These results indicate that the 30 indicator variables loaded highly and significantly on their respective latent variable. Table 3 presents the correlations among the latent negative and positive work experience variables, negative and positive work rumination variables, and the alcohol use variables. The results show that within the three sets of latent variables, the variables were generally significantly correlated. Table 4 presents the standardized regression coefficients relating the covariates to each of the 11 latent variables comprising the conceptual model. Several noteworthy patterns can be observed. Compared with women, men reported more negative work experiences, fewer positive work experiences, less negative rumination, and higher levels of alcohol use. Compared with White employees, minority employees reported fewer positive work experiences, less negative rumination, and lower levels of alcohol use. Compared with low levels of education, high levels of education were related to more negative work experiences, fewer positive work experiences, more negative rumination, and higher levels of workplace and after work alcohol use, though lower levels of heavy alcohol use. Compared with employees not working in human services-related occupations, employees in human services-related occupations reported fewer role demands but more emotionally unpleasant work; lower distributive justice but more friendship formation and more emotionally pleasant work; and lower levels of alcohol use. Negative affectivity and

negative affect were generally positively related negative work experiences, negative work rumination, and higher levels of alcohol use. In contrast, positive affectivity and positive affect were general positively related to positive work experiences and positive work rumination, and unrelated to alcohol use.

Figure 2 presents the standardized estimates for the direct relations that comprised the revised conceptual model, and Table 5 presents the indirect effects between the work experience variables and the alcohol use outcomes. After adjusting for the covariates, the results in Figure 2 support Hypotheses 1 and 2 because all three negative work experiences were significantly and positively related to negative work rumination, which was positively related to all three alcohol use outcomes. The results in Table 5 partially support Hypothesis 3 by showing that all indirect relations from three negative work experiences variables to heavy alcohol use and after work alcohol use via negative work rumination were significant and positive. However, of the three negative work experience variables, only emotionally unpleasant work was positively and indirectly related to workday alcohol use via negative work rumination. Finally, the results also support a negative relation between emotionally unpleasant work and positive work rumination (Figure 2), as well as a significant and positive indirect effect of emotionally unpleasant work to heavy alcohol use and after work alcohol use via reduced positive work rumination (Table 5).

The results in Figure 2 support Hypothesis 4 by showing that the three positive work experiences variables were positively related to positive work rumination. The results partly support Hypothesis 5 in that positive work rumination was negatively related to heavy alcohol use and after work alcohol use, but it was not related to workday alcohol use. The results in Table 5 partially support Hypothesis 6 by showing that all indirect relations from the three positive work experience variables to heavy alcohol use and after work alcohol use were significant and negative. Consistent with the nonsignificant relation between positive work rumination and workday alcohol use shown in Figure 2, the results in Table 5 do not support negative indirect relations from the positive work experiences variables to workday alcohol use via positive work rumination.

Discussion

The goal of this study was to develop and test a conceptual model linking negative and positive work experiences to employee alcohol use via negative and positive work rumination, respectively. The present study both supports and extends prior research and theorizing in several ways. First, the findings from the first stage of the model show that several dimensions of negative work experiences were positively related to negative work rumination and several dimensions of positive work experiences were positively related to positive work rumination. These results support a developing literature exploring the predictors of negative (Berser et al., 2011; Volmer et al., 2012) and positive (Sonnetag & Grant, 2012) work-related ruminative processes. Moreover, because this was the first study to assess both positive and negative work experiences and both negative and positive work rumination, it extends past research by showing that there is little evidence of cross-prediction from negative work experiences to positive work rumination and from positive work experiences to negative work rumination.

Second, the results from the second stage of the model show that negative work rumination was positively related and positive work rumination was negative related to both heavy and after work alcohol use. Because this was the first study to explore the relation of work rumination to employee alcohol use, these findings extend the developing work rumination literature. The present results also support the findings from the general rumination literature, which showed that ruminating about negative emotions is positively related alcohol use (Caselli et al., 2008, 2010; Michl et al., 2013; Nolen-Hoeksema et al., 2007; Nolen-Hoeksema & Harrell, 2002). This study extends the general rumination literature by showing for the first time that positive rumination may be a protective factor associated with lower levels of alcohol use.

