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Article

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Consumer-based coping within the United States during COVID-19: impacts of working from home

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ABSTRACT

The COVID-19 pandemic forced many people to shift how they engage in work and consumption behaviors. This study examines the remote working conditions that influence employee stress and whether work related stress influenced consumer-based coping behaviors in the height of the pandemic. Data were collected from 232 working adults to examine whether role conflict and boredom relate to avoidant (alcohol consumption) and confrontative (exercise frequency) consumer coping behaviors via perceived stress. Results show direct relationships between work conditions, stress, and consumer based coping; however the mediation hypotheses were not supported. Implications for work stress and consumer coping are discussed.

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Introduction

In 2020, unprecedented and unanticipated changes occurred with the spread of COVID-19 and the implementation of 'stay-at-home' public health guidelines. More people began to work from home, communicate digitally, engage in e-commerce, and generally live more of their lives online (Puiras et al., 2022; Zwanka & Buff, 2021). Some CEOs and experts have predicted that many of these emerging trends are likely here to stay (Politico, 2020; Sullivan, 2020; Zwanka & Buff, 2021). Indeed, even as the pandemic has waned, many employees continue to work remotely. In 2019, only 6% of the U.S. workforce reported working from home, compared to 35% in 2020 (Coate, 2021). By 2022, 62% of employees reported working remotely on an occasional basis, 85% of managers believed that having remote workers on their teams would become the standard, and 16% of all global companies were fully remote (Steward, 2022).

The rapid shift in workplace logistics in the early phase of the pandemic created unanticipated challenges for employees, including increased anxiety and perceived stress (Centers for Disease Control & Prevention, 2021; Fardin, 2020; Giorgi et al., 2020; Messner & Payson, 2022). Around the world, social gatherings were banned, theaters and restaurants closed, and gyms shut down to prevent spread of the virus, leaving few options available to cope with stress. As the boundaries between work and home became increasingly blurred (Caluzzi et al., 2021), it is possible that some employees chose positive coping behaviors (e.g. exercise) while others chose more negative coping tactics (e.g. alcohol consumption).

According to Moschis (2007), consumers may respond to stress using avoidant (e.g. consuming more food or alcoholic beverages) or confrontative (e.g. gardening, remodeling, or exercising) coping behaviors. Consistent with this prediction, the popular press reported that Americans began to buy alcohol in greater frequency and in larger quantities during the COVID-19 pandemic (Chesler, 2020; Costa, 2020; Lukach, 2020). Academic studies have confirmed that alcohol consumption by U.S. adults not only increased

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(Grossman et al., 2020), but the increase persisted into 2021, as indicated by longitudinal data, especially among women and African Americans (Kerr et al., 2022). Confrontative coping also increased during the pandemic, as reflected by consumer demand for online exercise classes and in-home gym equipment. For example, Bloomberg reported that in 2019, 7% of consumers live-streamed their workouts, compared to 80% who did so during the COVID-19 pandemic (Davalos, 2021). A survey about in-home gym equipment purchases during the pandemic revealed that approximately 17% of U.S. consumers had purchased weights or dumbbells (Tighe, 2022), and consumer sales of treadmills jumped 135% (Shaban, 2021).

While the organizational behavior literature suggests that role conflict and boredom impact stress (Mohr & Puck, 2007), and the marketing literature suggests that stress can impact alcohol consumption and exercise frequency (Moschis, 2007), the authors are not aware of any studies that have combined these constructs in the context of work and consumption. For example, Chakraborty and Chattaraman (2022) note that although there is research examining antecedents of consumption-based coping, this research has almost exclusively examined the consumer's individual characteristics, thereby ignoring the many other factors that contribute to stress and consumption. This study develops a model that integrates constructs from both the management and marketing literature to provide a better understanding of work-related antecedents that influence stress, which in turn impacts consumption-related coping behaviors. As business practices continue to evolve and Americans increasingly work from home, the results of this study also provides insights for practitioners and scholars who need to understand the work-related antecedents that can impact individual coping behaviors.

Theoretical development and hypotheses

Stress is defined as a psychological and physical response to situations in which individuals have insufficient coping mechanisms (Michie, 2002). Acute stress is caused by a particular event or situation, and chronic stress is a long-term reaction to ongoing demands (Gonzalez-Liencrez et al., 2016; Lazarus, 2006). In response, individuals can pursue active (i.e. productive, confrontative) coping activities that offer benefits, such as improved health, or they can engage in passive (i.e. avoidant) forms of coping that exacerbate the problem and lead to chronic stress. According to Moschis (2007, 434), stress 'requires a response (coping), which can include the initiation or intensification of consumption activities'. These activities include confrontative and avoidance coping. Confrontative coping is the consumption of goods that alleviate the physical and psychological effects of stress, such as exercise equipment. Sales of such equipment increased by 17% during the COVID-19 pandemic (Brewster, 2022). Conversely, avoidance coping involves consumption behaviors that may offer short-term relief but are associated with long-term problems, such as alcohol consumption, which also increased during the pandemic (Grossman et al., 2020).

