**Detailed description of the research program**

**Can overqualification hurt your health?**

**A diary study examining work stress and unhealthy behaviors in Arab and Jewish Israelis**

**Scientific background**

An unfortunate feature of the modern workplace is that increasing numbers of people are employed in jobs that fail to make full use of their capabilities. Feeling underutilized can lead to career stagnation and a failure to experience personal growth through work. Perceived overqualification (POQ) is the perception that one possesses more education, experience, and/or knowledge, skills, and abilities, than what one’s job requires. This is a common and important problem generally, and especially in vulnerable populations where the rates of overqualification can exceed 50% of employees (e.g., the case of Canadian immigrants; Chen et al., 2010). Among vulnerable populations such as minorities or immigrants, POQ is a more widespread issue for several reasons including lower language fluency, cultural knowledge and social contacts as well as discrimination (Wassermann et al., 2017). Regardless of the reason, POQ is a serious problem across populations that can degrade employees’ general mental well-being (Harari et al., 2017).

POQ can be considered a work stressor, and it is well established that work stressors lead to adverse emotional, physiological, and behavioral outcomes (Bowling et al., 2015; Eatough et al., 2011; Nixon et al., 2011; Pindek, Arvan, et al., 2019), which can all be considered indicators of degraded mental well-being. Indeed, in their Meta-analysis, Harari et al. (2017) found that POQ is associated with poorer mental well-being, including psychological strain and worse mood. Nevertheless, an important omission in these prior investigations is that they have not examined the effects of POQ on health behaviors (behaviors that have a negative effect on health such as unhealthy eating or poor sleep hygiene behaviors, to name a couple). Moreover, POQ may not only lead to more unhealthy behaviors directly, but also increase employees’ sensitivity and vulnerability to other negative work events (stressors), particularly those that are theoretically relevant to the perception of overqualification. This is crucial to our understanding of how POQ negatively affects employees – not just as a direct stressor but also, likely, as a stable factor that renders employees *more reactive* to stressors that are encountered daily. Examining these aspects can extend what is already known on the mechanisms by which POQ affects employees’ mental and physical health.

In this proposed research (a resubmission of last year’s proposal which has significantly developed thanks to the insightful suggestions made by the reviewers), I focus on an important vulnerable population within Israel, the Arab minority group, and compare it with a Jewish sample. Recognizing that overqualification is an important predictor of mental well-being, especially in vulnerable populations such as minorities and immigrants (e.g., Chen et al., 2010; Wassermann & Hoppe, 2019), as well higher rates of many unhealthy behaviors in these populations, we can expect that the effects of POQ on the daily work stress process would be stronger in the Arab minority group. Furthermore, the proposed research uses a quantitative daily diary design which provides a detailed picture of participants’ day-to-day experiences leading to unhealthy behaviors, while comparing the patterns of daily experiences and behaviors between employees who perceive themselves to be overqualified and those who do not in the Jewish (majority) and Arab minority groups. This design is optimal for uncovering behavioral trends and will provide an invaluable theoretical basis for future interventions. Therefore, the main questions that this study aims to answer are: (1) Does POQ make employees more vulnerable to specific stressors, leading them to behave in unhealthy ways? (2) What is the process by which this effect unfolds? and, (3) Are these processes intensified in vulnerable populations such as Arab Israelis.

**Perceived overqualification and work stress**

The most commonly referenced theoretical framework explaining how POQ affects employee well-being is relative deprivation theory (Crosby, 1984; Erdogan & Bauer, 2021; Erdogan et al., 2018). According to this theory, POQ generates a feeling of being deprived from the job one deserves, including the expected opportunities, status and pay, and interpersonal relationship that would have come with the hypothetical better job. Feeling that their job is beneath them, individuals experience a whole host of negative outcomes, including dissatisfaction and decreased well-being (Erdogan & Bauer, 2021; Harari et al., 2017). Relative deprivation theory is tightly linked to anger and resentment (Smith & Pettigrew, 2015), positioning anger as a mediator that leads to additional negative outcomes. In a recent study, my colleagues and I show that in addition to anger, boredom is an important pathway linking POQ with behavioral outcomes (Andel et al., 2021). Therefore, employees with POQ experience more anger and boredom (reflecting emotional distress, which over time degrades mental health), with both emotions uniquely contributing to negative outcomes. This prior research helped expand the rather basic understanding of the underlying mechanism linking POQ to negative outcomes for employees.

I propose that in addition to the now established effects that POQ has on individuals’ average levels of boredom and anger, that POQ might exacerbate the effects of other work stressors that are encountered daily, particularly those stressors that signal the deprivation in the employee’s work situation. Specifically, when a person who perceived themselves to be overqualified is faced with a work situation that highlights that they are overqualified for the job (such as having to do unchallenging work, or being assigned illegitimate or demeaning tasks) the negative outcomes may be more severe than if that person did not perceived themselves to be overqualified, in line with the principles of situation trait relevance (Tett & Guterman, 2000). Therefore, in the current proposal, I focus on those negative work events (stressors) that are most likely to elicit feelings of relative deprivation. The two chosen stressors, illegitimate tasks and unchallenging work, are likely to elicit anger and boredom (respectively). I propose that POQ exacerbates the effects of those stressors on those typical affective responses. In this proposal, I also want to expand the examined outcomes and examine the indirect effects on unhealthy behaviors (moderated by general and specific personal tendencies for those behaviors). The overall theoretical research model is depicted in Figure 1.