Third, taken together, the first and second stage results support two indirect effects from work experiences to employee alcohol use. Negative work experiences may trigger perseverative thoughts about the negative work experiences, which then leads to alcohol use in an effort to escape the unpleasant ruminative process. In contrast, positive work experiences may trigger perseverative thoughts about the positive work experiences, which then leads to an avoidance of alcohol use in order to maintain the pleasant ruminative process. This pattern of findings support previous theoretical arguments that negative work experiences are a potential risk factor for increased employee alcohol use (for reviews, see Frone, 1999, 2013) and support two small daily process studies (Armeli et al., 2000; Carney, et al., 2000) suggesting that positive work experiences may represent a potential protective factor resulting in lower levels of alcohol use. Collectively, these findings support the usefulness of the general rumination literature (for reviews, see Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Watkins, 2008; Whitmer & Gotlieb, 2013) in terms of helping to explain how work experiences may influence employee alcohol use.

Implications

The relations comprising the conceptual model were supported even after controlling for negative and positive affectivity and negative and positive affect. This indicates that negative and positive work rumination represent cognitive outcomes that are distinguishable from negative and positive affect. Therefore, work-specific and more general affect regulation models of alcohol use (e.g., Cooper et al., 1995; Frone et al., 1994; Wolff et al., 2013) need to be expanded to include drinking to regulate negative and positive perseverative cognitions.

The findings also suggest that it may not be sufficient to reduce or eliminate negative work conditions in an effort to reduce employee alcohol misuse. Interventions also need to focus on developing and expanding positive work experiences and characteristics. This conclusion is consistent with recommendations from Parker's (2014) review of the work design literature in terms of promoting employee health generally. Also, even if alcohol use is successful in dulling negative work rumination, it may only provide a temporary interruption and it comes with its own negative effects on health and productivity. Thus, interventions should be employed to help employees manage and reduce negative work rumination. A review by Querstret and Cropley (2013) of 19 intervention studies suggests that mindfulness-based and cognitive behavioral interventions may be effective and deserve

further consideration. The present results also suggest that it may be beneficial to promote positive work rumination to improve employee health and health-related behaviors. For example, Seligman and colleagues (Seligman, Steen, Park, & Peterson, 2005) developed the *Three Good Things in Life* intervention that requires individuals to write down three things that went well that day, as well as what caused them. This intervention encourages people to reflect and ruminate about the good things that have happened to them every day. Research suggests that this exercise increases happiness and reduces depression (e.g., Seligman et al., 2005). Applying this intervention to the workplace, where individuals write down up to three positive work experiences each day, may increase positive work rumination over time, and lead to reductions in alcohol use.

Strengths and Weaknesses

The present results should be interpreted within the context of the strengths and weaknesses of this study. In terms of strengths, this study used a broad probability sample of employed adults in the U.S., which would provide more variation in the key constructs. Also, compared to studies using convenience samples, the present sample was large thereby providing adequate statistical power to detect the hypothesized effects and providing more accurate effect sizes (Ioannidis, 2008; Schmidt, 1992). These strengths notwithstanding, the present study has three potential weaknesses. First, the study relied on self-reports that may lead to misreporting of various types. Nonetheless, in many circumstances, self-reports may be the best way to assess mental processes or behaviors that are not directly observable or may be hidden from others (Baldwin, 2000; Turkkan, 2000). This may be particularly true for reports of alcohol use. Although information about a target individual's alcohol use may be obtained from collateral informants (e.g., friends, spouses, coworkers), these informants are subject to the same types of biases that affect reports from the target individual (e.g., Connors & Maisto, 2003). In general, however, research indicates that self-reports of alcohol use tend to be reliable and valid (e.g., Del Boca & Darkes, 2003).

