Does This Building Make Me Look Fat? The Relationship Between Work from Home, Barriers and Facilitators to Nutrition and Exercise, and the Role of Stress

By

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ABSTRACT

Work-related stress has become a public health crisis, which is deeply concerning given the detrimental effects it can have on an individual's mental and physical well-being. It was hypothesized that barriers and facilitators of healthy decision making would be associated with healthy decision making. It was also hypothesized that work from home would be associated with barriers and facilitators of healthy decision making, as well as that barriers and facilitators would be associated with stress. Lastly, a mediation relationship was hypothesized of work from home and stress through barriers and facilitators of healthy decision making. A total of 214 participants engaged in a daily diary survey over a span of five consecutive workdays, reporting their daily dietary and exercise choices, daily factors that acted as barriers or facilitators of those choices, daily stress, and whether they worked from home. This study found support for the association of facilitators with healthy decision making, as well as support for the potential of remote work to decrease the barriers and facilitators of healthy decision making. There was also no support for the mediation relationship hypothesized. Organizations can use the knowledge of various barriers and facilitators of healthy decision making to redesign the organizational practices, create healthy interventions, and promote employee well-being to make it easier for employees to make healthy decisions. Implications & future directions are also discussed.

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Chapter 1

Introduction

According to the American Psychological Association (2011; 2020), work-related stress has continued to rise over the last decade and even further increased over the last few years due to the added pressures of a global pandemic (Bieńkowska et al., 2022). Stress has been shown to have detrimental effects on an individual's mental and physical well-being (Clay, 2011). As a result, stress has become a public health crisis (American Psychological Association, 2020). Researchers are now taking a closer look at our daily activities to answer the most basic questions about stress, health, and well-being. According to the American Psychological Association (2021), a well-balanced and nutritional diet is crucial for both physical and psychological well-being. Poor food choices have been linked to psychological concerns such as depression, mood disorders, and stress (Li et al., 2017; Woodruff et al., 2021). An imbalanced diet has also been associated with an increased risk of health conditions, such as cardiovascular disease and obesity (American Heart Association, 2021).

Regular exercise is also an important component of overall employee health and well-being. Stress contributes to a more sedentary lifestyle and an overall increase in weight (Woodruff et al., 2021). According to the World Health Organization, 39 % of adults were overweight (which is defined as a body mass index of 25 or higher) in 2016, and 13% were obese (which is defined as a body mass index of 30 or higher). To put those percentages into perspective, 1.9 billion adults worldwide are considered overweight, and 650 million are considered obese. Obesity can increase the risk of various chronic diseases, such as heart disease, stroke, diabetes, osteoarthritis, and cancer. These staggering numbers are even more concerning considering the continuously increasing demand for virtual work environments in

recent years. Remote work even further increases sedentary behaviors which impacts around 22 million people in the United States (Parker, 2023).

The drastic changes of working from home triggered by COVID may cause individuals to experience stress (Woodruff et al., 2021). Working from home may also lead to other health repercussions due to the adjustment of health choices (Lister et al., 2019). Healthy decision making can have barriers, such as increased ease of overeating, oversleeping, and working more frequently. Alternatively, working from home can facilitate healthy decision making, such as allowing more time for preparing homemade meals or exercising. The various barriers and facilitators to heathy decision making can also impact stress (Lister et al., 2019). The present study will explore the relationship between work from home and stress. Further, the study aims to examine the relationships between work from home and barriers and facilitators of nutrition and exercise to making healthy choices and their mediating relationship to stress. After all, proper nutrition and exercise are the foundation of overall health and well-being (Selye,1976). The study will be using checklists of workplace barriers and facilitators (Jackson et al., 2022) based on some of the commonly identified indicators of each: barriers of physical activity, barriers of nutrition, facilitators of physical activity, and facilitators of nutrition. This study is a replication and an extension of a previous study conducted on the barriers and facilitators to healthy decision making on nutrition and exercise (Mazzola et al., 2017). The initial study had a post-pandemic (September 2020) collection that included a work from home component and will therefore be utilized as the archival portion of this study. A chart depicting this can be found in the methods section.

Work stress has been defined in a variety of ways in past research, including defining stress as a stimulus, as a reaction, or as a process (Selye,1976). When it is considered a stimulus, work stress focuses on the characteristics or environment of the job, which tends to involve an adaptive response to one's work environment (Jackson & Frame, 2018). Further a stressful stimulus can also be triggered by individuals in the workplace. One example of stress as a stimulus can be role overload. This is when someone is unable to fulfill their work requirements due to the perception of excessive demands that can occur in the form of time constraints, effort, or abilities (Tang & Vandenberghe, 2020). Defining stress as a reaction focuses on the outcomes associated with how individuals adapt to their work stressors (Jackson & Frame, 2018). For example, an individual experiencing a great deal of continuous amounts of stress can become emotionally exhausted or even get to the point of burnout. When the way a person responds to a work stressor is maladaptive, this may result in the experience of strain. Broadly, stressors are the demands that individuals experience, while strains are the outcomes of those experiences (Griffin & Clarke, 2010). Finally, when work stress is defined as a process, it is referred to as a continual and ongoing experience that involves managing various job demands and responses to the associated environmental stressors (Griffin & Clarke, 2010). Regardless of how one defines stress, what seems to be present across each of these three approaches is that the human experience of stress depends entirely on whether the stressor is indeed appraised as a stressor.

Every person perceives different situations in distinct ways, and what might be stressful for one person may be incredibly exciting to another. Individual reactions to stressors can differ drastically from person to person and can be psychological, behavioral, or physiological (Griffin & Clarke, 2010). For the purposes of this study, work stress is defined as a continuous stimulus-

response process. In other words, individuals go through the process of identifying stimuli as stressors or non-stressors and responding accordingly. Further, it is this process that can lead to an increase in poor decision making and therefore decrease psychological and/or physical health (Beehr,1995). The stressor-strain process can also explain the mechanism by which stress is experienced. More specifically, stressors refer to an individual's perceived external demands (Demerouti et al., 2001), such as complications with role ambiguity, role conflict, workload, and time constraints. Strains are the individual psychological, behavioral, and physiological outcomes of the appraisal and coping process with the perceived external demands (Griffin & Clarke, 2010; Lin et al., 2014). In other words, strains are perceived as such when the assessment of external demands are seen as challenging.

Stress Theories

Job Demands-Control Model

There are several theories that have been utilized in the last 30 years to study stress. The job demands-control model proposed by Karasek and Theorell (1990) focuses on the degree of decision latitude (i.e., job control) individuals have over their required physical, psychological and/or emotional job demands. An example of decision latitude is an employee's ability to choose the projects they work on or the specifics of how to carry out their daily tasks. Examples of job demands can include time constraints, role conflict, or role ambiguity. There are two types of job control an individual can have: skill discretion and decision authority (Häusser et al., 2010). Skill discretion focuses on how often individuals can utilize a multitude of skills within their daily work (Häusser et al., 2010). An example of skill discretion for an individual working as computer programmer is using their communication, writing, leadership, creativity, or problem-

solving skills. Decision authority focuses on the amount of control individuals have to make decisions on tasks or projects (Van der Doef & Maes, 1998). An example of decision authority is the ability of an individual working as a computer programmer to control the deadlines or delivery method for their work-related tasks. It is similar to what is commonly known as job autonomy, which refers to the degree of independence an individual has within their task-related decisions (Häusser et al., 2010).

The job demands-control model proposes that occupational roles consist of two main components or dimensions: control and demands (Karasek & Theorell, 1990). Jobs are described based on the intensity of their demands and the amount of control an individual has within the role (Van der Doef & Maes, 1998). This allows jobs to be described though four characterizations: high-strain jobs consist of high demands and low control, active jobs consist of high demands and high control, low-strain jobs consist of low demands and high control, and passive jobs consist of low demands and low control (Karasek & Theorell, 1990). Higher demands and lower control can cause an increase in the level of strain individuals feel, as well as a potential for resulting illness or motivational learning (Karasek & Theorell, 1990). Inversely, the characteristics can also indicate whether there is an increase in motivational learning, which can facilitate new behavioral patterns (Dutheil et al., 2020). The model suggests that high job demands increase individual strain, but higher job control can potentially lessen the associated adverse effects that may result from high job strain (Griffin & Clark, 2010). The model is still supported today and is often used in stress, job satisfaction, and psychological well-being research (Häusser et al., 2010).

High-strain jobs have high levels of psychological demand and low levels of decisional latitude (Karasek & Theorell, 1990). Combat officer roles may be seen as high strain jobs due to the constant level of awareness they are required to have (i.e., high psychological demand), along with the military's strict regulations around following orders (i.e., low latitude). These types of job roles tend to have the most negative effects due to the experienced strain (Van der Doef & Maes, 1998). Active jobs have high psychological demands but also have high decisional latitude (Karasek & Theorell, 1990; Baka, 2020). A paramedics job may be described as active because they often encounter life or death situations (i.e., high demands) but they have flexibility in how they treat each situation (i.e., high latitude). Low strain jobs are high in decisional latitude and low in psychological demand, which can include occupations that involve various types of requirements (Karasek & Theorell, 1990). Delivery drivers (i.e., Doordash) may be considered low strain jobs due to the immense variability they have in the tasks they take (i.e., high latitude) and the low efforts it requires as many times they don't even have to leave their vehicles (i.e., low demands). This category of job type is considered to be the ideal due to the low levels of job stress they tend to inflict (Baka,2020). This is not to say that there are no other stressors experienced by this job category. These stressors can include concerns related to psychosocial and monetary rewards (Karasek & Theorell, 1990). Finally, passive jobs such as factory workers are low in both psychological demand and decision latitude, which may sound leisurely but have been associated with a decrease in previously learned skills and abilities (Karasek & Theorell, 1990). This model is still fully supported today in various industries, and more recently has been expanded to offer a positive impact on the strain experienced in higher demand roles or lower control roles by support from coworker or supervisors (Baka, 2020).

When considering the relationship between job demands, latitude, and strain, **s**ome degree of job demands is necessary for effective job performance, such as individual challenges and deadlines. Job demands can have positive effects, such as job satisfaction, when the requirements are met and overcome (Karasek & Theorell, 1990). However, when job demands are too high, this can lead to negative psychological and physical strain (Karasek & Theorell, 1990). Research has shown a significant link between high job stress and physical illness. For example, high job stress has been shown to have an increased risk of high blood pressure and hypertension (Vrijkotte et al.,2000), heart disease (Kario et al.,2003) high cholesterol (Cathey et al., 1962), arthritis (Amick et al., 1998), and gastrointestinal diseases (Labanski et al., 2020). Research also suggests that high job stress can also lead to negative psychological consequences, including emotional exhaustion (Bakker et al., 2007), depression (Caspi et al., 2003), prolonged fatigue (Häusser, et al.,2010), and anxiety (Ketchesin et al., 2017).