In the early stage of the COVID-19 pandemic, many employees experienced acute stress from lockdowns requiring them to work from home (Andrulli & Gerards, 2023; Galanti et al., 2021; Jaškevičiūtė et al., 2024). The present study's model thus draws upon management theory to investigate the work-related stressors that may serve as antecedents to individuals' perceived stress and behavior. Figure 1 presents an overview of the theoretical model of factors that may have impacted consumption activities among individuals working from home during the pandemic. The theoretical justification for each hypothesis is presented below.

Role conflict

Role conflict is the perception that elements of the work role, or goals within that role, oppose each other or are incompatible (Rizzo et al., 1970). Role conflict occurs when workers feel they do not have the time, resources, energy, or skills to meet the performance standards required by their jobs. This conflict between demands and resources results in workers feeling uncertain about their job, their performance, and their ability to achieve stated objectives (Coope et al., 2001). Role conflict is associated with various negative outcomes, including stress (Mohr & Puck, 2007), emotional exhaustion (Li et al., 2023), and lower job performance (Jaiswal & Prabhakaran, 2023).

During the COVID-19 pandemic, many workers faced atypical work expectations, such as working from home for the first time in their careers. Employees had to quickly shift and adjust to role changes and

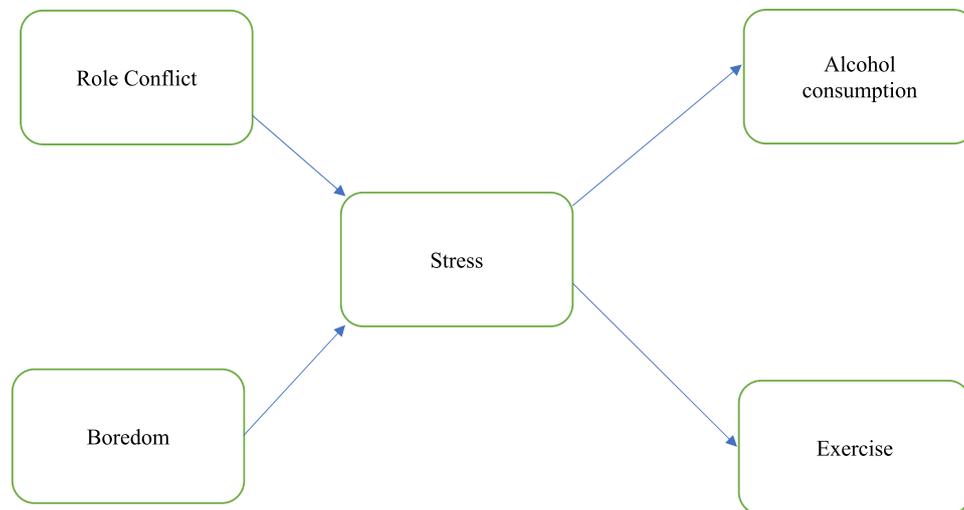


Figure 1. Hypothesized model of factors influencing behaviours of remote employees during the COVID-19 pandemic.

new technologies, such as cloud video conferencing (e.g. Zoom meetings), that changed organizational communication and reduced access to co-workers and supervisors. Research conducted during the pandemic suggests that employees adapting to new work environments were more likely to report higher levels of stress and emotional exhaustion when they had low levels of autonomy, lower trust in their manager, and lower ability to self-monitor (Jaiswal & Prabhakaran, 2023; Li et al., 2023). Anecdotal evidence suggests that some employees worked longer hours and experienced 'Zoom fatigue' (McKeever, 2020; Miller, 2020). Given that these types of changes may have elicited new forms of role conflict for workers, it is likely that role conflict would lead to increased stress for remote workers during the pandemic. Thus, hypothesis 1 is as follows:

Hypothesis 1: Role conflict will be positively related to perceived stress.

Boredom

The affective events theory posits that events in one's internal and external environments result in affective responses that influence job attitudes and work outcomes (Weiss & Cropanzano, 1996). Boredom is an affective state created by events in and outside the work environment (van Hooff & van Hooft, 2014, 2017). Internal factors include lack of task identity, work underload, monotony, repetition, and underutilization of skills (Fisher, 1993; Hunter et al., 2016; van Hooft & van Hooft, 2018). External workplace factors that influence boredom include loss of purpose or routine and disruption in norms of behaviour (Loukidou et al., 2009), as well as disturbance in roles and execution of role obligations (Darden, 1999). In the context of the COVID-19 pandemic, sudden orders to work from home likely produced both disruptions in routine and loss of behavioural norms. For example, managing multiple responsibilities in a more limited remote environment might have resulted in role disturbances or challenged role execution. In addition, loss of face-to face interaction may present new challenges in receiving task direction and feedback. These hindrances to normal work routine have been found to increase state boredom in employees (Harju et al., 2023; Kawada et al., 2023). Thus, the pandemic likely produced affective responses among employees, including boredom, while simultaneously limiting the social resources required to cope with these negative emotions.

The job demand-control theory asserts that physical and psychosocial demands in the work environment increase feelings of stress and that individual control over such demands may counteract the effects of stress (Karasek, 1979). Boredom-induced stress arises from the inability to control events that incite boredom, such as low-stimulation environments or changes in workload (Hunter et al., 2016; Parasuraman & Purohit, 2000; Reijseger et al., 2013). Although stress from boredom is a relatively understudied phenomenon, there are several studies which suggest that the primary elements of boredom (i.e. inactivity, restlessness, lack of motivation) produce psycho-social demands that, if not properly controlled,

lead to stress, reduced employee well-being, and higher levels of turnover (Kawada et al., 2023; Martin et al., 2006).