Second, although the 12 month reporting period is common in large epidemiologic field studies, it may result in some level of forgetting. Nonetheless, this possibility needs to be balanced against other concerns. For instance, an expert panel was convened by the National Institute on Alcohol Abuse and Alcoholism (2003) to make recommendations regarding the assessment of alcohol use. One issue they considered was the appropriate reporting period. After considering potential trade-off between recall and potential misclassification of infrequent drinkers, the panel's consensus was that a 12 month reporting period was the best choice.

Third, although the results were consistent with theoretical expectations, the present cross-sectional data do not lend themselves to strong inferences regarding the direction of causal effects because they cannot rule out reverse or reciprocal relations. Nonetheless, prior research provides some support for the hypothesized causal direction. For example, daily process data support a causal relation from work experiences to negative and positive work rumination (Sonnentag & Grant, 2012; Volmer et al., 2012). Also, longitudinal studies support a causal effect from depressive rumination to alcohol use (Caselli et al., 2010; Nolen-Hoeksema et al., 2007; Nolen-Hoeksema & Harrell, 2002), but not from alcohol use

to depressive rumination (Nolen-Hoeksema et al., 2007). Further, two daily process studies support a causal relation of positive work experiences to reduced alcohol use (Armeli et al., 2000; Carney et al., 2000).

Modest Effect Sizes and Future Research

One potential concern with the present findings is that most of the significant standardized coefficients in the hypothesized model are modest in size. There are several reasons for these modest effects that may suggest further refinements to the model. The first reason for modest effects is because most health-related outcomes are multidetermined. In fact, heavy and problematic alcohol use is considered to be a complex phenotype because it is the likely result of many determinants, each having small individual effects (see Frone, 2013 for an overview). For example, the quantitative genetics literature shows that roughly 50% of the population variance in heavy and problematic alcohol use is due to genetics (genotype) and 50% is due to nonshared (non-familial) environmental influences (see Frone, 2013, for a review). However, the molecular genetics literature has had limited success in identifying specific variants of genes (polymorphisms) that predict heavy drinking and alcoholism, and the few polymorphisms that have been located each account for very small percentages in the variance of heavy and problematic alcohol use (e.g., Agrawal and Bierut, 2012; Frone, 2013). For instance, Agrawal and Bierut (2012) pointed out that “although the heritability of alcohol dependence approaches 50 percent, the explained genetic variance to date is less than 1 percent” (pp. 279–280).

Turning to the other 50% of population variation in heavy and problematic drinking, should we expect anything different on the environment side? Past research also seems to support the notion that alcohol use is the complex outcome of many environmental determinants, each having modest individual effects. For instance, research shows that employee alcohol use is not only a function of negative and positive work experiences, it also may be an outcome of descriptive and injunction social workplace norms about alcohol use; physical availability and opportunity to use at work; workplace social control; alcohol-related outcome expectancies; personality; and a multitude of potential interactions between these factors (see Frone, 2013, for a review). Further, there are many environmental causes that exist outside the workplace.

Collectively, these findings suggest that future research trying to link negative and positive work experiences to alcohol use and other health outcomes might consider assessing many dimensions of the work environment simultaneously. Although genetic researchers still undertake hypothesis-driven, single gene studies, they also began using analytic techniques that simultaneously examine hundreds of thousands of gene variants, known as genome-wide association studies (GWAS). Similarly, although hypothesis-driven studies that focus on a few negative and positive work experiences will always be important, there may be a place for alternate analytic strategies that allow for a more holistic and integrative examination of many negative and positive work experiences simultaneously, and perhaps other dimensions of the work environment that can affect employee alcohol use.

The second reason for modest effects may be that the relations are moderated by various person or situational characteristics. In other words, the basic relations in the model may be

stronger in certain subgroups of workers. Considering the first stage of the model, it may be that not all workers who experience negative and positive work experiences will ruminate about those experiences. For example, identity theory posits that individual differences exist in the salience of a given role for self-definition (e.g. Burke, 1991; Thoits, 1991). To the extent that the work role is psychologically salient for self-definition, the work experiences will be identity-relevant and have greater implications for self-evaluation and well-being (e.g. Burke, 1991; Thoits, 1991). Thus, the psychological salience of the work role may moderate the relation between work experiences and work rumination. The positive relations between negative work experiences and negative work rumination and between positive work experiences and positive work rumination may be stronger at higher levels psychological work salience.