Job Demands Resources Model

A more recent theory used to study stress is the Job Demands-Resources Model. The Job Demands-Resources (JDR) Model divides job characteristics into two basic groups: job demands and job resources. Job demands can be any characteristic of the job that may require the individual to exert some sort of effort (Bakker & Demerouti, 2007). Examples of job demands can include high levels of physically or psychologically difficult work conditions, or a high degree of specific skills. The associated job demands can in turn, have physical or psychological costs on the individual depending on the degree of effort the demands require (Bakker et al., 2007). Job resources are features of the job that aid in accomplishing individual work goals or lessening some demands of the job (Bakker & Demerouti, 2007). Examples of job

resources include job aids for highly fluctuating roles, organizational feedback, support, or safety equipment for hazardous environments. Job resources can also include anything that reduces the mental strain from corresponding job demands (Bakker et al., 2007). (Bakker & Demerouti, 2007). Bakker et al. (2005) tested the effect of job resources on strain with 1,000 higher education employees. Their findings supported the notion that individuals with low job demands (in the form of work overload, emotional demands, and physical demands) and high job resources (such as autonomy, social support, or feedback) had lower levels of strain (Bakker & Demerouti, 2007).

The JDR Model indicates that job demands can lead to the development of negative mental and physical health consequences (Bakker & Demerouti, 2007). Previous research on occupational stress-related health concerns, such as exhaustion, have been identified and heavily researched using the JDR Model (Adil & Baig, 2018). Emotional exhaustion is one of the prominent symptoms of burnout and can significantly impact overall employee well-being (Demerouti et al., 2001). Demerouti et al., 2001). Bakker et al. (2004) previously examined the presence of burnout in 374 employees across various occupations and found that job demands are a determining factor in increased adverse outcomes. Research suggests that a lack of job resources can lead to employee disengagement from their workplace and may arise parallel to the occurrence of exhaustion (Demerouti et al., 2001). The presence of adequate job resources can significantly decrease the potential for negative occupational outcomes. Furthermore, ample job resources can even increase employee engagement and organizational commitment (Bakker & Demerouti, 2007).

Stress

Stress can be conceptualized as the interaction caused by a situational stressor and an individual's response to the challenges presented (Harrison & Stephens, 2019). Stressors can cause psychological (ex., fear, tension, anxiety), physiological (cortisol, epinephrine, interkuken-6), and/or psychosomatic (ex., sleep disturbance, headache, fatigue) responses that may elicit immediate and long-term effects (Ganster & Rosen, 2013). These responses have been linked to unhealthy behaviors such as poor nutritional choices, physical inactivity, smoking, and excessive alcohol consumption (Heikkilä et al., 2013). People tend to engage in these kinds of unhealthy behaviors in an effort to reduce some of the strain experienced from stressors (Ng & Jeffery, 2003).

Similarly, occupational stress is defined as a situational response to workplace stressors that impact an individual's physical and/or psychological state, thereby affecting their performance (Babapour et al., 2022). Work-related stress can have detrimental mental and physical effects on the employees (Demerouti et al., 2001). Longitudinal studies have shown that there are also confounding effects of stressors that result in strains (Ganster & Rosen, 2013). There are various psychological outcomes that may arise from stress, including anxiety (Ketchensin et al., 2017), depression (Caspi et al., 2003), bipolar disorder (Ganster & Rosen, 2013) and burnout (Demerouti et al., 2001). There are just as many physical outcomes related to stress, which may include cardiovascular disease, diabetes (Ganster & Rosen, 2013), and high blood pressure and hypertension (Vrijkotte et al.,2000).

Occupational stress can stem from high job stressors, high effort discrepancy, inadequate organizational support, high workload, excessive work hours, or low job control. These are all factors that can contribute to the negative affect experienced by employees (Paige

et al.,2020). Other individual-based predictors of occupational stress include recovery and coping mechanisms (Ganster & Rosen, 2013), work-family conflict (Lister et al., 2019), and personality (Mohamed et al., 2022). For example, individuals with a type A personality, which is characterized by ambition orientation, aggressiveness, and achievement motivation, are more likely to engage in workaholic behaviors, such as extended work hours and an inability to detach from work (Clark et al., 2016).

Individuals tend to find it more difficult to engage in healthy behaviors like diet and exercise if they are coping with high levels of work-related stress in ways that are less than ideal (Ng & Jeffery, 2003). To put that into perspective, a meta-analysis consisting of 118,000 European working adults indicated individuals with high-strain jobs have a 34 % higher likelihood of having an unhealthy lifestyle and a 25 % higher likely hood when compared to low-strain jobs (Heikkilä et al., 2013). Given how stress directly affects individual well-being, the significant lack of research between stress and barriers and facilitators of healthy decision-making is surprising.

Barriers and Facilitators

For many people, a large portion of time is spent in or focused on their work, so the organizational atmosphere or climate can have a significant impact on how we make our decisions both in and outside the organization (Noordin et al., 2010). The theory of planned behavior is used as a framework (Azjen, 1985) to understand the influence an individual's attitudes, subjective norms, and control beliefs have on their behavioral intentions and the resulting behaviors. In addition, employees' overall healthy decision-making will be considered as a secondary indictor of the workplace culture on individuals and their subsequent behaviors.

For this study, the healthy decisions that I will be focusing on are exercise and nutrition. Specifically, this study will examine individual perceptions of the barriers and facilitators of healthy nutrition and exercise within or related to the workplace.

For this study, barriers are defined as employee considerations that make it more challenging to make healthy nutritional or physical activity choices within or that stem from the workplace (Mazzola, 2016). Examples of barriers can include long work hours or lack of healthy food options at or around the workplace. In contrast, facilitators are defined as employee considerations that aid or facilitate employees in making healthy nutritional or physical activity choices within or stemming from the workplace (Mazzola, 2016). Examples of facilitators can include onsite workout facilities or employee food storge areas. Unfortunately, there is a significant deficit in previous research examining the barriers and facilitators and the impact they have on healthy nutrition and physical activity within a workplace.

While the research on barriers and facilitators is only just emerging, early studies show how impactful barriers and facilitators can be on healthy decision making. For example, Nea et al., (2017) examined shift workers in hospitality, healthcare, and manufacturing industries to show that the barriers employees experienced were due to issues originating from tiredness, time management, and the workplace environment. These difficulties led to poor eating habits and a lack of physical activity (Nea et al., 2017). Of particular interest was that the workplace barriers were different for employees in each of the three industries (Nea et al., 2017). The food and beverage employees struggled with the poor food options in front of them throughout their workday, which they "picked at" continuously (Nea et al., 2017). Employees in the healthcare industry noted the grave importance they placed on their patients' food choices. Ironically, they

themselves struggled to stay hydrated due to the demanding work environment (consisting of heavy workloads and a lack of breaks; Nea et al., 2017). Participants also noted a lack of healthy food options or even food storage areas to bring their own food (Nea et al., 2017). Finally, employees in manufacturing had slightly more consistent work schedules, which transferred into more positive experiences but still lacked healthy food options, making the temptations available more difficult to resist (Nea et al., 2017). Overall, the common thread of the participants was stress and a lack of control over their health choices due to their workplace environments. Although individuals may not have many opportunities to make health-conscious choices while in the workplace, the same cannot necessarily be said for the choices made outside of the workplace. So, the food individuals purchased for their home or whether they made the decision go to the gym during on their days off is another story entirely.

The same study found that facilitators to employee health and well-being were consistent across all fields, including scheduled mealtimes, healthy food options, and workout facilities (Nea et al., 2017). Some employees noted that health initiatives in their organizations were well received, such as weight loss programs (Nea et al., 2017). The employers that did not have access to any health initiatives were receptive to the idea of them (Nea et al., 2017). Nea et al., (2017) showed that individuals in positive environments felt more empowered to make healthy food and lifestyle choices, which is one component of the present study. One randomized control trial conducted on cancer patient survivors utilized physical activity as the main component of a 12-week patient treatment plan, which showed an increase in participants overall physical and emotional well-being (Rastogi et al., 2020). In addition, the intervention utilized behavioral change strategies (substitution of alternatives, commitment, and social

support) that are similar in process to the approach of decreasing barriers and increasing facilitators for employee well-being in the workplace.

Stress can also have an impact on the barriers and facilitators of health-related decision making. Rosa et al. (2021) examined the link between stress, emotional well-being, and physical activity in almost 5,000 university students and showed that higher levels of stress and lower levels of emotional well-being and can lead to less physical activity, potentially due to cultural or social barriers. Similarly, Padilla et al. (2021) conducted a study on over 900 participants that showed that workload and exhaustion can lead to increased food consumption due to employee workplace experiences.

Overall, this shows that the workplace environment can play a significant role in enabling health-conscious employee decision-making. Specifically, barriers to nutrition and exercise in the workplace can have positive effects on individuals extending far beyond the workplace. Conversely, facilitators of nutrition and exercise in the workplace can have negative effects on the employees outside of the workplace.

The previous study (Mazzola et al., 2017) conducted found several interesting patterns among barriers and facilitators of healthy decision making. Workload was the most common barrier for both nutrition and exercise. The other most commonly found barrier to nutrition was individual cravings triggered by having unhealthy food around. The second most common barrier to exercise was time constraints. The most common facilitators individuals experienced to nutrition were prior meal planning or preparation and healthy food option availability. Lastly, the most common facilitators of exercise were time availability and health-conscious habits (i.e., taking the stairs instead of the elevator or escalator).

Theory of Planned Behavior

A different perspective to understanding behavior is offered by the Theory of Planned Behavior prosed by Azjen (1985), which suggests individual actions are guided by the three types of individualized beliefs: attitude, subjective norms, and perceived behavioral control (Azjen, 2012). Attitude beliefs focus on the likely outcomes of a given behavior and whether they are seen as either positive or negative (Madden et al.,1992). An example of this can be individuals that have positive attitudes toward healthy lifestyles will be more likely to engage in behaviors that support those attitudes (i.e., exercise and eating nutritiously). Normative beliefs take into consideration the social or personal expectations or connotations of a particular behavior (Ajzen, 2012). A consideration can be an individual's perception of eating something healthy or working out during their lunch break. If that behavior is perceived as normal, an individual will be more likely to have the behavioral intentions to engage in those behaviors. Control beliefs focus on how much control an individual believes they have over their specific behavior (Ajzen, 2012). If an individual believes they have control over their health, they will be more likely to engage in behavior that supports that.

These three components combine to create an individual's behavioral intentions (Ajzen, 2012). Previous research supports the causal relationship between intention and behavior through several studies conducted on the motivations of consumer purchases (Stopczynski & Ziemba, 2022), smoking (Alanazi et al., 2017; Tapera et al., 2020), and seat-belt use (Okyere et al., 2021). The theory also provides a conceptual framework for understanding the barriers and facilitators to decision-making related to diet and exercise. For example, a study conducted on the intentions of tourists to consume local food was associated with the attitudes of the locals

and tourists, their perceived behavioral control, and the norms individuals had for themselves as foreigners (Balıkçıoğlu Dedeoğlu et al., 2022).

Understanding attitudes, different norms, and the control beliefs allow people to identify and predict various behavioral patterns. Generally, when behavioral attitudes are more positive, behavior is perceived as normal, and there is a greater perceived control (Ajzen, 1991; 2012). In these conditions, the person is likely to have high behavioral intentions. According to the theory, behavioral intentions *should* predict actual behavior, but studies have demonstrated that actual behavior can vary extremely based on the individual magnitudes of all the combining factors (Ajzen, 1991). A more recent addition to the theory is the ideal of actual behavioral control. While perceived control is important for forming intentions, actual behavioral control may serve as a roadblock preventing intentions from leading to behaviors (Sussman & Gifford, 2018). Using this framework to understand behavior can offer insight into the underlying causes of the behaviors and provide mechanisms to pivot those behaviors in a different trajectory (Ajzen, 2012). Taking the established factors into consideration, I propose the following hypotheses:

Hypothesis 1a: Barriers of nutrition will be negatively associated with healthy decision-making, specifically diet.