During the COVID-19 pandemic, environmental changes (e.g. switching to remote work) disrupted job and family roles, as well as social routines. This changing and unpredictable environment likely produced boredom and created demands that could not be properly controlled, such as decisions about where or how to work and when and how to engage with others. Many felt helpless in the face of these demands, which likely increased their stress levels. Therefore, hypothesis 2 is as follows:

Hypothesis 2: Boredom will be positively related to perceived stress.

Direct effects of stress on consumption-based coping

A long line of coping research in the psychological sciences suggests that individuals cope with stress in a variety of ways. For example, Stone et al. (1988) posit that individual coping mechanisms can range from problem solving (rational thinking) and tension-reduction behaviors (exercising) to avoidance (drinking) and religiosity (praying). This study focuses on alcohol consumption and physical activities as consumption-based coping techniques that are specifically postulated in Moschis (2007) model. According to Reich and Zautra (1988), consumption relieves the immediate discomfort associated with stress by provoking a temporary sense of arousal or escape. Additionally, Cutright and Wu (2023) postulate that in situations where consumers feel low levels of personal control, they may engage in higher levels of consumption behavior to increase their feelings of personal control. Yet, such behavior can have long-term ramifications. For example, consuming alcohol as a form of avoidance coping may lead to physical health problems and increase the likelihood of chronic stress, whereas exercise as a form of confrontative coping may have health benefits and reduce the likelihood of chronic stress.

Drinking behavior is an avoidant, self-medicating technique used by some consumers who experience high levels of stress (Frone, 2016; Paramita et al., 2023). Evidence from the management literature suggests mixed results with regard to the relationship between work stress and drinking behavior (Frone, 2016). Specifically, some research has demonstrated that stress in the workplace is related to drinking behavior (Chen et al., 2023; Martin et al., 1996; Wang et al., 2010) while other studies show no relationship (Frone et al., 1997; Greenberg & Grunberg, 1995). Frone (2016) suggests that the source of the work stress may play an important role in the coping behaviors that ensue, and that individual level variables such as gender, age, and race may moderate this relationship.

During COVID-19, workers across the U.S. had a shared experience of being forced to suddenly 'shelter in place', interrupting workflow and placing challenges on the way work was accomplished. Although these challenges may not have produced the same level of stress for every employee, it is likely that stress caused by work interruptions may have led some consumers to purchase and consume more alcohol during this time. For example, some evidence suggests that American consumers' alcohol consumption increased by as much as 400% during the early months of the pandemic (Sweeney, 2020), mainly due to feelings of loneliness and depression and a lack of other coping mechanisms (Wardell et al., 2020). Thus, hypothesis three is as follows:

Hypothesis 3: Perceived stress will be positively related to alcohol consumption.

Although there is evidence to suggest a relationship between stress and drinking behavior as a coping mechanism, less is known about stress relief through physical activity. Evidence shows that physical activity reduces the negative physical and psychological effects of acute and chronic stress (Fox, 1999), yet research suggests that under high levels of stress, few people elect to engage in physical activity (Ng & Jeffery, 2003). Indeed, only about 30% of people seek physical activity as a means of stress relief (see Stults-Kolehmainen & Sinha, [2014] for a review), and the choice to engage in exercise as a source of stress relief is related to both environmental factors and gender (Yoon et al., 2023). Stults-Kolehmainen and Sinha (2014) suggest that the source of stress may determine whether someone seeks physical activity as a coping mechanism. Whereas research suggests that challenging life events, caregiving activities, and health issues has been related to increased physical activity, stress related to job activities and work environments produces mixed results.

We propose that during the pandemic, individuals experiencing work related stress would increase their physical activity due to the lack of opportunities for other forms of coping (e.g. social gatherings). During COVID-19, gyms closed, workout classes were cancelled, and going outdoors in busy public places was discouraged, leaving fewer outlets for people seeking physical activity as a source of coping. As a result, some consumers turned to purchasing home gym equipment or virtual fitness subscriptions (Fearnbach et al., 2021; Roggeveen & Sethuraman, 2020). It is probable that individuals engaged in these constructive forms of coping in response to stress, including factors associated with remote work. Thus, hypothesis 4 is as follows:

Hypothesis 4: Perceived stress will be positively related to exercise frequency.

Indirect effects of role conflict and boredom on consumption-based coping

Role conflict and boredom are linked with stress and increased alcohol consumption (e.g. Cooper et al., 1995; Orcutt, 1984). For example, Bamberger and Cohen (2015) examined the impact of work-related factors, such as role conflict, on alcohol misuse among truck drivers and found that stress mediated the relationship between these variables. Wolff et al. (2013) also found that stress mediated the relationship of inter-role conflict on alcohol consumption. Based on these findings, one may posit that stress is a channel through which role conflict impacts alcohol consumption.