Figure 1: Study Model

General & Behavior specific personal tendencies

Overqualification

Between person level

Within person level

Illegitimate tasks

Negative emotions (anger & boredom)

Unhealthy behaviors

Unchallenging work

**Why do negative work events lead to unhealthy behaviors?**

Affective events theory (Weiss & Beal, 2005; Weiss & Cropanzano, 1996) emphasizes the emotional experience of workplace events. When employees encounter negative work events (i.e., stressors), they immediately experience emotions that lead to short-term attitudes and affective-driven behaviors. The link between negative work events and the immediate affective and attitudinal responses of employees is well established. In a recent meta-analysis of daily diary studies (i.e., studies that use repeated daily measures of variables in order to separate within person fluctuations from more stable, between person effects), my colleagues and I found that a variety of work stressors had a significant association with affective strain outcomes (Pindek, Arvan, et al., 2019). Conversely, the link between work stressors and health behaviors has not received adequate attention, with only a handful of studies examining each type of unhealthy behavior.

Some unhealthy behaviors, while extremely important, are only relevant to parts of the population (e.g., smoking), and therefor in the current proposed study I focus on unhealthy eating and poor sleep hygiene behaviors. The association between work stress and ***unhealthy eating*** (i.e., consuming food and drink that is unhealthy as well as overeating; Liu et al., 2017) was shown in several previous diary studies that examined work stressors such as self-control demands (Sonnentag et al., 2017), and job demands and mistreatment (Liu et al., 2017). General perceived stress was also associated with less healthy eating (Li et al., 2020). The link between negative work events and ***poor sleep hygiene*** (i.e., behaviors that negatively impact sleep quality such as smartphone use before bedtime; Yang et al., 2010), has not yet been directly examined at the daily level. Cross-sectional finding support a strong association between overall levels of sleep hygiene and both lower self-control as well as higher levels of strain (Barber et al., 2013). Furthermore, poor sleep hygiene is associated with poor sleep. For example, one diary study focused on late-night use of mobile devices resulted in reduced sleep quality (Kühnel et al., 2021). Therefore, prior studies that examined the effects of daily negative work events on sleep problems may be used to indicate at least some support for the proposed effects. One such study, conducted at the daily level, found that social exclusion (a type of mistreatment) predicted more fragmented sleep that night (Pereira et al., 2013). Another study found workload predicted impaired sleep (Radstaak et al., 2014). Radstaak et al. (2014) examined sleep onset latency as an indicator of sleep quality. This is very relevant to the current study because sleep hygiene behaviors likely have a direct impact on sleep onset latency and going to bed later is an indicator of poor sleep hygiene.

The dearth of research examining health behaviors as a response to negative work events and the very limited scope of those events is surprising, considering that unhealthy behaviors such as poor eating and poor sleep hygiene, are a crucial link between work stress and maintaining health and well-being in the modern world. This is because on the one hand these short-term responses to stress are under the control of the individual, and on the other hand they contribute to cumulative health problems over time (Geurts & Sonnentag, 2006). Therefore, unpacking how work stress affects poor behavioral choices has a tremendous potential for impact on the long-term health and well-being of all employees. This may be particularly important in vulnerable populations where stress levels may be higher and unhealthy behaviors may be more common (e.g., obesity rates are substantially higher in parts of the Arab population in Israel; Keinan-Boker et al., 2005).

**Which negative work events are more likely to elicit stronger negative emotions for overqualified employees?**

As mentioned above, POQ likely results in negative outcomes because of the deprivation that individuals feel. Therefore, the focus of the current study is on daily stressors that are closely linked to feelings of deprivation, and that are expected to result in either anger or boredom. An important distinction between these two negative emotions is their level or arousal (Russell, 1980): High arousal emotions, such as anger and anxiety, are expected to result more from stressful events such as illegitimate tasks (Basch & Fisher, 1998; Pindek, Demircioğlu, et al., 2019), while low arousal emotions such as boredom are expected to arise more in response to unchallenging work (e.g., underload; Pindek et al., 2018). Thus, the focus of the current proposal is on specific daily work stressors that signal the deprivation associated with POQ, and that elicit anger or boredom, in line with the typical emotional responses to POQ.

The first stressor, ***illegitimate tasks***, is defined as assigned tasks that violate the normative expectations from the employee, because they are unnecessary to do at all, or they are unreasonable for that employee (Semmer et al., 2010). The main affective response to illegitimate tasks is anger (Pindek, Demircioğlu, et al., 2019). Illegitimate tasks signal disrespect or inadequacy (Meier et al., 2012; Semmer et al., 2007) and therefore can make the deprivation more salient. For example, if an employee feels unvalued on a specific day because they were assigned an unreasonable task, they may consequently ponder on deserving a better job. Moreover, employees with high POQ may find illegitimate tasks particularly disrespectful because they feel their qualifications exceed even the legitimate requirements of the job, making those daily illegitimate requirements even worse.