Hypothesis 1b: Barriers of exercise will be negatively associated with healthy decision-making, specifically exercise.

Hypothesis 1c: Facilitators of nutrition will be positively associated with healthy decision-making, specifically diet.

Hypothesis 1d: Facilitators of exercise will be positively associated with healthy decision-making, specifically exercise.

Hypothesis 2a: Barriers of nutrition will be negatively associated with stress.

Hypothesis 2b: Barriers of exercise will be negatively associated with stress.

Hypothesis 2c: Facilitators of nutrition will be positively associated with stress.

Hypothesis 2d: Facilitators of nutrition will be positively associated with stress.

Figure 1

Hypotheses 1a & 1c

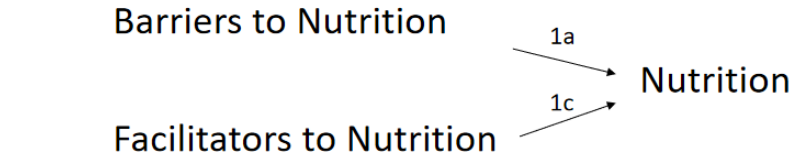
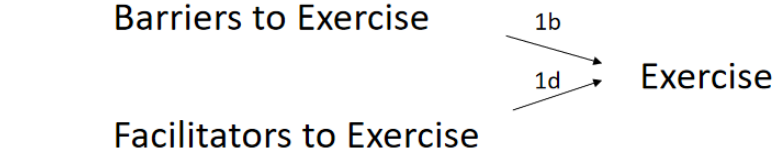


Figure 2

Hypotheses 1b & 1d



Work From Home

Remote work is an alternative approach to the traditional brick-and-mortar work environment that has seen a continuous rise in the last decade due to the rapidly changing

world. To keep up with the changing times, organizations have had to adapt to incorporate their employee's needs. According to a recent statistical report, remote work grew by 216 % between 2005 and 2019, and more than half (69%) of employees indicated an interest in continuing to stay remote (Global Workplace Analytics, 2022). These types of changes in individual work environments have the potential to impact the barriers and facilitators employees face to making healthy decisions about nutrition and exercise.

To fully understand the effect remote work has on stress, we must first understand what remote work entails. Remote work is commonly referred to as work from home, virtual work, telework, and telecommuting. There are three fundamental components to remote work: 1) the individual fit between the person, the work style and job requirements; 2) the physical location of the work and any technology available to facilitate work functions; 3) the quality of work provided (Baruch, 2000).

Distinctions have recently been made between remote work and hybrid or flexible work, which is a combination of in-person and remote work based on the employee's needs and organizational requirements (Lister et al., 2019). More work location options can potentially offer opportunities for better work-life balance for employees and ensure that organizational needs are still being met. An example of employee-focused flexible work is an employee coming into the office at 10 am so they can have breakfast with their children and take them to school. An example of organizational-focused hybrid work is having a rotating schedule of teams working in person, such as the creative teams coming in on Mondays and Wednesdays while the digital teams are in on Tuesdays and Thursdays. Alternatively, another example of flexible work used by some technology-based industries, which is to have a rotation of people within a team

being physically onsite to ensure that someone is always present to deal with anything that may arise.

As the number of individuals and organizations supporting remote work increases, so does the research on the various outcomes of the rapidly growing work approach. Research has indicated both negative and positive outcomes on individuals working remotely, which can extend beyond the employees to the organizations. The positive outcomes of remote work include increased happiness and job satisfaction and decreased travel expenses and commute time (Global Workplace Analytics, 2022). In addition, studies have shown that remote work can also improve employee work-life balance and overall employee well-being (Lister et al., 2019). Working from home may also facilitate healthy decision making. For example, working from home may give someone more time to choose and prepare healthy nutritional meals and exercise.

Despite the many positive outcomes of working from home, there are a significant number of negative outcomes, which include increased stress and burnout due to longer work hours, work expectations or pressures of being available because of technological ease and lack of physical boundary separation (Lister et al., 2019). A staggering 75% of upper-level business employees reported taking part in work-related activities outside of normal work hours (Lister et al., 2019). Remote work may create potential barriers to making healthy decisions. For example, employees that commute to work may have gone to the gym or the supermarket on their way home. While individuals working from home may not go out at all and instead order food delivery (e.g., Seamless). Remote work can also significantly negatively impact employee engagement, job satisfaction, and overall well-being (Darouei & Plutt, 2021; Lister et al., 2019).

There are several predictors of the positive outcomes of remote work on employee job satisfaction and work-family conflict. A recent study that surveyed individuals and their partners showed that employees experienced less work-family conflict on the days they engaged in remote work compared to the days they worked from the office (Darouei & Plutt, 2021). Having this extra time with their families has the potential to facilitate employee healthy decision making. For example, individuals working from home may have an increased amount of time to prepare dinner with their family thereby increasing the motivation to make more nutritional meals. This positive effect has the potential to extend into the next workday through increased employee engagement and productivity (Lister et al., 2019).

Working from home provides the opportunity to increase employee well-being by providing the opportunity to repurpose the time they would have spent traveling to and from the workplace to engage in healthy behaviors. These healthy behaviors include increased time for sleep, exercise, and time for loved ones (Lister et al., 2019). A reduction in stress can also be attributed to remote work due to employees not having to commute or the lack of office distractions around (Lister et al., 2019). Further, individuals can instead be in the comfort of their own home or any other space, depending on their personal work preferences or requirements.

In contrast, Lister et al., (2010) also showed that some individuals could find it difficult to maintain work-life balance when there are many family distractions in their remote workspace (Jain et al., 2022). Thus, this study will explore if barriers and facilitators differ for individuals working from home versus those who are not. Work from home can also contribute to employee stress by increasing employee isolation due to the lack of physical interaction and

or engagement with other coworkers (Darouei & Plutt, 2021). Isolation in the workplace can also extend to employee professional development through the fear of being left out of opportunities due to their perception of having less supervisor support (Marshall et al., 2007). Other contributing factors to workplace isolation are decreased visibility of employees' work and organizational commitment (Marshall et al., 2007). Thus, working from home may lead to increased stress for some people. These are all some examples of barriers and facilitators to healthy decision making that employees working from home may experience. This leads to the following hypotheses and question:

Hypothesis 3a: Work from home will be negatively associated with barriers of nutrition.

Hypothesis 3b: Work from home will be negatively associated with barriers of exercise.

Hypothesis 3c: Work from home will be positively associated with facilitators of nutrition.

Hypothesis 3d: Work from home will be positively associated with facilitators of exercise.

Hypothesis 4a: Barriers of nutrition will mediate the relationship between work from home and stress.

Hypothesis 4b: Barriers of exercise will mediate the relationship between work from home and stress.

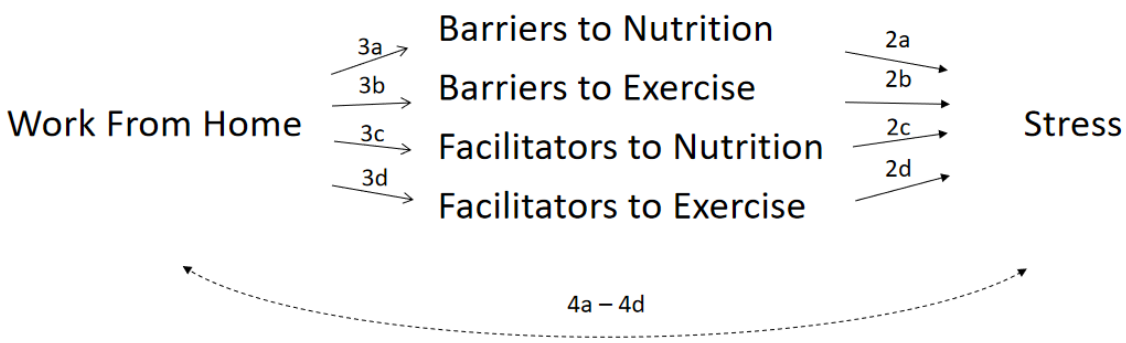
Hypothesis 4c: Facilitators of nutrition will mediate the relationship between work from home and stress.

Hypothesis 4d: Facilitators of exercise will mediate the relationship between work from home and stress.

Question 1: Do barriers and facilitators differ for those who work from home from those who work from the workplace?

Figure 3

Direct and Indirect Relationships



COVID

This study does not aim to test the relationship between covid and barriers and facilitators of healthy decision-making. It simply acknowledges the impact the pandemic had on the accelerated push for employees to work remotely. The current study also does not make any conclusions or assumptions due to the pandemic. The only goal of this study has regarding COVID is to replicate and extend previously conducted research that was conducted right before the COVID pandemic began and six months into the pandemic.

The initial COVID experience that occurred at the time of the original study is a drastically different experience than the COVID that we have become familiar with currently. In 2020, COVID raised intense fear and panic due to the lack of information, high infection and death rates, and intense global closures or restrictions. The initial participant data for this study was collected in February 2020, one month prior to the official quarantine initiated in March 2020. The second round of data was conducted in September 2020 after the order to quarantine in place was given across the United States. These events significantly changed the workplace in various ways.

The pandemic started the largest shift to remote work the world has ever seen. According to a 4,000-participant survey conducted by Global Workplace Analytics (2020), 70 % of United States full-time employees worked remotely over the first year of the pandemic. A staggering 77 % of survey respondents indicated that having the option to work from home would increase their happiness. This is an astonishing number given the 115% increase remote work has had over the last decade (Global Workplace Analytics and Flexjobs, 2017).

Furthermore, the mechanisms by which work is conducted have dynamically shifted. For example, in-person meetings have become virtual, which has led to the new issue commonly referred to as zoom fatigue. This is the exhaustion experienced by individuals from being on video conference meetings for extended periods of time and encompasses all supporting platforms (Shoshan & Wehrt, 2021). Other examples of workplace procedural changes include hiring and selection reprioritization, salary fluctuations, and job redesigns (Bieńkowska et al., 2022).

Chapter 2

Method

Participants

The initial study had fifty-eight participants collected in the group in September 2020. This study recruited an additional 229 working professionals to participate in a replication and continuation of the original daily diary study that included a work from home component. It utilized my social media networks such as: Facebook, LinkedIn, and several professional networking groups. The original study provided participants with a $5 Amazon gift card for every day completed with a $10 gift card for completing the fifth day as it included more information and a $20 bonus card if they completed all 5 days. Participants received a total of $50 for completing all 5 days. This study utilized a giveaway drawing of 5 $100 amazon gift cards which provided the participants 1 entry for each day they completed the survey with 4 entries for completing the fifth day and a bonus 5 entries for completing all 5 days. This offered participants a total of 10 giveaway entries.