In terms of the second stage of the model, the relations of negative and positive rumination to alcohol use may be moderated by alcohol outcome expectancies (see Frone, 2013, for a discussion of substance use outcome expectancies). For example, performance regulation expectancies refer to the anticipated effects of alcohol on cognitive and motor performance. People who hold negative performance regulation expectancies anticipate that alcohol will impair cognitive processes. Therefore, relative to individuals who do not believe alcohol will impair cognitive process, those who do may be more likely to drink in response to negative work rumination and may less likely to drink in response to positive work rumination.

The final reason for modest effects may be the use of a between-persons study design that assessed, retrospectively, processes over a 12 month reporting period. Although longer reporting periods may useful when assessing lower base-rate behaviors, the relations in the model may actually exist over short time periods, such as hours or days, and they may be better represented in terms of within-person changes over these shorter time periods. Therefore, future research should test the model using longitudinal daily diary/experience sampling data, taking into account some of the suggestions in terms of evaluating negative and positive work experiences holistically and the use of moderator variables.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Appendix

Negative and Positive Work Rumination Scale (NAPWRS)

Interviewer- administered instructions

I'm going to ask you several questions regarding the extent to which you think about the positive and negative experiences you have at work. These experiences can include things like the nature of your work, your physical work environment, policies and procedures, interpersonal relations at work, or your successes and failures.

Self-administered instructions

Below are several questions regarding the extent to which you think about the positive and negative experiences you have at work. These experiences can include things like the nature of your work, your physical work environment, policies and procedures, interpersonal relations at work, or your successes and failures. Please check the box that best represents your answer to each question.

How often do you ...	Often	Sometimes	Rarely	Never
1. find yourself preoccupied with positive aspects of your job even after you leave work?	☐	☐	☐	☐
2. replay negative work events in your mind even after you leave work?	☐	☐	☐	☐
3. think back to the good things that happened at work even when you're away from work.	☐	☐	☐	☐
4. find yourself preoccupied with the negative aspects of your job even after you leave work.	☐	☐	☐	☐
5. keep thinking about the positive things that happened at work even when you're away from work.	☐	☐	☐	☐
6. think back to the bad things that happened at work even when you're away from work.	☐	☐	☐	☐
7. replay positive work events in your mind even after you leave work.	☐	☐	☐	☐
8. keep thinking about the negative things that happened at work even when you're away from work.	☐	☐	☐	☐

Note: Odd number items represent positive work rumination and even number items represent negative work rumination.

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Figure 1.
Conceptual model of work experiences, work rumination, and alcohol use.

Figure 2.

Structural equation modeling results for the revised conceptual model (weighted).

N = 2,831. All coefficients are standardized. The standard errors used for significance testing were based on 5,000 bootstrap samples. To simplify presentation of the model, the standardized factor loadings for the latent variables are shown in Table 2. Correlations among the negative and positive work experience variables, negative and positive work rumination variables, and the alcohol use variables are shown in Table 3. Relations involving the covariates are shown in Table 4.

* p .05; ** p .01; *** p .001.

Table 1

Descriptive Statistics and Correlations for Covariates and Model Constructs (weighted)