The second stressor, ***unchallenging work***, is work that does not provide an opportunity to meet the basic psychological need for competence (Deci & Ryan, 2000). When the demands of the job are too low, there is too little to do or the tasks themselves present a low mental demand, employees experience boredom (Fisherl, 1993; Pindek et al., 2018). For those employees who perceive themselves to be overqualified, and who typically feel the job is beneath them, days when the work in unchallenging may be particularly boring, as the tasks are even farther than what they feel they can handle.

Both stressors, leading to anger and boredom, are likely to lead to an increase in unhealthy behaviors. Furthermore, both stressors signal the deprivation associated with POQ and I therefore expect them to have a greater negative effect on employees who perceive themselves to be overqualified. These associations are expected to be stronger in vulnerable populations that have higher rates of POQ, as well as unhealthy behaviors and their associated long-term health problems.

**General and domain specific personal characteristics as a moderator of the effects of negative work events on unhealthy behavioral choices**

Based on the theoretical development presented above, negative work events should lead to affectively driven unhealthy behaviors, but individuals vary in their ability to control their emotional and behavioral responses (i.e., trait self-control; Tangney et al., 2004). Individuals with high trait self-control generally experience less daily stress and stress variability (Nielsen et al., 2020), better psychological adjustment and a better ability to self-regulate impulsive behaviors generally (e.g., less binge eating and alcohol abuse; Tangney et al., 2004). This increased capacity of self-control also results in better coping with stressors, including fewer impulsive behaviors in response to them (e.g., Lian et al., 2014). I therefore propose that trait self-control would buffer the effects of work stressors on unhealthy behaviors via negative emotions.

Moreover, the proposed research focuses on two specific prominent unhealthy behaviors, assuming that individuals may vary in their tendencies to respond to stress with specific impulsive behaviors: some “eat their feeling” (Liu et al., 2017), while others may procrastinate before bedtime (Kühnel et al., 2018). Following this logic, I propose that person level moderators that capture the individual tendencies to engage in each type of behavior (e.g., emotional eating style, late chronotype) would exacerbate the effects.

Unhealthy eating in response to affective events is more likely in individuals with an ***emotional eating style***, defined as the tendency to eat in response to negative emotions. This is a prevalent eating style and it is associated with weight gain over time (Koenders & van Strien, 2011). Emotional eating is particularly relevant for the study of work stress because employees can face stressful situations at work on a frequent basis, which typically result in negative emotions (Pindek, Arvan, et al., 2019). Individuals with a stronger emotional eating style often react to such negative emotions with excessive eating or with choosing unhealthy foods (Keller & Siegrist, 2015; van Strien et al., 1986). Therefore, the effects of work stressors on unhealthy eating via negative emotions are expected to be stronger for those with a stronger emotional eating style.

Similarly, some individuals are more likely than others to exhibit poor hygiene behaviors. One important individual difference in this regard is the ***chronotype***, which represents differences in individual’s preferences for the timing of sleep, ranging from “early larks” to “late owls” (Roenneberg et al., 2003). On workdays, those with a late chronotypes have to wake up earlier than they prefer, and have a harder time falling asleep earlier as well. This explains why late chronotypes are prone to more bedtime procrastination (Kühnel et al., 2018) and poorer sleep hygiene generally (Lin & Chung, 2022). Late chronotypes perceive more job stressors, and a cross-sectional study also showed they had a stronger association between job stressors and mental health symptoms (Togo et al., 2022). Therefore, the effects of work stressors on poor sleep hygiene behaviors via negative emotions are expected to be stronger for those with a late chronotype.

Importantly, eating and sleeping behaviors are distinct but linked, because consuming food and drink late at night pertains both to unhealthy eating and to poor sleep hygiene. These two behaviors were chosen for this proposed research because they are relevant to all employees (as opposed to other impulsive unhealthy behaviors such as smoking or drinking alcohol) and affect overall health. Therefore, findings from this proposed research will have substantial implications for our understanding of how POQ can affect employee health by highlighting daily work stressors.

**Research objectives & expected significance**

The main objective of the proposed study is to understand how overqualification can affect the mental health of vulnerable and non-vulnerable working populations. It will explore how negative work events associated with overqualification and that signal deprivation (i.e., illegitimate tasks and unchallenging work) relate to mental health (emotional distress and maladaptive health behaviors). This expected pattern is likely true for the general population but conceivably more pronounced in vulnerable populations where overqualification is a more prevalent problem and unhealthy behaviors have a higher base rate. Therefore, I focus on the Arab minority group in Israel, which indeed has higher rates unemployment and overqualification as well as unhealthy behaviors than in the Jewish population (e.g., Keinan-Boker et al., 2005). I will compare results from the two populations.

The proposed research is expected to provide invaluable insights into the underlying mechanism and negative impact of overqualification on mental health, including emotional distress and unhealthy behaviors. Therefore, this research is of interest to the academic community in both the occupational domain and the public health domain, and likely published in a top-tier scientific journal. Moreover, insights gained from this research can be used by practitioners in terms of career counseling to assist potential employees from vulnerable and non-vulnerable populations in finding a better match between their qualifications and their jobs. The results can also be used by individuals trying to make a positive change in their eating and sleeping habits, because implementation of changes works best when tailored to the reasons for unhealthy behaviors (Adriaanse et al., 2009). In this context, knowing what elements in the work environment trigger unhealthy behaviors is an important step in changing eating and sleeping habits. Ultimately, this line of research ties work stress to important health issue that are not well understood but have implications not only for vulnerable populations but for all individuals, and for society as a whole.