Of the 287 participants in this study, 14 were removed for completing less than 50 % of data, 2 were removed for not being currently employed, 4 were removed because English was not their first language and 46 were removed for not working the day before. Leaving a total of 214 participants data utilized in this study. The participants ranged from 20 to 68 years of age with a median age of 31, which included 40% men and 60% women. The participant ethnicity breakdown was 74% white, non-Hispanic, 17 % African American, 1.9 % Asian, 3.9 % Hispanic, 1.9 % American Indian or Native American, 0 Mixed Ethnicity, and 1% other. Participants worked 40 hours on average per week, 49% worked from home. The participant job type was 8% blue

collar and 91% white collar, with 1% indicating both. Participants employment levels consisted of 12% executives, 19% management, 60% professional, and 9% support. Participants worked in a broad range of industries, including 9% construction, 17% education and health services, 12% Financial Activities (including real estate), 14% information, 10% leisure and hospitality, 10% manufacturing, 3% natural resources and mining, 16% professional and business services, 2% trade, transportation and utilities, and 7% other.

Measures

This study is a combination of archival data from a previous study and gathering new data to further expand on the work-from-home element that was included in part of the initial study. This required a close replication of the initial study conducted. Therefore, the study relied on the daily diary method. This means that brief or condensed versions of the scales were used. There were additional measures as part of the larger study, but the variables listed below were the only ones measured within the scope of this analysis. The average participant study completion time was approximately 7 minutes.

Barriers and Facilitators

To measure the barriers and facilitators of physical activity and nutrition, the original study checklists of workplace barriers and facilitators (Jackson et al., 2022) based on some of the most commonly previously identified indicators of each: barriers of physical activity, barriers of nutrition, facilitators of physical activity, and facilitators of nutrition. The checklists consist of 10 to 15 items each and were split into workplace and personal factors for further clarification. Some items were also reworded for clarity. Intensity for each of the items selected was also

added on a 5-point Likert (none at all, a little, a moderate amount, a lot, a great deal) but was not analyzed as part of the study because that would be beyond the scope. The participants were asked to report which barriers and facilitators were present each day, and an overall score was created. A high score indicates an increased number of barriers and facilitators experienced in the workplace related to eating healthy and exercise. The full checklist can be found in the appendix.

Diet

The Health Promoting Lifestyle Profile II (Walker et al., 1987) was also utilized. It is a 52-item scale that consists of six scales measuring: health responsibility, physical activity, nutrition, spiritual growth, interpersonal relations, and stress management (Walker & Hill-Polerecky, 1996). Of the six subscales, only the nutrition scale was used for the study, which consists of 7 items. The scale was modified from a 4-point Likert (never, sometimes, often, routine) rating scale to a daily 2-point (yes, no) rating scale. High scores on the scales indicate participants engaged in more healthy eating.

Exercise

The Godin Exercise Scale (Godin & Shephard, 1997) consists of three items that measure weekly physical activity behaviors and their intensity. The scale was modified to be used as a daily scale. Daily scores are calculated by multiplying each behavior by the amount of time participants spent engaging in that activity (in 15-minute increments). The activity scores are then multiplied to the level of intensity with mild/light exercise being a multiple of 3, moderate exercise being a multiple of 5, and strenuous exercise being a multiple of 9. A high score

indicates participants engaged in more intense physical activity while a low score indicates less physical activity engagement.

Stress

To measure stress, the study used the shortened Perceived Stress Scale (Cohen et al., 1983) with modifications from a monthly timeframe to a daily timeframe. The scale contains 10 items that focus on how often participants experience stress on a Likert range from 0 (*never*) to 4 (*very often*). High scores indicate participants experienced more stress, while low scores indicate less stress experienced. The scale was tested for internal consistency and the reliability was $\alpha = .80$ for day 1, $\alpha = .85$ for day 2, $\alpha = .87$ for day 3, $\alpha = .87$ for day 4, and $\alpha = .86$ for day 5.

Work From Home

To measure work from home, the participants were asked daily if they worked the previous day. They were also asked about the form of work they engaged in, whether it was from the office or remotely. Lastly, participants were asked to indicate how many hours of work a day they completed.

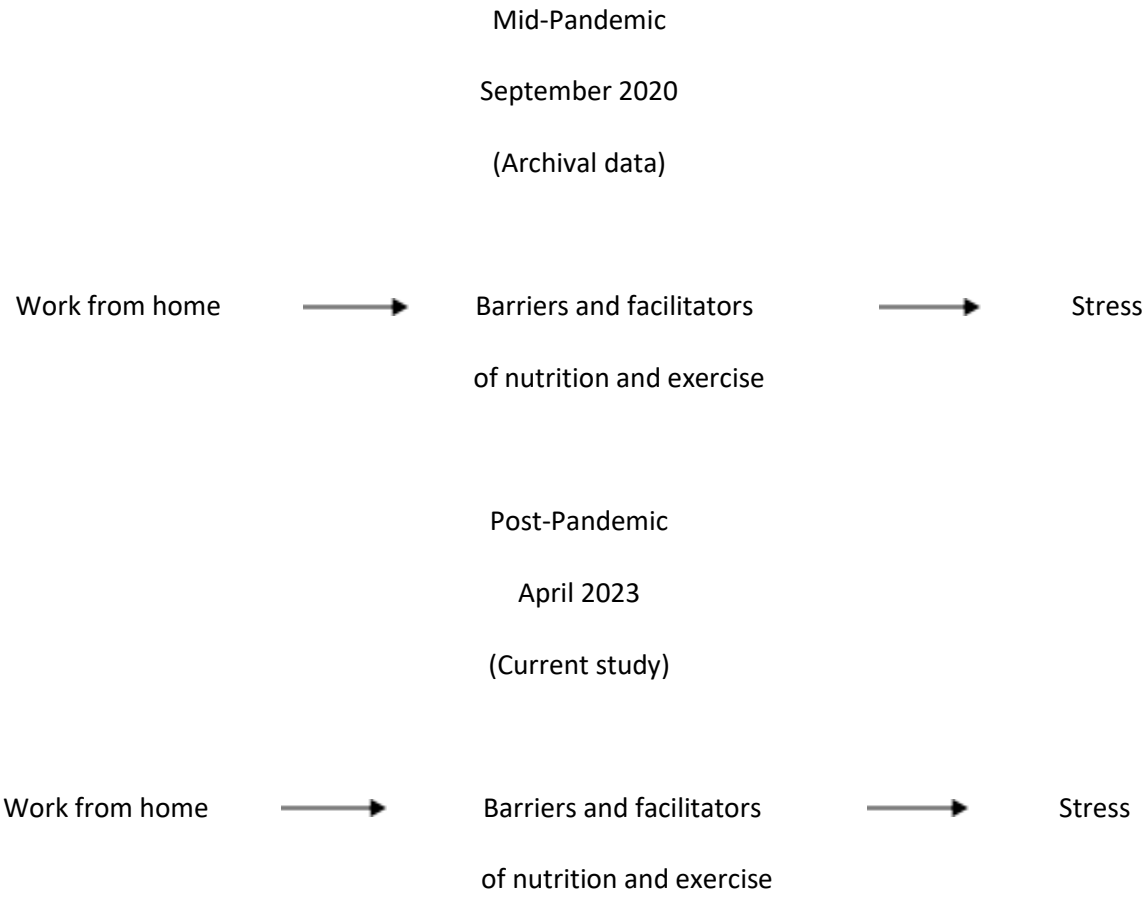
Procedure

The initial study recruited participants using my social media accounts to gain awareness and interest. Once participant interest was identified the researcher sent participants an email with a survey link to report their experiences on the preceding workday for five consecutive days. The first email was sent on a Tuesday, and the final email was sent on a Saturday. The survey emails were sent out at the beginning of each day to ensure the most accurate

representations of the previous day's activities. Each of the first four days had the same survey with the fifth day being longer to include eight individual demographics, which can all be found in the appendix.

Figure 4

Data collection



Results

This study separated the original lists of barriers and facilitators to healthy decision making utilized in the first two rounds of data collection into personal and workplace factors to make them more distinct. For the purposes of this study, only the items (or their updated phrasing) that were included in the original lists were used to calculate the barriers and facilitators people experienced. This meant that any items that were added to the new list were not utilized in the data analysis and any items that were reworded for further clarification were matched with the original items in the previous round of data collected.

The regression coefficients for barriers and facilitators to nutrition and exercise can be found in Table 1. The aggregated descriptives of all variables are depicted in Table 2. Lastly, the correlation matrix can be located in Table 3 and is presented simply for context, as it is in violation of the non-independence property.

Table 1
Regression Coefficients of the Effect of Work from Home on Barriers & Facilitators of Healthy Decision Making and Stress

Variable	*b*	SE B	*z*	*p*
Stress	0.818	.439	1.864	.06
Nutrition Barriers	0.317	.136	2.324	**.02**
Nutrition Facilitators	0.546	.127	4.283	**< .01**
Exercise Barriers	0.158	.161	0.983	.33
Exercise Facilitators	0.463	.142	3.255	**< .01**

*Note * p < .05*

Table 2

Descriptives Based on Day

Variable	Day	N	Mean	SD	Min	Max
Work from home	1	144	2.10	0.999	1	3
	2	129	2.26	0.970	1	3
	3	135	2.14	0.884	1	3
	4	121	2.19	0.986	1	3
	5	105	1.17	1.087	0	3
Stress	1	144	23.49	6.419	6	38
	2	129	21.12	6.898	4	37
	3	136	21.32	7.056	4	38
	4	121	21.24	7.790	4	45
	5	105	21.12	7.119	4	37
Nutrition Barriers	1	144	3.42	2.033	0	12
	2	129	3.26	2.234	0	13
	3	136	3.11	2.247	0	15
	4	121	2.98	2.051	0	13
	5	105	3.33	2.290	0	13
Nutrition Facilitators	1	144	3.48	2.168	0	12
	2	129	3.28	2.239	0	11
	3	136	3.26	2.158	0	11
	4	121	2.99	2.031	0	11
	5	105	3.22	2.075	0	11
Exercise Barriers	1	144	3.71	2.480	0	14
	2	129	3.33	2.408	0	13
	3	136	3.26	2.373	0	11
	4	121	2.99	2.031	0	11
	5	105	3.49	2.700	0	15
Exercise Facilitators	1	144	3.54	2.503	0	12
	2	129	3.32	2.352	0	12
	3	136	3.20	2.356	0	13
	4	121	2.93	2.550	0	12
	5	105	3.22	2.465	0	13

Note. Total study participants *n* = 214 but the daily participation of individuals varied per day.