With regard to boredom, Frone (2016, p. 285) states that ‘work demands on an employee, an employee’s level of boredom, lack of participation in decision making, and lack of interpersonal interaction with supervisors and coworkers’ are factors that induce stress and subsequent alcohol consumption. According to the alienation/stress paradigm, employees may use alcohol as a means of relieving stress associated with negative changes in the psycho-social elements of the work environment (Trice & Sonnenstuhl, 1990). Following this logic, the negative effects of inactivity and low arousal (i.e. boredom) increase negative psychological reactions (i.e. stress), which subsequently increases coping behaviors (i.e. alcohol consumption). Therefore, hypotheses 5a and 5b are as follows:

Hypothesis 5a: Perceived stress will mediate the relationship between role conflict and drinking behavior.

Hypothesis 5b: Perceived stress will mediate the relationship between boredom and drinking behavior.

Both role conflict and boredom also may be linked to increased physical activity via stress. For example, when employees perceive role conflict, the resulting uncertainty and anxiety may propel them to engage in physical activity as a form of release. More specifically, the anxiety and stress produced by role conflict may ignite tense-energy and a heightened need for movement (Thayer, 1996), thus leading the individual to obtain and use exercise equipment as a form of coping. Similarly, experienced boredom is unpleasant or distressing, but is not necessarily linked to low energy. Indeed, Gemmill and Oakley (1992) suggest that in the height of boredom, some individuals may be able to convert this state of low arousal to motivation and energy. Additional research suggests that bored individuals with high levels of self-control may seek exercise as a goal-directed behavior that relieves boredom (Wolff et al., 2021). Under these circumstances, it is possible that boredom from an altered work routine may lead individuals to cope through exercise. This is especially probable during COVID-19 when there were few other available outlets for release of tense-energy or motivation to be active. Thus, hypotheses 6a and 6b are as follows:

Hypothesis 6a: Perceived stress will mediate the relationship between role conflict and exercise frequency.

Hypothesis 6b: Perceived stress will mediate the relationship between boredom and exercise frequency.

Methodology

Sample and procedure

Prior to the start of the study, the authors submitted their protocol (#IRB20134) to the institutional review board of their university and received an exemption, as the survey was designed to be completely anonymous. This online survey of working adults in the U.S. was conducted during the weekend of May 1–3, 2020, when 80% of the country was under orders to shelter in place. Only workers in ‘essential businesses’ could report to work, large gatherings were prohibited, and many businesses were closed. Participants were

recruited via messages on Facebook and Twitter asking for participation in the anonymous survey. It should be noted that while the effects of the COVID-19 pandemic provided a consummate context in which to study factors such as role conflict, boredom, and stress, as large swaths of people had to rapidly shift to working from home while also managing changes in their personal lives during the spring of 2020 (Puiras et al., 2022; Zwanka & Buff, 2021), the variables and relationships proposed in this study are also relevant to a larger work context as an increasing number of employees are working remotely and many consumer behaviors have been permanently altered as people have shifted their routines after the pandemic.

All respondents provided informed written consent before completing the survey. Exclusion criteria included the following: not currently working ($n=27$), not under a shelter in place order ($n=11$), working 100% of the time outside the home ($n=10$), or providing problematic responses (e.g. answering all '5s') or completing the survey too quickly ($n=4$). Of the 284 surveys returned, 52 did not meet the criteria and were excluded. The final sample included 232 working adults, primarily married (73%), female (71%), and with an average age of 43.5 years and average household size of 3.2 people. Over half of the respondents reported an average annual household income of \$125,000–\$150,000. Only 10% ($n=23$) worked from home 50% of the time or less, compared to 11% ($n=26$) who worked from home 75% of the time and 79% ($n=183$) who were fully remote. The respondents reported that after the lockdown orders, their average time spent working from home increased by 47%.

Respondents were asked several questions about how they spent their time during lockdown. The average number of paid work hours per day was 7.6. Nearly half (45%) of respondents homeschooled children for an average of 2.3 hours each day. Additionally, 31% of respondents indicated that they spent more time exercising at home. Finally, 38% reported drinking more alcohol, and 37% reported drinking about the same amount, compared to pre-lockdown levels. Of those, 12% reported that they consumed alcohol while working and 9% while homeschooling children. Most had only virtual interactions with family (83%) and friends (57%) outside the home, with less than 15% stating they had interacted face-to-face with people outside the home. All data are available upon request from the first author of the study.

Measures

The self-reported survey was designed to elucidate factors influencing stress, drinking behavior, and exercise during the COVID-19 lockdown. Respondents were asked to think about the past week when responding to the survey items. See [Table 1](#) for a summary of the factor loading for the items measuring each construct in the study.

Role conflict

Role conflict was measured using Rizzo, House, and Lirtzman's (1970) 4-item scale of conflict between time, resources, and capabilities ($\alpha = .76$). This scale measures intra-role and resource conflict using responses to items such as 'I had enough time to complete my work' and 'I received assignments that were within my training and capability'. Respondents indicated the frequency with which they had experienced such conflicts in the past week using a scale from 1 (never) to 5 (very frequently).

Boredom

Boredom was measured with Hunter et al. (2016) 4-item, short-form, multidimensional state boredom scale ($\alpha = .80$). Items on this scale measure general inattention, disengagement, and low arousal. Sample items include 'I feel bored' and 'I want something to happen, but I'm not sure what'. Responses ranged from 1 (strongly disagree) to 5 (strongly agree).