The results from the current study examine an array of interconnected stressors, emotions and unhealthy behaviors, and are thus likely to be of broad interest to researchers. Therefore, this study has the potential to ignite additional research in different domains. For example, researchers interested in the spillover of work stress into the home domain may build on the current study and examine the effects of unhealthy eating and poor sleep hygiene on the spouse. For example, if one partner eats an unhealthy dinner while at home, does it increase the likelihood that the other partner will join? This is just one potential avenue for future research. There are many ways to build upon the findings from the proposed research, which will likely increase its impact substantially.

**Detailed description of the proposed research**

The model depicted in Figure 1 proposes that POQ is associated with higher average levels of anger and boredom, as well as higher levels of unhealthy behaviors. At the daily level, stressors that signal the individual’s overqualification (illegitimate tasks and unchallenging work) will be related to unhealthy behaviors during and after working hours (unhealthy eating and poor sleep hygiene), via negative emotions. Person level characteristics will moderate these relationships such that the events-emotions relationships will be stronger for those with high levels of POQ. Furthermore, the emotions-unhealthy behaviors relationships will be stronger for individuals with low self-control of with tendencies to respond to negative emotions with each specific unhealthy behavior (e.g., those with an emotional eating style are more likely to respond to work stress by eating more and making poorer food choices). Accordingly, I propose the following hypotheses.

**Working hypotheses**

1. POQ is associated with higher average levels of anger and boredom
2. POQ is associated with higher average levels of unhealthy behaviors (unhealthy eating and poor sleep hygiene)
3. Day level negative work events (illegitimate tasks and unchallenging work) are positively related to unhealthy behaviors (unhealthy eating and poor sleep hygiene).
4. The relationships between day level illegitimate tasks and unhealthy behaviors are mediated by anger.
5. The relationships between day level unchallenging work and unhealthy behaviors after work are mediated by boredom.
6. POQ moderates the relationships between day level negative work events (illegitimate tasks and unchallenging work) and negative emotions (anger and boredom), such that the relationships are stronger for those with high levels of POQ.
7. Trait self-control moderates the direct and indirect relationship between day level negative work event (job demands and mistreatment) and unhealthy behaviors (unhealthy eating and poor sleep hygiene), such that the relationships are stronger for those low in self-control.
8. Personal tendencies to engage in specific unhealthy behaviors (emotional eating style, late chronotype) moderate the direct and indirect relationship between day level negative work event (job demands and mistreatment) and the corresponding unhealthy behaviors (unhealthy eating and poor sleep hygiene, respectively), such that the relationships are stronger for those high on those personal tendencies.

In addition to the working hypotheses that comprise the study model, I also expect the associations to be generally stronger in Arab Israelis compared to Jewish Israelis.

**Research design and methods**

Sample and procedure

The main sample will include a total of 300 full time employees: 150 Arab Israelis and 150 Jewish Israelis, who work the normal working schedule and have a mobile phone. A power analysis (Spybrook et al., 2011) indicated that with a sample size of about 150, there is a power of 0.8 to detect within-level betas of 0.20 with 6-8 days of data per person, and therefore this sample size is big enough. Participants will be recruited using the services of Geocartography Knowledge Group. This Israeli organization has a large (over 150,00) prerecruited online panel which allows for stratified samples. Thus, they can ensure Jewish and Arab samples of full-time employees with sufficient variability in age, gender, socioeconomic status, etc. Participants will be informed of the requirements, and those who agree to participate will complete an initial survey consisting of the person-level measures (for that, they will receive a small compensation from Geocartography Knowledge Group). In addition, participants will provide their email address and phone number. This information will be used by the research assistants (Arab and Hebrew speaking for the Arab and Jewish samples, respectively) who will set up a welcome and training session (conducted using a video platform such as Zoom). During this meeting, the research assistant will train the participant on the data collection procedure, including how reminders for the daily surveys will be sent over email, and what is required from them in each survey. The compensation schedule will also be explained. Compensation will be given based on the proportion of surveys each participant completes, with a bonus for those completing 80% or more of surveys (the maximal compensation will be the equivalent of approximately 75 USD).

The email addresses will be used by the Qualtrics software to automatically send the four daily surveys for 10 consecutive workdays. Email addresses will be kept separate from participants’ responses and will be deleted after participants receive the gift-cards, thus ensuring participant anonymity. Each workday will feature a mid-day survey (sent at 12:00) and an after-work survey (sent at 17:00) capturing work experiences, as well as an evening survey (sent at 21:00) and a next-morning (sent at 6:00) survey capturing after work experiences. The four daily surveys will be short, requiring about 3-5 minutes to complete. This is important for participant retention.

The mid-workday and after-work surveys will include self-reported measures of the negative work events (illegitimate tasks and unchallenging work), negative emotions, and unhealthy eating, referring to the first half and second half of the workday, respectively. Measuring the stressors and emotions at two time points in the day will allow more confidence in establishing the direction of effects. The evening survey will include self-reports referring to the participants’ time after work and capturing their eating. The following morning survey will capture late night eating and sleep hygiene behaviors.