Table 3

Aggregated Descriptives

Variable	N	Mean	SD	Min	Max
Work from home	634	2.00	1.07	0	3
Stress	635	21.70	7.09	4	45
Nutrition Barriers	635	3.22	2.17	0	15
Nutrition Facilitators	635	3.26	2.14	0	12
Exercise Barriers	635	3.42	2.50	0	15
Exercise Facilitators	635	3.25	2.45	0	13

Table 4

Correlation of Work from Home, Stress, Barriers & Facilitators to Nutrition & Exercise

Variables	1	2	3	4	5
1. WFH	-				
2. Stress	-.032	-			
3. Nutrition Barriers	**-.111**	**.228**	-		
4. Nutrition Facilitators	**-.236**	-.004	**.418**	-	
5. Exercise Barriers	-.057	**.179**	**.709**	**.385**	-
6. Exercise Facilitators	**-.190**	-.030	**.431**	**.694**	**.382**

Note. Bold indicates significance at $p < .05$. Variables aggregated across all 5 days

Test of Hypotheses

Recall, hypotheses 1a through 1d predicted that barriers and facilitators of nutrition and exercise would be associated with healthy decision-making, specifically diet and exercise. To test these hypotheses, the linear mixed effects modeling package (lmer) in R was used (Bates et al. 2014). Specifically, daily barriers of nutrition and facilitators of nutrition were entered as predictors of daily healthy eating, and daily barriers of exercise and facilitators of exercise were

entered as predictors of daily exercise. Additionally, because these variables could vary across days, day was entered as a predictor in both models. There was a significant positive relationship between experiencing facilitators of nutrition and healthy eating (B = 0.21, t = 6.12, p < .05), but there was not a significant relationship between experiencing barriers of nutrition and healthy eating (B = -0.05, t = -1.42, p > .05). Therefore, hypothesis 1c was supported, but hypothesis 1a was not supported. Further, there was a significant positive relationship between experiencing facilitators of exercise (B = 3.87, t = 7.29, p < .05), but there was not a significant relationship between experiencing barriers of exercise (B = 0.69, t = 1.03, p > .05). Therefore, hypothesis 1d was supported, but hypothesis 1b was not supported. This is shown below in Table 5.

Table 5

Associations of Barriers and Facilitators to Nutrition & Exercise with Diet & Exercise

	Hypotheses	Effects	*t*	*p*	Support for Hypothesis
1a	BN (-) —> Diet	-0.05	-1.42	> .05	No
1b	BE (-) —> Exercise	0.69	1.03	> .05	No
1c	FN (+) —> Diet	0.21	6.12	< .05	Yes
1d	FE (+) —> Exercise	3.87	7.29	< .05	Yes

Not. BN: Barriers to Nutrition, BE: Barriers to Exercise, FN: Facilitators to Nutrition, FE: Facilitators to Exercise.

Hypotheses 2 through 4 focused on the relationships in the mediation model and were all tested using the same model. The lavaan package in R (Rosseel, 2012) was used to conduct a repeated measures mediation model with only random effects. To test these hypotheses, work from home was entered as the predictor, barriers to nutrition and exercise were entered as the mediators, and stress was entered as the outcome. Additionally, because each of these variables was measured on each day, they were all allowed to vary with time (day level measurement). Recall, hypotheses 2a through 2d predicted that barriers and facilitators to nutrition and

exercise would be positively associated with stress. There was a significant relationship between barriers to exercise and stress (B = 0.64, t = 2.96, p < .01), but there was not a significant relationship between barriers to nutrition and stress (B = 0.30, t = 1.20, p = .23). Despite the statistical significance of hypothesis 2b it was not a negative relationship as predicted. Additionally, there was not a significant relationship between facilitators of nutrition and stress (B = -0.44, t = -1.96 p >.05), nor between exercise and stress (B = - 0.09, t = -0.43 p = .66). Therefore, hypotheses 2a through 2d were not supported. This is depicted below in Table 6.

Table 6

Associations of Barriers and Facilitators to Nutrition & Exercise with Stress

	Hypotheses	Effects	*t*	*p*	Support for Hypothesis
2a	BN (-) —> stress	0.30	1.20	.23	No
2b	BE (-) —> stress	0.64	2.96	< .01	No
2c	FN (+) —> stress	0.09	-0.43	.66	No
2d	FE (+) —> stress	-0.44	-1.96	> .05	No

Note. BN: Barriers to Nutrition, BE: Barriers to Exercise, FN: Facilitators to Nutrition, FE: Facilitators to Exercise.

Similarly, hypotheses 3a through 3d predicted that work from home would be associated with barriers and facilitators to nutrition and exercise. There was a significant positive relationship between working from home and experiencing facilitators of nutrition (B = 0.55, t = 4.28, p < .01. There was a significant relationship between working from home and experiencing barriers of nutrition (B = 0.32, t = 2.32, p= .02), but it was not a negative relationship as predicted. Further, there was a significant positive relationship between working from home and experiencing facilitators of exercise (B = 0.46, t = 3.26, p < .01), but there was not a significant relationship between working from home and experiencing barriers of exercise

(*B* = 0.16, *t* = 0.98, *p* = .33). Therefore, hypotheses 3c, and 3d were supported, but hypotheses 3a and 3b were not supported. This is depicted below in Table 7.

Table 7

Associations of Work from Home on Barriers and Facilitators to Nutrition & Exercise

	Hypotheses	Effects	*t*	*p*	Support for Hypothesis
3a	WFH (-) —> BN	0.32	2.32	.02	No
3b	WFH (-) —> BE	0.16	0.98	.33	No
3c	WFH (+) —> FN	0.55	4.28	< .01	Yes
3d	WFH (+) —> FE	0.46	3.26	< .01	Yes

Note. BN: Barriers to Nutrition, BE: Barriers to Exercise, FN: Facilitators to Nutrition, FE: Facilitators to Exercise.

Lastly, hypotheses 4a through 4d predicted that barriers and facilitators of healthy decision making would mediate the relationship between work from home and stress. The total effect of working from home and experiencing barriers of nutrition on stress was not significant, *B* = 0.56, *t* = 1.77, *p* = .08. There was also not a significant indirect relationship between working from home and stress through experiencing barriers of nutrition (*B* = 0.26, *t* = 1.46, *p* = .15). The total effect of working from home and experiencing facilitators of nutrition on stress was also not significant, *B* < 0.01 *t* = 0.01, *p* = .99. There was also not a significant indirect relationship between working from home and stress through experiencing facilitators of nutrition (*B* = 0.45, *t* = 1.72, *p* = .09). The total effect of working from home and experiencing barriers of exercise on stress was significant, *B* = 0.77, *t* = 2.74, *p* < .01. There was also not a significant indirect relationship between working from home and stress through experiencing barriers of exercise (*B* = 0.13, *t* = 0.88, *p* = .37). Lastly, the total effect of working from home and stress through experiencing facilitators of exercise on stress was not significant, *B* = 0.29, *t* = 1.08, *p* = .28. There was not a significant indirect relationship between working from home and stress through

experiencing facilitators of exercise (*B* = 0.38, *t* = 1.64, *p* = .10). Therefore, hypotheses 4a through 4d were not supported. After further investigation of these non-significant indirect effects, the results showed that there was not a significant direct effect of working from home on stress (*B* = 0.82, *t* = 1.86, *p* = .06), which would explain why the indirect effects were not significant. However, there was a significant effect of day on stress (*B* = -0.35, *t* = -2.14, *p* = .03), which indicates that stress decreases as the week progresses. This is depicted below in Table 8.

Table 8

Mediation of Work from Home to Stress Through Barriers and Facilitators to Nutrition & Exercise

	Hypotheses	Effects	*t*	*p*	Support for Hypothesis
4a	WFH —> BN —> Stress	0.26	1.46	.15	No
4b	WFH —> BE —> Stress	0.13	0.88	.37	No
4c	WFH —> FN —> Stress	0.45	1.72	.09	No
4d	WFH —> FE —> Stress	0.38	1.64	.10	No

Note. BN: Barriers to Nutrition, BE: Barriers to Exercise, FN: Facilitators to Nutrition, FE: Facilitators to Exercise.

Research Question

Recall, the research question aimed to examine whether the barriers and facilitators of healthy decision making differed for individuals that worked from home than those who worked in person. To test this research question, four independent samples t-tests were conducted comparing people who worked from home to those who did not work from home on barriers of nutrition, facilitators of nutrition, barriers of exercise, and facilitators of exercise. Because this question was only concerned with the overall difference, the data was collapsed across days. Individuals that worked from home experienced a significantly greater number of nutrition barriers (*M* = 3.60, *SD* = 2.33) than people who worked in person, *M* = 2.95, *SD* = 1.99, *t*(632) =

3.78, $p < .01$, $d = 0.30$. Similarly, individuals that worked from home experienced a significantly greater number of nutrition to facilitators ($M = 3.89$, $SD = 2.19$) than people who worked in person ($M = 2.79$, $SD = 1.98$), $t(632) = 6.62$, $p < .01$, $d = 0.53$. Additionally, participants that worked from home experienced a significantly greater number of exercise facilitators ($M = 3.77$, $SD = 2.57$) than people who worked in person ($M = 2.86$, $SD = 2.28$), $t(632) = 4.72$, $p < .01$, $d = 0.38$. Lastly, individuals that worked from home did not experience a significantly greater number of exercise barriers ($M = 3.61$, $SD = 2.75$) than people who worked in person ($M = 3.29$, $SD = 2.29$), $t(632) = 3.78$, $p = .10$, $d = 0.13$. Therefore, it appears that working from home exposes employees to a greater number of nutrition barriers, nutrition facilitators, and exercise facilitators. The aggregated descriptives of barriers and facilitators to healthy decision making, specifically nutrition and exercise by work from home and non-work from home are in Table 9 and independent samples t-tests are in Table 10 below.

Table 9

Aggregated Descriptives for Work from Home and Non-Work from Home

	Work from home	Non-Work from home
Variable	*M*(*SD*)	*M*(*SD*)
Nutrition Barriers	3.60(2.33)	2.95(1.99)
Nutrition Facilitators	3.89(2.19)	2.79(1.98)
Exercise Barriers	3.61(2.75)	3.29(2.29)
Exercise Facilitators	3.77(2.57)	2.86(2.28)

Note. Work from home N = 271 and non-work from home N = 363

Table 10

Independents Samples T-test of Barriers & Facilitators to Nutrition & Exercise

Variable	*t*	*df*	*p*	Mean Diff.	SE Diff.	Effect Size
Nutrition Barriers	**3.78**	632	< .001	0.650	0.172	0.303
Nutrition Facilitators	**6.62**	632	< .001	1.191	0.166	0.532
Exercise Barriers	1.63	632	.104	0.326	0.200	0.131
Exercise Facilitators	**4.72**	632	< .001	0.912	0.193	0.379

Note. Bolded values are significant at $p < .05$.

Discussion

The purpose of this study was to examine the impact of remote work on the barriers and facilitators of healthy decision making. I sampled working professionals over the course of one working week and found that exposure to diet facilitators led to healthier eating, and exposure to exercise facilitators was associated with more exercise. Further, nutrition and exercise barriers that individuals experienced did not show an impact on healthy eating or exercise, respectively. Moreover, work from home did appear to have an impact on the barriers of nutrition individuals were exposed to. Working from home also impacted the experiences of nutritional facilitators and exercise facilitators individuals were exposed to but did not seem to impact the barriers of exercise individuals were exposed to. In other words, working from home made it easier for individuals to eat healthy, but it also made it harder for them to eat healthy. This could potentially be due to some people having more time to purchase healthier options and prepare meals for the week at home, while others may have had more ready access to unhealthy options. Similarly, working from home made it easier for individuals to exercise but it did not make it harder for individuals to exercise. This could potentially be due to a variety of reasons, such as a greater flexibility in one's work schedule and access to a shower. Lastly, barriers and facilitators of nutrition and exercise did not mediate the relationship between remote work and stress. This is in line with previous research, given the mixed results of the impact of remote work on employee health, which shows that working from home can negatively impact employee engagement, job satisfaction and overall employee well-being (Darouei & Plutt, 2021; Lister et al., 2019) or positively impact work-life balance and employee well-being (Lister et al., 2019). Therefore, the remote work findings are also not surprising when taking into consideration the above results of stress only impacting the barriers to exercise. This

may be due to a variety of reasons such as workload or autonomy individuals experienced as stressors at their workplace.