Perceived stress

Perceived stress was measured using Cohen, Kamarck, and Mermelstein's (1994) 14-item perceived stress scale ($\alpha = .89$). One item was removed from the scale due to low factor loadings, and high cross loadings with other constructs (see [Table 1](#)). Participants rated items such as 'In the last week, how often have you felt that you were unable to control the important things in your life?' Responses ranged from 1 (not at all) to 5 (very often).

Table 1. Factor loadings for the study's constructs.

	Factor Loadings of Items
Role Conflict (Rizzo et al., 1970)	
I had enough time to complete my work.(r)	.91
I received an assignment without the time/resources to complete it.	.50
I received assignments that are within my training and capability. (r)	.38
I had just the right amount of work to do. (r)	.69
Boredom (Hunter et al., 2016)	
I feel bored.	.79
I am wasting time that would be better spent on something else.	.89
I want something to happen, but I am not sure what.	.90
I feel like I am sitting around waiting for something to happen.	.98
Perceived Stress (Cohen et al., 1994)	
In the last week, how often have you been upset because of something that happened unexpectedly?	.58
In the last week, how often have you felt that you were unable to control the important things in your life?	.67
In the last week, how often have you felt nervous and "stressed"?	.67
In the last week, how often have you dealt successfully with irritating life hassles? (r)	.38
In the last week, how often have you felt that you were effectively coping with important changes that were occurring in your life? (r)	.56
In the last week, how often have you felt confident about your ability to handle your personal problems? (r)	.56
In the last week, how often have you felt that things were going your way? (r)	.60
In the last week, how often have you found that you could not cope with all the things that you had to do?	.68
In the last week, how often have you been able to control irritations in your life? (r)	.60
In the last week, how often have you felt that you were on top of things? (r)	.72
In the last week, how often have you been angered because of things that happened that were outside of your control?	.55
In the last week, how often have you found yourself thinking about things that you have to accomplish? **	.23
In the last week, how often have you been able to control the way you spend your time? (r)	.53
In the last week, how often have you felt difficulties were piling up so high that you could not overcome them?	.81
Alcohol Consumption	
Thinking about the past week, how many alcoholic beverages have you consumed per day on average?	N.A. (Single item measure)
Exercise Frequency	
Thinking about the past week, how much time did you spend per day exercising using equipment or online classes that you purchased as a result of the pandemic?	N.A. (Single item measure)

Note: **Item deleted due to low factor loading.

Alcohol consumption

A single item was used to measure the average daily amount of alcohol consumed during the previous work week. Respondents were asked to indicate the number of alcoholic drinks they consumed per day (on average).

Exercise frequency

A single item was used to measure exercise frequency. Respondents were asked to indicate the total amount of time they spent exercising with home gym equipment or online classes that was newly acquired since the beginning of the pandemic.

Control variables

The authors reviewed the literature for demographic variables that may significantly impact the relationships between stress, drinking, and exercise frequency. Research suggests that during COVID-19, women and African Americans consumed more alcohol than men overall (Kerr et al., 2022). Similarly, Milliken et al. (2020) found that the pandemic differentially affected citizens of different ages and genders and that age and gender were significantly related to alcohol consumption and exercise frequency. To isolate the effects of the work-related antecedents, the authors controlled for both gender and age in model testing. In the present study, gender significantly influenced several substantive variables in the model, age did not. Thus, the authors retained gender as a control variable in their final model testing.

Analysis strategy

Given that the data was collected in a single survey, an analysis of common method variance (CMV) was conducted to ensure that ratings provided by participants were not inflated or biased by method effects. Next, the authors tested the stated hypotheses using path analysis in EQS 6.1. Path analysis was chosen

over structural equation modeling because both outcome variables (drinking behavior and exercise frequency) were single-item measures. The EQS 6.1 program provides results on the overall fit of the model, as well as direct and indirect path coefficients, but it does not report confidence intervals (CIs) of indirect effects. Thus, the authors also employed the PROCESS macro with bootstrapping (Preacher & Hayes, 2008) to test for indirect effects. The PROCESS macro is preferable over other methods of testing mediation (i.e. Baron & Kenny, 1986) because it does not assume that the distribution of the indirect effect is normal, and it allows for tests of indirect effects even when the direct effect between x and y is weak or non-existent (Rucker et al., 2011).

Results

Common method variance testing

To assess whether the hypothesis testing could be affected by data collected from a single source at a single time period, the authors tested for CMV using Lindell and Whitney (2001) partial correlation method, which determines whether correlations between hypothesized variables are significant after controlling for the estimated effects of CMV. Lindell and Whitney (2001) posit that this method is more conservative than separating out the effects of a marker variable that is statistically unrelated to the hypothesized variables (Lindell & Brandt, 2000; Lindell & Whitney, 2001). For this analysis, the authors reviewed correlations between substantive study variables and used the smallest observed correlation (role conflict and alcohol consumption, $r = .03$) to separate out the remaining correlations. The results of this analysis revealed that all correlations remained significant after separating out the effects of CMV. Thus, it appears that CMV did not significantly affect the results of the study. See Table 2 for the descriptive statistics and inter-correlations among study variables.