After completing the diary surveys, participants will be compensated and debriefed. This debriefing will include providing them with a detailed report of their unhealthy behaviors, which is likely to attract participants to take part in the study beyond the monetary compensation for their time. I have recruited participants (e.g., university staff employees, nurses) for diary studies using email invitations in the past and considering the adequate monetary incentive and personalized feedback that participants will receive, recruiting the required sample should not be difficult.

Statistical analyses

The structure of the data is multilevel, with daily measurements nested within each participant in the two groups in the study. Therefore, Multilevel Structural Equation Modeling (MSEM) will be used with the Mplus software (Muthén & Muthén, 1998-2012) to examine the fit of the proposed model to the data as well as the individual paths. The robust full-information maximum likelihood (MLR) estimator will be used to obtain robust standard errors while using all available data without imputations. I will model random effects (intercepts and slopes) and test all hypotheses as part of a single model, in line with current best practices.

Measures

Response options range from 1 (strongly disagree) to 5 (strongly agree) for all variables except the demographics, unless stated otherwise. I rely on established self-report measures that have been validated in previous research. They have all exhibited good internal-consistency reliabilities. All measures will be back-translated to Arabic by two Arab speaking research assistants (including the Ph.D. student) for the Arab Israeli sample. In addition to the self-reported measures, an objective measure of overqualification will be used. This is an important part of the study design, because supporting at least some hypotheses with cross-source data would resolve many common method concerns (Podsakoff et al., 2003) and increase the validity of the results.

*Person-level measures*

1. Demographic variables: Age, gender, marriage status, job tenure, average weekly work hours, religion and religiosity, occupation, general health, weight/height. I will also assess the general level of all the daily variables (using the same scales, with an adapted time reference).
2. Negative affectivity: This is a common control variable in research on work stress and will be measured using the 10-item PANAS (Watson, Clark, & Tellegen, 1988).
3. Perceived overqualification (POQ): Assessed with the 9-item Scale of Perceived Overqualification (Maynard et al., 2006). A sample item is “I have more abilities than I need in order to do my job”.
4. Objective overqualification: Assessed according to the method in Arvan et al. (2019) by comparing the self-reported education, skill and cognitive ability (using the Israeli Psychometric Test instead of SAT scores) with the required levels of education, skill and cognitive ability for each job. The required levels for each job will be extracted directly from O\*NET, as and additionally assessed (using the O\*NET questionnaires) by the participants themselves for validity purposes.
5. Trait self-control: Assessed using the 13-item Brief Self-Control Scale (Tangney et al., 2004) A sample item is “I am good at resisting temptation”.
6. Emotional eating style: Assessed with the 13-item emotional-eating scale of the Dutch Eating Behavior Questionnaire (van Strien et al., 1986). A sample item is “I have a desire to eat when I am irritated”. One subsection of this scale tackles high arousal emotions (e.g., anger, anxiety) as a cause for eating, and another tackles low arousal emotions (boredom).
7. Chronotype: Assessed with the Munich ChronoType Questionnaire (Roenneberg et al., 2003), which determines chronotype based on typical sleep behavior. The questionnaire consists of questions about typical sleep timing on workdays and on work-free days. Chronotype is operationalized as the midpoint of sleep on free days, corrected for ‘oversleep’ on free days, which is calculated from the sleep timing data (Kühnel et al., 2018). Higher values represent a later midpoint of sleep and a later chronotype.

*Day-level measures*

1. Illegitimate tasks: The eight-item Bern illegitimate task scale (Semmer et al., 2015), adapted for daily use and referring to that morning/afternoon, will be used. A sample item is “This morning, I had work tasks to take care of, which kept me wondering if they should be done by someone else”
2. Unchallenging work: The five-item qualitative workload scale (Schmidt, 2007), adapted for daily use and referring to that morning/afternoon will be used in reverse, to reflect low qualitative workload. An example item is “This morning, I engaged in high complexity tasks”.
3. Boredom: Three items from the boredom as strain scale (Pindek et al., 2018), adapted for daily use, will be used. A sample item is “I felt bored at my job this morning”.
4. Anger: Three items from the JAWS (Van Katwyk et al., 2000) will be used. Participants will indicate whether they are experiencing the following emotions about work at the relevant time frame: angry, anxious, and furious.
5. Unhealthy eating: Assessed with the four-item scale developed by Liu et al. (2017). The scale will include examples for unhealthy foods (e.g., fried food, sweet snacks, or sugary drinks). All items refer to types of unhealthy eating behaviors at the relevant time frame. Sample items are “This afternoon I had too many unhealthy snacks”, and “This afternoon I ate and drank excessively”.
6. Sleep hygiene behaviors: Assessed with an adapted checklist based on the arousal related behaviors and eating/drinking behaviors subscales (total of 15 items) from the Sleep Hygiene Practice Scale (Yang et al., 2010). These subscales were chosen because they are more readily adaptable to a daily focus. Example items are “last night, I did sleep-irrelevant activities in bed (watch TV or use my phone)” and “last night I drank caffeinated drinks (coffee, tea, coca-cola) within four hours prior to bedtime”. Responses options range from 1 (not at all) to 5 (a lot). It is important to note that the sleep hygiene measure is not expected to show internal consistency, because the variable is theoretically comprised of different behaviors and therefore the scale is formative (Yang et al., 2010).