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Gender (men)	.53	.50	----																						
2. Race (minority)	.31	.46	.01	----																					
3. Age	41.07	12.63	-.02	-.12	----																				
4. Education	5.91	2.26	-.04	-.12	.22	----																			
5. Family income	68,000 ^a	116,614	.06	-.07	.18	.26	----																		
6. Human Services occupations	.24	.42	-.23	-.06	.09	.39	.05	----																	
7. Negative affectivity	1.67	.59	-.02	-.12	-.08	.00	.00	-.01	----																
8. Positive affectivity	3.16	.61	-.03	.02	.06	.03	.02	.09	-.50	----															
9. Negative affect	1.39	.50	-.12	-.10	.00	.06	.02	.04	.58	-.32	----														
10. Positive affect	2.60	.42	-.03	.03	-.01	.02	.01	.07	-.48	.49	-.31	----													
11. Workload	2.10	1.27	-.01	-.02	.08	.14	.06	.09	.26	-.14	.22	-.14	----												
12. Work pace	2.76	1.15	.08	-.05	.00	.10	.07	.02	.18	-.09	.16	-.06	.62	----											
13. Role conflict	2.56	.98	.07	.03	-.03	-.03	.02	-.05	.22	-.11	.15	-.11	.34	.32	----										
14. Role ambiguity	1.47	.59	.08	-.05	.00	.15	.07	-.04	.21	-.20	.17	-.19	.24	.13	.32	----									
15. Emotionally unpleasant work	1.50	1.14	-.01	-.06	.06	.12	.07	.22	.24	-.07	.25	-.14	.35	.30	.29	.17	----								
16. Distributive justice	2.84	.92	.02	-.05	-.01	-.05	.04	-.08	-.21	.24	-.17	.20	-.22	-.17	-.25	-.32	-.20	----							
17. Friendship formation	3.22	.80	-.08	-.07	.04	-.01	.02	.07	-.16	.26	-.11	.17	-.07	-.02	-.07	-.16	.00	.16	----						
18. Emotionally pleasant work	2.65	1.04	-.12	-.09	.11	.09	.02	.18	-.15	.32	-.04	.24	-.01	-.01	-.09	-.19	.23	.18	.26	----					
19. Negative work rumination	1.70	.78	-.08	-.16	.09	.22	.13	.13	.40	-.26	.41	-.21	.30	.27	.21	.24	.38	-.20	-.04	-.01	----				

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
20. Positive work rumination	2.05	.68	-.09	-.03	.09	.03	.00	.09	-.16	.28	-.08	.29	-.06	-.03	-.14	-.21	-.04	.24	.23	.41	.07	----			
21. Heavy alcohol use	.41	.66	.15	-.06	-.30	-.12	-.02	-.12	.13	-.07	.11	-.09	.03	.11	.09	.05	.05	-.04	-.04	-.12	.05	-.15	----		
22. Workday alcohol use	.08	.35	.11	-.07	-.01	.10	.07	-.08	.03	.00	.06	-.02	.02	.05	.02	.04	.00	.04	.00	.01	.07	.04	.23	----	
23 After work alcohol use	.96	1.21	.18	-.14	-.02	.09	.11	-.08	.10	-.07	.11	-.08	.06	.11	.06	.06	.06	-.02	-.02	-.06	.13	-.10	54	.25	----

Note. N = 2,831. Correlations with absolute values .04 are significant at $p < .05$.

^aMedian family income is reported.

Table 2

Standardized Factor Loadings for the Substantive Model (weighted)

Factor/Indicators	Standardized Factor Loading ^a
Work demands	
Workload	.82
Work pace	.77
Role demands	
Role conflict	.59
Role ambiguity	.58
Emotionally unpleasant work	
Item 1	.91
Item 2	.81
Distributive justice	
Item 1	.89
Item 2	.95
Item 3	.94
Item 4	.92
Friendship formation	
Item 1	.90
Item 2	.93
Item 3	.92
Emotionally pleasant work	
Item 1	.87
Item 2	.81
Negative work rumination	
Item 1	.82
Item 2	.88
Item 3	.93
Item 4	.93
Positive work rumination	
Item 1	.71
Item 2	.84
Item 3	.91
Item 4	.88
Heavy alcohol use	
5+ drinks per day	.84
Intoxication	.95
Hangover	.83
Workday alcohol use	
Frequency	.98

Factor/Indicators	Standardized Factor Loading ^a
Quantity	.98
After work alcohol use	
Frequency	.91
Quantity	.93

Note: $N = 2,831$.

^a All estimates significant at $p = .001$.