Implications

Based on how much impact diet and exercise can have on employee health and wellbeing, it is crucial for managers to be armed with the knowledge of how the form of work, whether it be in person or remote, plays into individual healthy decision making. Developing a comprehensive understanding of the tools that can provide employees with the desired benefits can save lead to significant everyone time, money, and resources in the long run. For starters, this study showed that facilitators of both nutrition and exercise can make a difference in employees' health related decision making. Organizations can help employees make better health related decisions by introducing more facilitators in the workplace and removing barriers to making healthy decisions. For example, if organizations have snack food options available for their employees, they could include healthy options, such as fruits and vegetables. Another organizational intervention example could be providing employees with more flexibility in their work schedule to exercise in the middle of the day. This would offer a great alternative for organizations that may not afford or want to spend the money on exercise facilities or gym memberships for all their employees. In other words, organizations can use the knowledge of various barriers and facilitators of healthy decision making to redesign the organizational practices and promote employee well-being, so making healthier decisions is easier for their employees.

While there are mixed findings on remote work such as its ability to negatively impact employee engagement, job satisfaction and overall employee well-being, as well as its ability to

positively impact work-life balance and subsequentially employee well-being (Darouei & Plutt, 2021; Lister et al., 2019). This study suggests that remote work can decrease individuals' exposure of barriers to diet. It also suggests that remote work can increase individuals' exposure to facilitators of nutrition and exercise. Further, the relationship between remote work and stress is not mediated by barriers and facilitators to healthy decision making. This suggests that while the format of work may impact individuals' exposure to barriers and facilitators of healthy decision making, it does not necessarily impact their perceive stress levels. This is surprising given previous research that indicates that individuals tend to find it more difficult to make healthier decisions while dealing with stress (Ng & Jeffery, 2003). While I did not hypothesize this, a closer examination of the relationships shows that working from home did not significantly predict stress, but individuals experienced less stress throughout the week. The change in stress as the week progressed may be due to a variety of reasons, such as individuals having a negative association with Mondays or a positive association with Fridays or that individuals felt less stressed as the weekend approached. Future research should further investigate these relationships.

Limitations

One limitation of this study is the smaller sample size than anticipated or hoped. This is understandable due to the daily diary format of the study but still leaves groups underrepresented. The participant sample is not evenly distributed. There is an underrepresentation of ethnicity as the sample consists of participants that are predominantly (74%) white, non-Hispanic. Similarly, the sample consisted of primarily (91%) white-collar jobs, which provides very little input from individuals in blue collar jobs.

Another limitation of this study is that it utilized shortened measures to minimize participant fatigue and encourage involvement, such as with the perceived stress scale. Further, the study modified the Godin Exercise Scale (Godin & Shephard, 1997) from a monthly to a daily scale. Lastly, the Health Promoting Lifestyle Profile II (Walker et al., 1987) was modified from a 4-point Likert (never, sometimes, often, routine) rating scale to a daily 2-point (yes, no) rating scale. While these tests had sufficient reliability, the changes made may have affected the original validities of each scale.

Lastly, a technical limitation of this study was the checklist changes that were made for this study from the original study. The checklists of barriers to exercise, barriers to nutrition, facilitators of exercise, and facilitators of nutrition were separated into workplace and personal barriers to further clarify the distinction. The exact verbiage used for the checklists was also updated and expanded upon to improve item precision. This may have caused slight differences in the exact items that individuals chose on these scales. Further, it made a direct comparison between the archival data and the new data difficult. For example, the number of items on the revised checklists exceeded the number of items on the original checklists, so the overall total scores could be different if all items were selected.

Future Directions

How individuals make health related decisions can vary greatly depending on the individual. Therefore, future research should explore whether individual differences influence the relationships between barriers and facilitators and individual health behavior. For example, individual differences that can impact behavior can include personality, locus of control or affect. Further, Individual differences might moderate the relationships between the work

format individuals utilized and the way individuals experience barriers and facilitators to healthy decision-making. For example, some individuals may experience working from home as a facilitator to exercise because it offers them the opportunity to exercise, while others may view it as a barrier because the gym was conveniently located near work or on their commute.

Another possible direction for further research is to is to examine other outcome variables beyond stress. Since barriers and facilitators can impact how individuals are exposed to healthy decision making, they can also potentially also influence other workplace factors that may be impacted by barriers and facilitators to healthy decision making. For example, other outcomes could include job satisfaction, well-being, or job performance.

Lastly, working from home does not have an indirect effect on stress through barriers and facilitators but can influence stress in other ways. Future research should investigate this relationship further. Perhaps there are individual differences (such as affect), or personality characteristics (such as mindfulness) that impact the way work from home impacts stress.

Conclusion

The increasing commonality of work-related stress makes the importance of employee health and well-being that much more significant. Because poor nutrition and exercise can increase the likelihood of psychological and physical health related concerns, organizations can mitigate some of those health concerns by understanding what barriers and facilitators employees experience. This study explored the relationship between working from home and stress, through the experience of barriers and facilitators to nutrition and exercise. Participants completed a daily diary study for five consecutive workdays reporting the barriers and

facilitators they experienced. This study found that facilitators of nutrition were positively associated with healthy eating and that barriers to exercise were related to higher stress levels. However, the two did not mediate the relationship between working from home and stress. Lastly, participants that worked from home reported experiencing higher barriers and facilitators of nutrition and exercise than those who worked in person. Organizations should use the knowledge of various barriers and facilitators of healthy decision making to redesign the organizational practices, create healthy interventions, and promote employee well-being to make it easier for employees to make healthy decisions.

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Appendix A

Survey days 1 though 4

Work From Home

Scale: 2-point Likert scale

1. Did you work yesterday?
    - Yes
    - No
2. How many hours did you work yesterday?

    _____
3. Did you work from home yesterday?
    - Yes
    - No
4. Were you responsible for providing care to others yesterday (such as child care or elder care)?
    - Yes
    - No
5. Were you responsible for providing education to kids at home yesterday?
    - Yes
    - No

Workplace Checklist of Barriers to Nutrition

Select the **barriers related to eating healthy** that were present in the workplace yesterday. In other words, select the workplace factors that prevented you from eating healthy yesterday.

(Select all that apply)

1. Heavy Workload/Job Demands
2. Time Constraints
3. Lack of Workplace Facilities/structures (i.e., Microwave, fridge, cafeteria)
4. Marketing of Unhealthy Options
5. Temptations Towards Unhealthy Options
6. Workplace Culture/Norms
7. Lack of Managerial Support (i.e., Ordering unhealthy food for lunch)
8. Higher Cost of Nutritious Options
9. Lack of Nutritious Options
10. Lack of Knowledge/Awareness
11. Lack of Nutritional Incentive Programs
12. Other _____

Personal Checklist of Barriers to Nutrition

Select the **barriers related to eating healthy** that were present outside of the workplace yesterday. In other words, select the personal factors that prevented you from eating healthy yesterday.

(Select all that apply)

1. Time Constraints
2. Marketing of Unhealthy Options
3. Temptations Towards Unhealthy Options
4. Preference of Less Healthy Options
5. Culture/Norms
6. Lack of Social Support
7. Higher Cost of Nutritious Options
8. Guilt of Not Eating Healthy
9. Boredom
10. Lack of Knowledge/Awareness
11. Don't Care About Eating Healthy
12. Health/Medical Constraints
13. Self-Control

14. Social/Familial Factors

15. Other _____

Workplace Checklist of Barriers to Exercise

Barriers Select the **barriers related to exercise** that were present in the workplace yesterday. In other words, select the workplace factors that prevented you from engaging in exercise yesterday.

(Select all that apply)

1. Heavy Workload/Job Demands
2. Time Constraints
3. Restrictive Workplace Policies
4. Workplace Culture/Norms
5. Lack of Managerial Support
6. Unsafe Exercise Environment/Conditions
7. Lack of Availability of Exercise Options
8. Lack of Showering Facilities at Worksite
9. Lack of Knowledge/Awareness
10. Lack of Exercise Incentive Programs
11. Other_____

Personal Checklist of Barriers to Exercise

Barriers Select the **barriers related to exercise** that were present outside the workplace yesterday. In other words, select the personal factors that prevented you from engaging in exercise yesterday.

(Select all that apply)

1. Time Constraints
2. Culture/Norms
3. Guilt Due to Not exercising, When I Should
4. Guilt Due to Exercising Instead of Doing Other Things (i.e., Spending Time with Family)
5. Cost of Access to Exercise Facilities
6. Unsafe Exercise Environment/Conditions
7. Fatigue
8. Physical Aliments/Health Constraints
9. Choosing to be More Physically Active
10. Temptations Towards Sedentary Behavior (Easier Not to Exercise)
11. Lack of Availability of Exercise Options
12. Lack of Knowledge/Awareness
13. Social/Familial Factors
14. Other_____

Workplace Checklist of Facilitators to Nutrition

Select the **facilitators related to eating healthy** that were present in the workplace yesterday. In other words, select the workplace factors that helped or made it easier for you to eat healthy yesterday.

(Select all that apply)

1. Availability of Nutritious Options
2. Time Availability
3. Proper Knowledge/Awareness
4. Light(er) Workload/Job Demands
5. Workplace Support/Diet Partner
6. Predictable Work Schedule
7. Work Flexibility
8. Health Promotion Initiatives
9. Other _____

Personal Checklist of Facilitators to Nutrition

Select the **facilitators related to eating healthy** that were present outside the workplace yesterday. In other words, select the personal factors that helped or made it easier for you to eat healthy yesterday.

(Select all that apply)

1. Planning Healthy Meals
2. Availability of Nutritious Options
3. Time Availability
4. Motivation/Disposition
5. Social Support/Diet Partner
6. Proper Knowledge/Awareness
7. Predictable Personal Schedule
8. Enjoyment of Eating Well
9. Perceptions of Self/Feeling Healthy
10. Other _____

Workplace Checklists to Facilitators to Exercise

Facilitators Select the **facilitators related to exercise** that were present in the workplace yesterday. In other words, select the workplace factors that helped or made it easier for you to exercise yesterday.

(Select all that apply)

1. Time Availability
2. Physical Work Environment
3. Social Support/Exercise Partner
4. Availability of Exercise Facilities/Equipment
5. Access to Shower Facilities
6. Light(er) Workload/Job Demands
7. Predictable Work Schedule
8. Proper Knowledge/Awareness
9. Work Flexibility
10. Workplace Health Promotion Initiatives
11. Other _____

Personal Checklists to Facilitators to Exercise

Facilitators Select the **facilitators related to exercise** that were present outside the workplace yesterday. In other words, select the personal factors that helped or made it easier for you to exercise yesterday.