Hypothesis testing

The fully mediated path model demonstrated good fit with the data according to the standards provided by Hu and Bentler (1999) ($\chi^2(7, N=232) = 13.46, p = .06, \chi^2/df=1.92, CFI = .94, TLI = .89, RMSEA = .06, SRMR = .05$). The authors also evaluated two alternative models by including direct paths between role conflict and drinking behavior ($\chi^2(6, N=232) = 11.28, p = .08, \chi^2/df=1.88, CFI = .95, TLI = .89, RMSEA = .06, SRMR = .05$), as well as boredom and drinking ($\chi^2(6, N=232) = 13.45, p = .04, \chi^2/df=2.24, CFI = .94, TLI = .84, RMSEA = .07, SRMR = .05$). Finally, the authors examined a partial mediation model by adding direct paths from role conflict to drinking behavior and exercise frequency ($\chi^2(5, N=232) = 9.80, p = .08, \chi^2/df=1.96, CFI = .96, TLI = .89, RMSEA = .06, SRMR = .04$), as well as boredom to drinking behavior and exercise frequency ($\chi^2(5, N=232) = 3.57, p = .61, \chi^2/df = .71, CFI = 1.0, TLI = 1.0, RMSEA = .0001, SRMR = .02$). These results suggest that the partially mediated model with direct paths between boredom and drinking behavior and exercise frequency showed superior fit to the data ($\Delta\chi^2 = (2, N=232) = 9.89, p < .01$). Thus, this partial mediation model was retained as the best-fitting model. Figure 2 reports the path coefficients from this model.

Hypothesis 1 states that role conflict will be significantly associated with perceived stress. The final path model confirmed a significant relationship between role conflict and stress (coefficient = .34, $p < .01$),

Table 2. Descriptive statistics and inter-correlations for all study variables.

	1	2	3	4	5	6	7
1. Gender	--						
2. Age	-.07	--					
3. Role conflict	.13*	-.02	--				
4. Boredom	-.13*	-.06	.02	--			
5. Stress	.15*	-.16*	.50**	.27**	--		
6. Alcohol consumption	-.01	.04	.01	.23**	.14*	--	
7. Exercise frequency	.17*	.12	-.13*	-.07	-.11	-.06	--
Mean	1.73	43.52	2.33	2.86	2.66	1.28	2.97
SD	.48	9.15	.85	.99	.59	1.25	1.22

Note: $N=232$. * $p < .05$. Cronbach's alpha reliability presented on the diagonal. 0= male; 1= female.

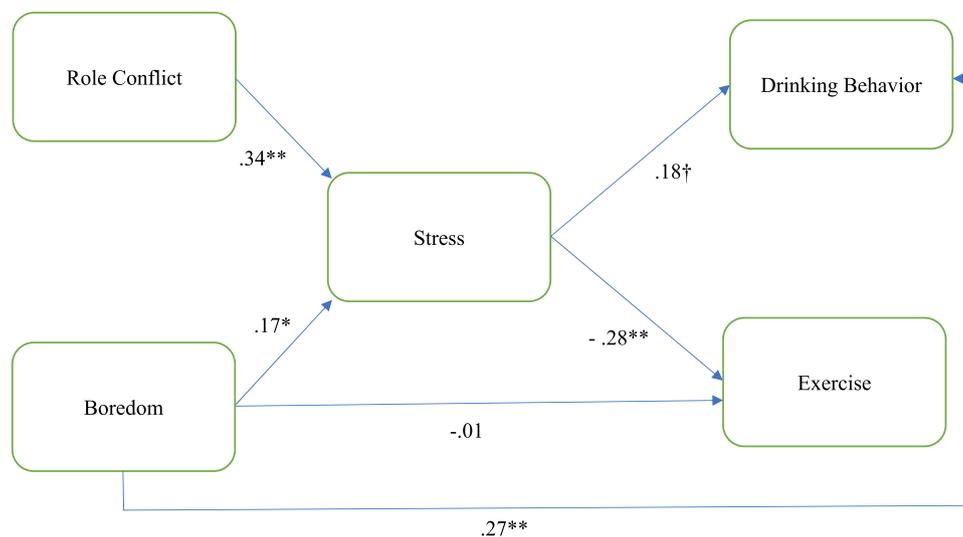


Figure 2. Final model of factors influencing behaviours of remote employees during the COVID-19 pandemic, with path coefficients.

Model results: $\chi^2(5) = 3.57, p = .61$; CFI = 1.0; SRMR = .001. † $p < .10$, * $p < .05$, ** $p < .01$.

supporting hypothesis 1. Hypothesis 2 states that boredom will be significantly associated with stress. This hypothesis also is supported by a positive and significant path coefficient (coefficient = .17, $p < .05$). Hypothesis 3 states that stress will be positively associated with drinking behavior. In the final, partially mediated model, the path coefficient between stress and drinking behavior is only marginally significant (coefficient = .18, $p = .07$). Results of the test of hypothesis 4, stating that stress will be related to exercise frequency, are significant but in the opposite direction as the authors predicted (coefficient = $-.28$, $p < .01$), indicating that as stress increased, exercise frequency decreased.