**Preliminary results**

Preliminary results from a pretest study support the feasibility of the proposed research, as well the part of the hypothesized model that was tested. Results are based on 131 employees recruited via an online company in Israel (Panelview.co.il) to partake in a 5-day diary study. The sample (49% males) included a wide variety of occupations and had a mean age of 40 (SD = 10). A multilevel, random-effects model was estimated using the Mplus software (Muthén & Muthén, 1998-2012). The model is shown in Figure 2. The results indicated that underload (a form of unchallenging work) resulted in boredom, which then led to the consumption of more unhealthy snacks, for employees with a high (+1SD) emotional eating style (slope = 0.25, p < .05). This effect was not apparent for those with a low (-1SD) emotional eating style, who actually consumed less unhealthy snacks (slope = -0.26, p < .05), see Figure 3. As evident from these preliminary results, the proposed research is feasible and the idea that the choice of unhealthy behaviors is not constant across individuals is promising. Nevertheless, the proposed research is much broader and more comprehensive, making it very appropriate for top tier publication outlets.

Figure 2: Daily underload predicts unhealthy snacking indirectly via boredom, moderated by emotional eating style (\* p < .05, \*\* p < .01. Within level N = 538, between level N = 131)

Emotional eating style

Between-person level

Within-person level

Underload

Boredom

.29\*

Unhealthy snacking

.20\*\*

.00

Figure 3: Within-person daily boredom predicts unhealthy snacking for employees with high and low emotional eating style (Within level N = 538, between level N = 131)

**Conditions for performing the research**

I have the necessary experience to conduct this type of research (e.g., Pindek et al., 2020). I will recruit a Ph.D. student and four additional B.A. or M.A. students as research assistants, Arab and Hebrew speaking, from the pool of undergraduate and graduate students in my department. For example, one of my current M.A. students is writing a thesis on overqualification among Arab Israelis. This student will likely have started his Ph.D. around the time the proposed study will commence. Therefore, the conditions for performing this research are favorable.

**Expected results & potential pitfalls**

While the preliminary results seem promising, it is possible that not all direct paths from events to behaviors will be supported. If indeed only one of the two types of negative work events, or only some of the unhealthy behaviors are supported by the results, theoretical explanations for this pattern can be discussed in the paper. An advantage of examining several types of behaviors simultaneously is that post-hoc analyses that are replicated across the three behaviors will be more trustworthy. For example, Jones et al. (2007) who examined several unhealthy behaviors (snacking, smoking, exercise, alcohol, caffeine consumption) found consistent differences between men and women in what predicted these unhealthy behaviors. Furthermore, results based only on the self-reported measures may not replicate with objective data. This is a known problem (for example, objective and subjective assessments of sleep often do not converge), which is typically dealt with by treating the two measures as theoretically distinct, each leading to potentially different outcomes (Mullan, 2014). In this study, objective and perceived overqualification may not have the same effect, with perceived overqualification likely having a stronger effect as my colleagues and I showed in the past (Arvan et al., 2019). Therefore, it has the potential to increase but not to diminish the contribution of the study.

A second potential problem is that the individual training of participants cannot be done for everyone at the same time, and the study can only be conducted in two-week stretches with no holidays. This will be handled by allowing sufficient time and enough research assistants for the data collection phase of the study. Furthermore, because of the lasting effects of the COVID-19 pandemic on flexibility in terms of working from home, I will also allow and statistically account for remote-working days. On days when employees are working from home, they have increased autonomy and ability to engage in the unhealthy behaviors that are included in the current study. Nevertheless, they may experience fewer negative work events resulting from that same autonomy. Therefore, this variability will likely enrich the results.

Finally, while Geocartography Knowledge Group is a well-respected and trustworthy organization in Israel, if the Aran Israeli sample that is recruited through their representative online panel is too small, I can recruit additional participants via email invitations, using the department’s pool of students who have graduated, as my colleagues and I have done in the past (Arvan et al., 2019). Approximately half of the students in my department’s B.A. program are Arab Israelis, and they are mostly employed in non-licensed occupations, which ensures greater variability in their overqualification.