(Select all that apply)

1. Time Availability
2. Exercising is a Habit
3. Social Support/Exercise Partner
4. Exercise Planning
5. Motivation/Disposition
6. Availability of Exercise Facilities/Equipment
7. Proper Sleep
8. Predictable Personal Schedule
9. Proper Knowledge/Awareness
10. Perceptions of Self/Feeling Healthy
11. Other _____

Exercise Related Choices

Scale: 2-point Likert scale

1. Did you exercise yesterday?
    - Yes
    - No
2. Did you plan on exercising yesterday?
    - Yes
    - No
3. Describe all exercise activity completed yesterday (including, but not limited to: walking, running, bicycling, stair climbing, tennis, sporting activities, aerobics, dance, yoga, weight lifting, swimming, etc.). Write 'none' if you did not exercise yesterday.
4. How would you describe the intensity of your exercise yesterday?
    - Mild
    - Moderate
    - Strenuous
5. Approximately how long did you exercise yesterday (in minutes)?

    _____

Shortened Health Promoting Lifestyle Profile II – Nutrition

Scale: 2-point Likert scale: 1) No; 2) Yes

How many of the following did you do yesterday?

1. Choose a diet low in fat, saturated fat, and cholesterol.
2. Limit use of sugars and food containing sugar (sweets).
3. Ate 2-4 servings of fruit (i.e. apples, oranges, bananas, raisins, etc.)
4. Ate 3-5 servings of vegetables (i.e. salad, vegetable soup, and fresh or cooked vegetables, NOT french fries, potato chips, or fried vegetables).
5. Ate 2-3 servings of milk, yogurt or cheese.
6. Read labels to identify nutrients, fats, and sodium content in packaged food.
7. Ate breakfast.

Well-Being

Below you'll find fourteen statements about your experiences. Please indicate how true each statement is regarding the experiences you've had yesterday. There are no right or wrong answers. Please, choose the answer that best reflects your experiences rather than what you think your experience should be.

Scale: 5-point Likert Scale: 1) Not at all true; 2) A bit true; 3) Somewhat true; 4) Mostly true; 5) Very True

1. I feel happy
2. I feel energetic
3. I feel calm
4. I feel optimistic
5. In my activities, I feel absorbed by what I'm doing
6. I feel great about myself
7. I am highly effective at what I do
8. I feel I am improving
9. I have a purpose
10. I feel close and connected to the people around me

Job Performance

Think about your work performance yesterday. Please rate your performance using the following scale.

Scale: 4-point Likert scale: 1) Very Low; 2) Low; 3) Somewhat Moderate; 4) Moderate; 5) Somewhat High; 6) High; 7) Very high

1. Quality of your performance.
2. Your productivity on the job.
3. How did you evaluate the performance of your peers at their jobs compared with yourself doing the same kind of work?
4. How do you evaluate the performance of yourself at your job compared with your peers doing the same work kind of work?

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts yesterday. In each case, you will be asked how often you felt or thought a certain way.

Scale: 5-point Likert scale: 0) Never; 1) Almost; 2) Sometimes; 3) Fairly Often; 4) Very Often

1. Yesterday, how often have you been upset because of something that happened unexpectedly?
2. Yesterday, how often have you felt that you were unable to control the important things in your life?
3. Yesterday, how often have you felt nervous and “stressed”?
4. Yesterday, how often have you felt confident about your ability to handle your personal problems?
5. Yesterday how often have you felt that things were going your way?
6. Yesterday, how often have you found that you could not cope with all the things that you had to do?
7. Yesterday, how often have you been able to control irritations in your life?
8. Yesterday how often have you felt that you were on top of things?
9. Yesterday how often have you been angered because of things that were outside of your control?
10. Yesterday, how often have you felt difficulties were piling up so high that you could not overcome them?

Physical Symptoms

Did you experience any of the following physical symptoms yesterday?

Scale: 2-Point Likert scale;1) No; 2) Yes

1. Upset Stomach?
2. Backache?
3. Trouble sleeping?
4. Headache?
5. Acid indigestion or heartburn?
6. Diarrhea?
7. Constipation?
8. Ringing in the ears?
9. Loss of appetite?
10. Dizziness?
11. Tiredness or fatigue?

Overall Health

Scale: 5-Point Likert scale

1. How would you rate your overall health at the present time?
    - Poor
    - Fair
    - Good
    - Very Good
    - Excellent
2. How is your present health compared to 5 years ago?
    - Must worse now than 5 years ago
    - Somewhat worse now than 5 years ago
    - About the same
    - somewhat better now than 5 years ago
    - much better now than 5 years ago
3. How much do your health troubles stand in the way of your doing things you want to do?
    - Not at all
    - Slightly
    - Moderately
    - Quite a bit
    - Extremely

BIG Five Personality

Please use this list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly the same age.

Scale: 9-point Likert scale: 1) Extremely Inaccurate; 2) Inaccurate; 3) Moderately Inaccurate; 4) Moderately Neutral; 5) Neutral; 6) Accurate; 7) Moderately Accurate; 8) Somewhat Accurate; 9) Extremely Accurate

1. Bashful
2. Bold
3. Careless
4. Cold
5. Complex
6. Cooperative
7. Creative
8. Deep
9. Disorganized
10. Efficient
11. Energetic
12. Envious
13. Extraverted
14. Fretful

15. Harsh
16. Imaginative
17. Inefficient
18. Intellectual
19. Jealous
20. Kind
21. Moody
22. Organized
23. Philosophical
24. Practical
25. Quiet
26. Relaxed
27. Rude
28. Shy
29. Sloopy
30. Sympathetic
31. Systematic
32. Talkative
33. Temperamental
34. Touchy
35. Uncreative
36. Unenvious
37. Unintellectual

38. Unsympathetic
39. Warm
40. Withdrawn

Positive and Negative Affect

Please rate very carefully the degree to which you experience each of the following feelings *in general, that is, on the average*:

Scale: 9-point Likert scale: 1) Never; 2) Almost Never; 3) Rarely 4) Occasionally; 5) Often 6) Fairly often; 7) Often; 8) Moderately often; 9) Very often

1. Joyful
2. Afraid
3. Appreciative
4. Guilty
5. Scared
6. Mad
7. Self-fulfilled
8. Grateful
9. Irritated
10. Blue
11. Thankful
12. Delighted
13. Angry
14. Gloomy
15. Sorry
16. Nervous
17. Remorseful

18. Happy
19. Proud
20. Sad

Work Family Conflict

Please indicate the degree to which you agree or disagree with each statement about your work and family life.

Scale: 4-point Likert scale: 1) Strongly disagree; 2) Somewhat Disagree; 3) Neither agree nor disagree; 4) Somewhat agree; 5) Strongly agree

1. I have to miss family activities due to the amount of time I must spend on work responsibilities.
2. I am often so emotionally drained when I get home from work that it prevents me from contributing to my family.
3. The behaviors I perform that make me effective at work do not help me be a better family member.
4. I have to miss wok activities due to the amount of time I must spend on family responsibilities.
5. Because I am often stressed from family responsibilities, I have a hard time concentrating on my work.
6. Behavior that is effective and necessary for me at home would be counterproductive at work.

Self esteem

Please rate the extent to which you agree or disagree with each statement about yourself.

Scale: 4-point Likert scale: 1) Strongly disagree; 2) Disagree; 3) Agree; 4) Strongly agree

1. I feel that I am a person of worth, at least on an equal plane with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined t feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I take positive attitude toward myself.
7. On a whole, I am satisfied with myself.
8. I certainly feel useless at times.
9. At times I think I am no good at all.

Overall job satisfaction

Please rate the extent to which you agree or disagree with statement about your job.

Scale: 5-point Likert Scale: 1) Strongly disagree; 2) Disagree; 3) Neutral; 4) Agree; 5) Strongly agree

1. I find real enjoyment in my job.
2. I like my job better than the average person.
3. Most days I am enthusiastic about my job.
4. I feel fairly well satisfied with my job.

Body image

For each of the items below, select the response that best describes how you feel right now at this very moment.

Scale: 8-point Likert scale: 1) Extremely satisfied; 2) Mostly satisfied; 3) Moderately satisfied; 4) Slightly satisfied; 5) Neither dissatisfied; 6) Slightly dissatisfied; 7) Moderately dissatisfied; 8) Extremely dissatisfied

1. Right now I feel… with my physical appearance
2. Right now I feel…with my body size and shape
3. Right now I feel---with my weight
4. Right now I feel…physically attractive
5. Right now I feel…about my looks than I usually feel
6. Right now I feel…than the average person looks

Appendix B

Study day 5

Work From Home

Scale: 2-point Likert scale

1. Did you work yesterday?
    - Yes
    - No
2. How many hours did you work yesterday?
3. Did you work from home yesterday?
    - Yes
    - No
4. Were you responsible for providing care to others yesterday (such as child care or elder care)?
    - Yes
    - No
5. Were you responsible for providing education to kids at home yesterday?
    - Yes
    - No

Workplace Checklist of Barriers to Nutrition

Select the **barriers related to eating healthy** that were present in the workplace yesterday. In other words, select the workplace factors that prevented you from eating healthy yesterday. (Indicate the extent each these of impacted your ability to eat healthy yesterday)

(Select all that apply)

1. Heavy Workload/Job Demands
2. Time Constraints
3. Lack of Workplace Facilities/structures (i.e., Microwave, fridge, cafeteria)
4. Marketing of Unhealthy Options
5. Temptations Towards Unhealthy Options
6. Workplace Culture/Norms
7. Lack of Managerial Support (i.e., ordering unhealthy food for lunch)
8. Higher Cost of Nutritious Options
9. Lack of Nutritious Options
10. Lack of Knowledge/Awareness
11. Lack of Nutritional Incentive Programs
12. Other _____

Personal Checklist of Barriers to Nutrition

Select the **barriers related to eating healthy** that were present outside of the workplace yesterday. In other words, select the personal factors that prevented you from eating healthy yesterday.

(Select all that apply)

1. Time Constraints
2. Marketing of Unhealthy Options
3. Temptations Towards Unhealthy Options
4. Preference of Less Healthy Options
5. Culture/Norms
6. Lack of Social Support
7. Higher Cost of Nutritious Options
8. Guilt of Not Eating Healthy
9. Boredom
10. Lack of Knowledge/Awareness
11. Don't Care About Eating Healthy
12. Health/Medical Constraints
13. Self-Control

14. Social/Familial Factors

15. Other _____

Workplace Checklist of Barriers to Exercise

Barriers Select the **barriers related to exercise** that were present in the workplace yesterday. In other words, select the workplace factors that prevented you from engaging in exercise yesterday.

(Select all that apply)

1. Heavy Workload/Job Demands
2. Time Constraints
3. Restrictive Workplace Policies
4. Workplace Culture/Norms
5. Lack of Managerial Support
6. Unsafe Exercise Environment/Conditions
7. Lack of Availability of Exercise Options
8. Lack of Showering Facilities at Worksite
9. Lack of Knowledge/Awareness
10. Lack of Exercise Incentive Programs
11. Other_____

Personal Checklist of Barriers to Exercise

Barriers Select the **barriers related to exercise** that were present outside the workplace yesterday. In other words, select the personal factors that prevented you from engaging in exercise yesterday.

(Select all that apply)

1. Time Constraints
2. Culture/Norms
3. Guilt Due to Not exercising, When I Should
4. Guilt Due to Exercising Instead of Doing Other Things (i.e., Spending Time with Family)
5. Cost of Access to Exercise Facilities
6. Unsafe Exercise Environment/Conditions
7. Fatigue
8. Physical Aliments/Health Constraints
9. Choosing to be More Physically Active
10. Temptations Towards Sedentary Behavior (Easier Not to Exercise)
11. Lack of Availability of Exercise Options
12. Lack of Knowledge/Awareness
13. Social/Familial Factors
14. Other_____

Workplace Checklist of Facilitators to Nutrition

Select the **facilitators related to eating healthy** that were present in the workplace yesterday. In other words, select the workplace factors that helped or made it easier for you to eat healthy yesterday.