With regard to mediation, the authors examined hypotheses 5 and 6 using Preacher and Hayes (2008) PROCESS macro with bootstrapping. Hypothesis 5 states that stress will mediate the relationships between role conflict and drinking (5a) and boredom and drinking behaviour (5b). Respondents reported consuming an average of 2.31 (*sd* 1.36; range = 0–5) drinks per day in the week prior to the survey. The results show a marginally significant indirect effect between role conflict (effect = .06, $p = .07$, 95% CI $[-.006, .17]$) and drinking behaviour; however, the indirect effect of boredom is not significant (effect = .02, 95% CI $[-.005, .05]$). Finally, hypothesis 6 states that stress will mediate the relationships between role conflict and exercise frequency (6a) and boredom and exercise frequency (6b). Respondents reported exercising for an average 2.97 total hours in the week prior to the survey. The results show that neither the indirect effect between role conflict and exercise (effect = $-.05$, 95% CI $[-.15, .06]$) nor the indirect effect between boredom and exercise frequency (effect = $-.04$, 95% CI $[-.09, .009]$) is significant.

Discussion and implications

The COVID-19 pandemic forced many employees to work from home to contain the spread of the virus and many people have continued to work from home even after the pandemic has waned. Along with this shift to remote work during the pandemic, gyms and shopping malls closed and social gatherings were discouraged. This unprecedented change led to feelings of isolation and uncertainty. Many individuals struggled with the loss of routines and lack of access to appropriate coping mechanisms during lockdowns. Some of these effects have persisted in society (Zwanka & Buff, 2021). An increasing number of Americans have continued to work from home at least part-time (Steward, 2022; Zwanka & Buff, 2021), exercise at home (Shaban, 2021), and consume more alcohol at home (Kerr et al., 2022), in part because some may still be reluctant to interact socially in larger, public, indoor settings (Newsome, 2021), while others have permanently shifted their daily routines. Thus, this study's findings are relevant to a more generalized context as some behaviors that began during the pandemic appear to be here to stay.

Implications for theory

The present study expanded beyond Moschis's (2007) model of consumption-related coping by examining the antecedents of stress and coping behavior among remote employees during COVID-19 lockdowns. This study contributes to the literature as the model integrated theory from management and marketing to examine how work challenges such as role conflict and boredom relates to stress and either confrontative (e.g. exercise) or avoidant (e.g. alcohol consumption) coping activities. Although research has demonstrated that consumers engage in a variety of consumption-based coping behaviors, work-related antecedents of stress and coping have not previously been studied as they relate to these constructs. Thus, this study examined two primary, work-related stressors that American employees felt while working at home: (1) role conflict from confusion over shifting work requirements and new technologies and (2) boredom from inactivity, disrupted routines, and shifting norms of work behavior (Loukidou et al., 2009).

The results demonstrate that work-related disruptions from the pandemic, in the form of role conflict and boredom, were significantly related to increased stress among respondents. In line with the affective events theory (Weiss & Cropanzano, 1996), the survey results showed an increase in perceived stress after the shift to online work, which required adjusting to role changes, improvising new solutions, learning new technologies for organizational communication, and compensating for reduced access to co-workers and supervisors (Fisher, 1993; Hunter et al., 2016; Smith, 1981). These findings are likely persistent among today's employees who are working remotely more often. Thus, while managers may perceive that employees working from home are receiving several benefits, such as increased flexibility and less time spent commuting, working from home might actually be increasing an employee's role conflict, boredom, and perceive stress. Thus employees who shift to working remotely need to be provided support from their managers if they have confusion about their role. Furthermore, they should be given additional opportunities for social interaction and engagement with their colleagues and managers to avoid potential feelings of isolation, boredom, and stress.

The present study also adds to the literature by demonstrating an increase in alcohol consumption at the time of data collection, compared to the weeks preceding the lockdown. This avoidant form of coping was significantly predicted by stress and boredom. Furthermore, role conflict was significantly related to stress but not alcohol consumption. Survey participants thus appeared to engage in this avoidant form of coping in response to the overall stress of the pandemic and the specific stress of work-related boredom. One could infer that for some respondents, using alcohol may have been a way to escape disruptions in norms, routine, and social interaction. The perceived loss of purpose and routine associated with boredom while working from home could help explain why overall alcohol sales in the U.S. increased and alcohol delivery services increased by 400% during lockdown (Sweeney, 2020) and continue to be up (Kerr et al., 2022).

Although Moschis (2007) posits that increased stress can lead to an increase in confrontative coping in the form of purchasing and using exercise equipment, the present study's results did not support this hypothesis. Interestingly, the working American adults in this study reported a slight increase in exercise using equipment purchased after the lockdown; however, the increased stress was related to a decrease in exercise frequency. Taken together, these results shed light on the mixed findings regarding the relationship between stress and exercise (Fox, 1999). Despite research showing that exercise relieves the negative effects of stress, this study's results suggest that under times of perceived stress, individuals do not use exercise as a form of coping. It is certainly possible that creating or following an exercise routine increases feelings of rigidity, which can actually work counter intuitively to the idea that exercise increases endorphins and thus reduces stress (Mensch, 2020). Future research needs to unpack the complex issues that appear to exist around stress and exercise as a coping mechanism.