**Bibliography**

1. Adriaanse, M. A., de Ridder, D. T. D., & de Wit, J. B. F. (2009). Finding the Critical Cue: Implementation Intentions to Change One's Diet Work Best When Tailored to Personally Relevant Reasons for Unhealthy Eating. *Personality and Social Psychology Bulletin*, *35*(1), 60-71.
2. Andel, S., Pindek, S., & Arvan, M. L. (2021). Bored, angry, and overqualified? The high- and low-intensity pathways linking perceived overqualification to behavioural outcomes. *European Journal of Work and Organizational Psychology*, 1-14.
3. Arvan, M. L., Pindek, S., Andel, S. A., & Spector, P. E. (2019). Too good for your job? Disentangling the relationships between objective overqualification, perceived overqualification, and job dissatisfaction. *Journal of vocational behavior*, *115*, 103323.
4. Barber, L., Grawitch, M. J., & Munz, D. C. (2013). Are better sleepers more engaged workers? A self‐regulatory approach to sleep hygiene and work engagement. *Stress and Health, 29*(4), 307-316.
5. Basch, J., & Fisher, C. (1998). Affective events–emotions matrix: A classification of work events and associated emotions. *School of Business Discussion Papers*, *Paper 65*.
6. Bowling, N. A., Alarcon, G. M., Bragg, C. B., & Hartman, M. J. (2015). A meta-analytic examination of the potential correlates and consequences of workload. *Work & Stress*, *29*(2), 95-113.
7. Chen, C., Smith, P., & Mustard, C. (2010). The prevalence of over-qualification and its association with health status among occupationally active new immigrants to Canada. *Ethnicity & Health*, *15*(6), 601-619.
8. Crosby, F. (1984). Relative deprivation in organizational settings. *Research in organizational behavior*, *6*, 51-93.
9. Deci, E. L., & Ryan, R. M. (2000). The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, *11*(4), 227-268.
10. Eatough, E. M., Chang, C.-H., Miloslavic, S. A., & Johnson, R. E. (2011). Relationships of role stressors with organizational citizenship behavior: A meta-analysis. *Journal of Applied Psychology*, *96*(3), 619-632.
11. Erdogan, B., & Bauer, T. N. (2021). Overqualification at Work: A Review and Synthesis of the Literature. *Annual Review of Organizational Psychology and Organizational Behavior*, *8*(1), 259-283.
12. Erdogan, B., Tomás, I., Valls, V., & Gracia, F. J. (2018). Perceived overqualification, relative deprivation, and person-centric outcomes: The moderating role of career centrality. *Journal of vocational behavior*, *107*, 233-245.
13. Fisherl, C. D. (1993). Boredom at Work: A Neglected Concept. *Human Relations*, *46*(3), 395-417.
14. Geurts, S. A. E., & Sonnentag, S. (2006). Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment. *Scandinavian journal of work, environment & health*, *32*(6), 482-492.
15. Harari, M. B., Manapragada, A., & Viswesvaran, C. (2017). Who thinks they're a big fish in a small pond and why does it matter? A meta-analysis of perceived overqualification. *Journal of vocational behavior*, *102*, 28-47.
16. Jones, F., O'Connor, D. B., Conner, M., McMillan, B., & Ferguson, E. (2007). Impact of daily mood, work hours, and iso-strain variables on self-reported health behaviors. *Journal of Applied Psychology*, *92*(6), 1731-1740.
17. Keinan-Boker, L., Noyman, N., Chinich, A., Green, M. S., & Nitzan-Kaluski, D. (2005). Overweight and obesity prevalence in Israel: findings of the first national health and nutrition survey (MABAT). *Israeli Medical Association Journal*, *7*(4), 219-223.
18. Keller, C., & Siegrist, M. (2015). Does personality influence eating styles and food choices? Direct and indirect effects. *Appetite*, *84*, 128-138.
19. Koenders, P. G., & van Strien, T. (2011). Emotional eating, rather than lifestyle behavior, drives weight gain in a prospective study in 1562 employees. *Journal of Occupational and Environmental Medicine*, *53*(11), 1287-1293.
20. Kühnel, J., Diestel, S., & Melchers, K. G. (2021). An ambulatory diary study of mobile device use, sleep, and positive mood. International Journal of Stress Management, 28(1), 32.
21. Kühnel, J., Syrek, C. J., & Dreher, A. (2018). Why don’t you go to bed on time? A daily diary study on the relationships between chronotype, self-control resources and the phenomenon of bedtime procrastination. Frontiers in psychology, 77.
22. Li, Y., Deng, J., Lou, X., Wang, H., & Wang, Y. (2020). A daily diary study of the relationships among daily self‐compassion, perceived stress and health‐promoting behaviours. International Journal of Psychology, 55(3), 364-372.
23. Lian, H., Brown, D. J., Ferris, D. L., Liang, L. H., Keeping, L. M., & Morrison, R. (2014). Abusive supervision and retaliation: A self-control framework. Academy of Management Journal, 57(1), 116-139.
24. Lin, S. Y., & Chung, K. K. H. (2022). Chronotype and trait self-control as unique predictors of sleep quality in Chinese adults: The mediating effects of sleep hygiene habits and bedtime media use. Plos one, 17(4), e0266874.
25. Liu, Y., Song, Y., Koopmann, J. M., Wang, M., Chang, C.-H., & Shi, J. (2017). Eating your feelings? Testing a model of employees’ work-related stressors, sleep quality, and unhealthy eating. *Journal of Applied Psychology*, *102*(8), 1237-1258.
26. Maynard, D. C., Joseph, T. A., & Maynard, A. M. (2006). Underemployment, job attitudes, and turnover intentions. *Journal of Organizational Behavior*, *27*(4), 509-536.
27. Meier, L. L., Semmer, N. K., & Spector, P. E. (2012). Unethical behavior as a stressor. In R. A. Giacalone & M. Promislo (Eds.), *Handbook of unethical work behavior: Implications for well-being.* (pp. 168–179). M.E. Sharpe.