Table 3

Correlations among the Latent Variables (weighted)

Parameter	Estimate
Latent Predictor Variables	
Work demands—Role demands	.49***
Work demands—Emotionally unpleasant work	.39***
Work demands—Distributive justice	-.22***
Work demands—Friendship formation	.03
Work demands—Emotionally pleasant work	.02
Role demands—Emotionally unpleasant work	.42***
Role demands—Distributive justice	-.48***
Role demands—Friendship formation	-.05
Role demands—Emotionally pleasant work	-.24***
Emotionally unpleasant work—Distributive justice	-.17***
Emotionally unpleasant work—Friendship formation	.07*
Emotionally unpleasant work—Emotionally pleasant work	.30***
Distributive justice—Friendship formation	.11***
Distributive justice—Emotionally pleasant work	.15***
Friendship formation—Emotionally pleasant work	.19***
Latent Intervening Variables	
Negative work rumination—Positive work rumination	.29***
Latent Outcome Variables	
Heavy alcohol use—Workday alcohol use	.49***
Heavy alcohol use—After work alcohol use	.69***
Workday alcohol use—After work alcohol use	.46***

Note: $N = 2,831$.

*
 $p < .05$;

**
 $p < .01$;

 $p < .001$.

Table 4
Standardized Path Coefficients Relating the Covariates to the Model Constructs (weighted)

	Model Constructs										
	Work demands	Role demands	Emotionally unpleasant work	Distributive justice	Friendship formation	Emotionally pleasant work	Negative work rumination	Positive work rumination	Heavy alcohol use	Workday alcohol use	After Work alcohol use
Covariates											
Gender (men)	.07**	.12***	.06**	-.01	-.08***	-.08***	-.08***	-.01	.16***	.18***	.18***
Race (minority)	.02	.04	-.02	-.08***	-.08***	-.08***	-.08***	.03	-.13***	-.14**	-.16***
Age	.04	-.02	.05**	-.03	.00	.09***	.03	.06**	-.37***	-.08*	-.03
Education	.12***	.13***	.02	-.06**	-.07**	-.03	.12***	.00	-.06*	.31***	.15***
Family income	.04	.04	.05	.07**	.04	-.01	.11*	-.01	.01	-.03	.06
Human services occupations (yes)	.03	-.09**	.23***	-.07**	.07**	.16***	.01	.02	-.07**	-.31***	-.12***
Negative affectivity	.22***	.25***	.17***	-.09**	-.04	-.01	.14***	.07*	.03	-.07	-.02
Positive affectivity	-.01	-.07*	.07**	.17***	.21***	.31***	-.11***	.05*	.09***	.02	.03
Negative affect	.12***	.11***	.18***	-.07**	-.03	.06*	.19***	.03	.11***	.10*	.09**
Positive affect	.02	-.09**	-.06**	.07**	.04	.12***	.02	.14***	-.02	-.04	.01

Note: N=2,831.

* p .05,

** p .01,

*** p .001

Table 5

Standardized Indirect Effects of Negative and Positive Work Experiences on Alcohol Use (weighted)

Indirect effects	Heavy alcohol use β (95% BC CI)	Workday alcohol use β (95% BC CI)	After work alcohol use β (95% BC CI)
Negative work experiences			
Work demands via negative work rumination	.01 (.001, .02)*	.01 (.00, .02)	.01 (.002, .02)*
Role demands via negative work rumination	.02 (.003, .03)*	.02 (.00, .03)	.02 (.01, .03)**
Emotionally unpleasant work via negative work rumination	.03 (.01, .04)***	.03 (.002, .05)*	.03 (.02, .05)***
Emotionally pleasant work via positive work rumination	.02 (.01, .04)***	-.01 (-.03, .00)	.02 (.01, .03)**
Positive work experiences			
Distributive justice via positive work rumination	-.02 (-.03, -.01)***	.01 (.00, .02)	-.01 (-.02, -.004)**
Friendship formation via positive work rumination	-.01 (-.02, -.004)**	.01 (.00, .02)	-.01 (-.02, -.002)**
Emotionally pleasant work via positive work rumination	-.07 (-.10, -.05)***	.04 (.00, .08)	-.05 (-.08, -.03)***

Note: $N=2,831$. β = standardized indirect effects. The bias corrected confidence intervals were based on 5,000 bootstrap samples.

* $p < .05$;

** $p < .01$;

*** $p < .001$.