Implications for consumers

The findings of this study have implications for understanding stress-related consumer behaviors. Specifically, those that seek avoidant coping strategies like alcohol consumption could be at risk of

chronic stress and its negative physical and psychological effects. Moreover, increased use of alcohol as a reaction to stress could lead to other chronic conditions including liver disease, cardiac impairment, and other mental and behavioral health problems (Shield et al., 2014). This avoidant coping may have long-term, deleterious effects for employees and employers alike.

Additionally, the findings of this study suggest that consumers may not be aware of the potential deleterious effects of working from home. The results show that the stress they feel from role conflict and boredom might be increasing not only their alcohol consumption but also potential obesity (due to a reduction in exercise frequency). While many consumers may want to work from home because they feel it is more convenient, they may not realize that this activity can actually cause increased stress and potentially negative health-related behaviors. Thus, future research may want to examine whether consumers are aware of the potential for role conflict, boredom, and increased stress that can come from working from home.

Implications for businesses

There are two general categories of implications that the findings of this study suggest for businesses: implications for managing employees and implications for target marketing and sales. With regards to managing employees, one of the most important activities global managers can do is to help workers clearly define their priorities. They also can identify work resources to help remote employees with the challenges of working from home. For example, managers can help remote workers understand changes in priorities and tasks, as well as how to structure their time effectively (Li et al., 2023). Furthermore, organizations can ensure their remote employees have flexibility to complete important tasks and that they feel supported and cared for by the organization (Kurtessis et al., 2017). Without such support, employees may feel a loss of direction, leading to a withdrawal from work, or 'quiet quitting' (Marples, 2022).

Although this study's findings did not support the notion that employees who perceive stress engage in confrontative coping through exercise, respondents did report exercising more frequently using equipment purchased during the pandemic. Organizations might capitalize on these trends by promoting employee fitness programs and allowing employees time to exercise while working from home (Connell & Grainger, 2002). For example, designating one hour a day for employees to 'log out and workout' may guard against the negative effects of stress as a result of working from home. Businesses could offer points programs or employee competitions for prizes based on self-reported exercise each week. Businesses could offer free gym memberships and reimbursements for the purchase of at home gym equipment for their employees who work from home. They could also create programs which build social support and solidarity among employees, such as promoting 'dry January' as an organizational activity.

In contrast to companies better supporting their employees who work from home, the study's findings also have implications for the target marketing and sales aspects of businesses. For alcohol manufacturers and vendors, the findings suggest that consumers who work from home consume more of their products. Thus, targeting consumers who work from home with advertising campaigns and offering promotions, like free delivery for every \$100 in sales, are strategies that businesses may want to capitalize on as consumers are increasingly working from home. Gyms and companies that manufacture and sell exercise equipment, on the other hand, may want to try and implement advertising campaigns to try and reverse the negative effects of increased stress on exercise frequency for those consumers who work from home.

Implications for policymakers

The consumption of alcohol while working from home also has implications for public health. Some respondents reported drinking while homeschooling children in the household. Alcohol consumption in these contexts is potentially counterproductive, negatively impacting work performance and relationships with family members and children. Thus, this study's findings highlight a potentially problematic response to stress that can affect both work and personal lives. The increase in alcohol sales and

consumption among U.S. consumers observed during the COVID-19 pandemic (Chesler, 2020; Costa, 2020; Lukach, 2020) appears to be continuing (Kerr et al., 2022). Despite the profitability of this phenomenon for marketers of alcohol, these changing consumption patterns reflect increased and persistent stress among consumers.

A holistic views of the model's findings suggest that as consumers who work from home feel increased stress, they are likely to drink more and may become more obese (i.e. decreasing exercise frequency), which has negative externalities for the overall health of the population. And if businesses do target this audience for increased alcohol sales, there are even greater potential public policy implications. Thus, public policy makers may want to consider the potential negative effects that may arise as more consumers work from home and create public health campaigns to increase awareness about these deleterious effects. Public policy could also consider ways to encourage businesses to offer increased counseling services to help employees who work from home to better manage role conflict, boredom and stress. Future research should examine the potential public policy implications of the results of this study.

Limitations and directions for future research

Although the results of this study shed light on the relationships between role conflict, boredom, stress, alcohol consumption, and exercise frequency among remote workers in the U.S. during the pandemic, they should be interpreted with caution. This study was correlational in nature and thus does not show causation. The CMV analysis suggested that the data were not adversely affected by a single-source, single time period. Nevertheless, the ideal study design would include multiple periods of data collection to create temporal separations and then draw conclusions regarding mediation. Additionally, the sample may not be fully representative as it was more heavily female and focused on the U.S. Ong and Moschis (2009) found that different cultures and subcultures vary in their consumption-based coping responses to life events. Thus, the U.S.-based respondents in this study likely had unique responses to the lockdowns in their locations. Despite these limitations, the results of the study offer some evidence of the challenges individuals experienced while working remotely during the pandemic and the results also suggest several new directions for future research, as discussed above. In conclusion, this study identifies role conflict and boredom as factors that impacted stress and alcohol consumption during the COVID-19 pandemic. Many of these effects appear to be here to stay and will continue to affect the lives and work environments of people around the world.

Disclosure statement

The authors report there are no competing interests to declare.

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Data availability statement

Data available upon request from the lead author.

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