28. Mullan, B. A. (2014). Sleep, Stress and Health: A Commentary. *Stress & Health*, *30*(5), 433-435.
29. Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus User’s Guide. Seventh Edition*. Muthén & Muthén.
30. Nielsen, K. S., Bauer, J. M., & Hofmann, W. (2020). Examining the relationship between trait self-control and stress: Evidence on generalizability and outcome variability. Journal of Research in Personality, 84, 103901.
31. Nixon, A. E., Mazzola, J. J., Bauer, J., Krueger, J. R., & Spector, P. E. (2011). Can work make you sick? A meta-analysis of the relationships between job stressors and physical symptoms. *Work & Stress*, *25*(1), 1-22.
32. Pereira, D., Meier, L. L., & Elfering, A. (2013). Short-term Effects of Social Exclusion at Work and Worries on Sleep. Stress and Health, 29(3), 240-252.
33. Pindek, S., Arvan, M. L., & Spector, P. E. (2019). The stressor–strain relationship in diary studies: A meta-analysis of the within and between levels. *Work & Stress*, *33*(1), 1-21.
34. Pindek, S., Demircioğlu, E., Howard, D. J., Eatough, E. M., & Spector, P. E. (2019). Illegitimate tasks are not created equal: Examining the effects of attributions on unreasonable and unnecessary tasks. *Work & Stress*, *33*(3), 231-246.
35. Pindek, S., Krajcevska, A., & Spector, P. E. (2018). Cyberloafing as a coping mechanism: Dealing with workplace boredom. *Computers in Human Behavior*, *86*, 147-152.
36. Pindek, S., Zhou, Z. E., Kessler, S. R., Krajcevska, A., & Spector, P. E. (2020). Workdays are not created equal: Job satisfaction and job stressors across the workweek. *Human Relations*.
37. Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903.
38. Radstaak, M., Geurts, S. A., Beckers, D. G., Brosschot, J. F., & Kompier, M. A. (2014). Work stressors, perseverative cognition and objective sleep quality: A longitudinal study among Dutch Helicopter Emergency Medical Service (HEMS) pilots. Journal of occupational health, 56(6), 469-477.
39. *Roenneberg, T., Wirz-Justice, A., & Merrow, M. (2003). Life between clocks: daily temporal patterns of human chronotypes. Journal of biological rhythms, 18(1), 80-90.*
40. Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*(6), 1161-1178.
41. Schmidt, K.-H. (2007). Organizational commitment: A further moderator in the relationship between work stress and strain? *International Journal of Stress Management*, *14*(1), 26-40.
42. Semmer, N. K., Jacobshagen, N., Meier, L. L., & Elfering, A. (2007). Occupational stress research: The “stress-as-offense-to-self” perspective. In J. Houdmont & S. McIntyre (Eds.), *Occupational health psychology: European perspectives on research, education and practice* (Vol. 2, pp. 43-60). ISMAI Publishing.
43. Semmer, N. K., Jacobshagen, N., Meier, L. L., Elfering, A., Beehr, T. A., Kälin, W., & Tschan, F. (2015). Illegitimate tasks as a source of work stress. *Work & Stress*, *29*(1), 32-56.
44. Semmer, N. K., Tschan, F., Meier, L. L., Facchin, S., & Jacobshagen, N. (2010). Illegitimate Tasks and Counterproductive Work Behavior. *Applied Psychology*, *59*(1), 70-96.
45. Smith, H. J., & Pettigrew, T. F. (2015). Advances in Relative Deprivation Theory and Research. *Social Justice Research*, *28*(1), 1-6.
46. Sonnentag, S., Pundt, A., & Venz, L. (2017). Distal and proximal predictors of snacking at work: A daily-survey study. *Journal of Applied Psychology*, *102*(2), 151-162.
47. Spybrook, J., Bloom, H., Congdon, R., Hill, C., Martinez, A., & Raudenbush, S. (2011). *Optimal design plus empirical evidence: Documentation for the “Optimal Design” software (version 3.01).*
48. Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High Self-Control Predicts Good Adjustment, Less Pathology, Better Grades, and Interpersonal Success. Journal of Personality, 72(2), 271-324.
49. Tett, R. P., & Guterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, *34*(4), 397-423.
50. Togo, F., Yoshizaki, T., & Komatsu, T. (2022). Interactive effects of job stressor and chronotype on depressive symptoms in day shift and rotating shift workers. Journal of Affective Disorders Reports, 9, 100352.
51. Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the job-related affective well-being scale (JAWS) to investigate affective responses to work stressors. *Journal of occupational health psychology*, *5*(2), 219-230.
52. van Strien, T., Frijters, J. E. R., Bergers, G. P. A., & Defares, P. B. (1986). The Dutch Eating Behavior Questionnaire (DEBQ) for assessment of restrained, emotional, and external eating behavior. *International Journal of Eating Disorders*, *5*(2), 295-315.
53. Wassermann, M., & Hoppe, A. (2019). Perceived Overqualification and Psychological Well-Being Among Immigrants. *Journal of Personnel Psychology*, *18*(1), 34-45.
54. Wassermann, M., Fujishiro, K., & Hoppe, A. (2017). The effect of perceived overqualification on job satisfaction and career satisfaction among immigrants: Does host national identity matter? *International Journal of Intercultural Relations*, *61*, 77-87.
55. Weiss, H. M., & Beal, D. J. (2005). Reflections on affective events theory. In *Research on emotion in organizations: The effect of affect in organizational settings* (Vol. 1, pp. 1-21). Elsevier.
56. Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews, Vol. 18* (pp. 1-74). Elsevier Science/JAI Press.
57. Yang, C.-M., Lin, S.-C., Hsu, S.-C., & Cheng, C.-P. (2010). Maladaptive sleep hygiene practices in good sleepers and patients with insomnia. Journal of Health Psychology, 15(1), 147-155.