(Select all that apply)

1. Availability of Nutritious Options
2. Time Availability
3. Proper Knowledge/Awareness
4. Light(er) Workload/Job Demands
5. Workplace Support/Diet Partner
6. Predictable Work Schedule
7. Work Flexibility
8. Health Promotion Initiatives
9. Other _____

Personal Checklist of Facilitators to Nutrition

Select the **facilitators related to eating healthy** that were present outside the workplace yesterday. In other words, select the personal factors that helped or made it easier for you to eat healthy yesterday.

(Select all that apply)

1. Planning Healthy Meals
2. Availability of Nutritious Options
3. Time Availability
4. Motivation/Disposition
5. Social Support/Diet Partner
6. Proper Knowledge/Awareness
7. Predictable Personal Schedule
8. Enjoyment of Eating Well
9. Perceptions of Self/Feeling Healthy
10. Other _____

Workplace Checklists to Facilitators to Exercise

Facilitators Select the **facilitators related to exercise** that were present in the workplace yesterday. In other words, select the workplace factors that helped or made it easier for you to exercise yesterday.

(Select all that apply)

1. Time Availability
2. Physical Work Environment
3. Social Support/Exercise Partner
4. Availability of Exercise Facilities/Equipment
5. Access to Shower Facilities
6. Light(er) Workload/Job Demands
7. Predictable Work Schedule
8. Proper Knowledge/Awareness
9. Work Flexibility
10. Workplace Health Promotion Initiatives
11. Other _____

Exercise Related Choices

Scale: 2-point Likert scale

1. Did you exercise yesterday?
    - Yes
    - No
2. Did you plan on exercising yesterday?
    - Yes
    - No
3. Describe all exercise activity completed yesterday (including, but not limited to: walking, running, bicycling, stair climbing, tennis, sporting activities, aerobics, dance, yoga, weight lifting, swimming, etc.). Write 'none' if you did not exercise yesterday.
4. How would you describe the intensity of your exercise yesterday?
    - Mild
    - Moderate
    - Strenuous
5. Approximately how long did you exercise yesterday (in minutes)?

Shortened Health Promoting Lifestyle Profile II – Nutrition

Scale: 2-point Likert scale: 1) No; 2) Yes

How many of the following did you do yesterday?

1. Choose a diet low in fat, saturated fat, and cholesterol.
2. Limit use of sugars and food containing sugar (sweets).
3. Ate 2-4 servings of fruit (i.e. apples, oranges, bananas, raisins, etc.)
4. Ate 3-5 servings of vegetables (i.e. salad, vegetable soup, and fresh or cooked vegetables, NOT french fries, potato chips, or fried vegetables).
5. Ate 2-3 servings of milk, yogurt or cheese.
6. Read labels to identify nutrients, fats, and sodium content in packaged food.
7. Ate breakfast.

Well-Being

Below you'll find fourteen statements about your experiences. Please indicate how true each statement is regarding the experiences you've had yesterday. There are no right or wrong answers. Please, choose the answer that best reflects your experiences rather than what you think your experience should be.

Scale: 5-point Likert Scale: 1) Not at all true; 2) Slightly true; 3) Somewhat true; 4) Mostly true; 5) Very true

1. I feel happy
2. I feel energetic
3. I feel calm
4. I feel optimistic
5. In my activities, I feel absorbed by what I'm doing
6. I feel great about myself
7. I am highly effective at what I do
8. I feel I am improving
9. I have a purpose
10. I feel close and connected to the people around me

Job Performance

Think about your work performance yesterday. Please rate your performance using the following scale.

Scale: 7-point Likert scale: 1) Very Low; 2) Low; 3) Somewhat Moderate; 4) Moderate; 5) Somewhat High; 6) High; 7) Very high

5. Quality of your performance.
6. Your productivity on the job.
7. How did you evaluate the performance of your peers at their jobs compared with yourself doing the same kind of work?
8. How do you evaluate the performance of yourself at your job compared with your peers doing the same work kind of work?

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts yesterday. In each case, you will be asked how often you felt or thought a certain way.

Scale: 5-point Likert scale: 0) Never; 1) Almost; 2) Sometimes; 3) Fairly Often; 4) Very Often

1. Yesterday, how often have you been upset because of something that happened unexpectedly?
2. Yesterday, how often have you felt that you were unable to control the important things in your life?
3. Yesterday, how often have you felt nervous and “stressed”?
4. Yesterday, how often have you felt confident about your ability to handle your personal problems?
5. Yesterday how often have you felt that things were going your way?
6. Yesterday, how often have you found that you could not cope with all the things that you had to do?
7. Yesterday, how often have you been able to control irritations in your life?
8. Yesterday how often have you felt that you were on top of things?
9. Yesterday how often have you been angered because of things that were outside of your control?
10. Yesterday, how often have you felt difficulties were piling up so high that you could not overcome them?

Physical Symptoms

Did you experience any of the following physical symptoms yesterday?

Scale: 2-Point Likert scale;1) No; 2) Yes

1. Upset Stomach?
2. Backache?
3. Trouble sleeping?
4. Headache?
5. Acid indigestion or heartburn?
6. Diarrhea?
7. Constipation?
8. Ringing in the ears?
9. Loss of appetite?
10. Dizziness?
11. Tiredness or fatigue?

Overall Health

Scale: 5-Point Likert scale

1. How would you rate your overall health at the present time?
    - Poor
    - Fair
    - Good
    - Very Good
    - Excellent
2. How is your present health compared to 5 years ago?
    - Must worse now than 5 years ago
    - Somewhat worse now than 5 years ago
    - About the same
    - somewhat better now than 5 years ago
    - much better now than 5 years ago
3. How much do your health troubles stand in the way of your doing things you want to do?
    - Not at all
    - Slightly
    - Moderately
    - Quite a bit
    - Extremely

BIG Five Personality

Please use this list of common human traits to describe yourself as accurately as possible. Describe yourself as you see yourself at the present time, not as you wish to be in the future. Describe yourself as you are generally or typically, as compared with other persons you know of the same sex and of roughly the same age.

Scale: 9-point Likert scale: 1) Extremely Inaccurate - 9) Extremely Accurate

1. Bashful
2. Bold
3. 18. Careless
4. Cold
5. Complex
6. Cooperative
7. Creative
8. Deep
9. Disorganized
10. Efficient
11. Energetic
12. Envious
13. Extraverted
14. Fretful
15. Harsh
16. Imaginative

17. Inefficient
18. Intellectual
19. Jealous
20. Kind
21. Moody
22. Organized
23. Philosophical
24. Practical
25. Quiet
26. Relaxed
27. Rude
28. Shy
29. Sloopy
30. Sympathetic
31. Systematic
32. Talkative
33. Temperamental
34. Touchy
35. Uncreative
36. Unenvious
37. Unintellectual
38. Unsympathetic
39. Warm

40. Withdrawn

Positive and Negative Affect

Please rate very carefully the degree to which you experience each of the following feelings *in general, that is, on the average*:

Scale: 9-point Likert scale: 1) Never - 9) Very Often

1. Joyful
2. Afraid
3. Appreciative
4. Guilty
5. Scared
6. Mad
7. Self-fulfilled
8. Grateful
9. Irritated
10. Blue
11. Thankful
12. Delighted
13. Angry
14. Gloomy
15. Sorry
16. Nervous
17. Remorseful
18. Happy

19. Proud
20. Sad

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3. Right now I feel---with my weight
4. Right now I feel…physically attractive
5. Right now I feel…about my looks than I usually feel
6. Right now I feel…than the average person looks

Demographics

1. What is your current age?

   _____

2. What is your gender?

   - Male
   - Female
   - Prefer not answer

3. Which of the following (ethnicity) do you most identify with?

   - White, non-Hispanic
   - African-American
   - Asian
   - Hispanic
   - American Indian/Native American
   - Mixed Ethnicity
   - Other

4. What is your height?

   - Feet
   - Inches

5. What is your weight (in pounds)?

Employment

1. Are you currently employed?
    - Yes
    - No
2. Do you commute to work?
    - Yes
    - No
3. If you commute to work, how long is your commute?
4. On average, how many hours do you work each week?
5. If you have a job, is it a blue collar or white-collar job?
    - Blue Collar
    - White Collar
    - Other _____
6. What job level would you classify yourself as:
    - Executive - generally refers to those who have authority over entire business units; they often manage managers
    - Management - generally refers to those who manage other employees - whether they be other managers or individual contributors
    - Professional - generally refers to individual contributors who prioritize, plan and execute long term work projects
    - Support - generally refers to individual contributors whose work and its prioritization is done by a manager
7. What industry sector do you work in?

- Construction
- Education and Health Services
- Financial Activities (includes Real Estate)
- Information (includes Media, Telecom, Data Processing and other information services
- Leisure and Hospitality
- Manufacturing
- Natural Resources and Mining
- Professional and Business Services
- Trade, Transportation and Utilities (includes Retail)
- Other _____

R code Input

```
install.packages(c('nlme','lme4','MASS','boot','car','lattice','ggplot2
','multcomp','stringr','sjPlot','sjmisc','lavaan','mlma','manymome','se
mTools'),dependencies=TRUE)

myd<-read.csv
summary(myd)
attach(myd)


library(nlme)
library(lme4)
library(MASS)
library(boot)
library(car)
library(lattice)
library(ggplot2)
library(multcomp)
library(stringr)
library(sjPlot)
library(sjmisc)
library(lavaan)
library(mlma)
library(manymome)
library(semTools)


#### hypothesis 1a

## Hypothesis 1a & 1c ##
model1<-lmer(diet.total~ nutrition.facilitator.total +
nutrition.barrier.total +DAY+(1|IDCode))
summary(model1)


## Hypothesis 1b & 1d
model2<-
lmer(exercise.total~exercise.facilitator.total+exercise.barrier.total+D
AY+(1|IDCode))
summary(model2)


############################
### MEDIATION MODEL TEST ###
############################


#predictors varying by day & participant
work2.home~DAY+IDCode

#direct effects
# y~c*x

stress.total.new ~ c1*work2.home +DAY+IDCode
```

```
#mediator
#m1~a1*x1
#m2~a2*x1
#m3~a3*x1
#m4~a4*x1
#y~c1*m1+c2*m2

nutrition.barrier.total ~ a1*work2.home +DAY+ IDCode
nutrition.facilitator.total~a2*work2.home +DAY+ IDCode
exercise.barrier.total ~a3*work2.home +DAY+ IDCode
exercise.facilitator.total~a4*work2.home +DAY+ IDCode
stress.total.new ~ b1*nutrition.barrier.total +
b2*nutrition.facilitator.total + b3*exercise.barrier.total +
b4*exercise.facilitator.total


#indirect effect (a*b)
wfh_nbar_stress:=a1*c1
wfh_nfac_stress:=a2*c1
wfh_exbar_stress:=a3*c1
wfh_exfac_stress:=a4*c1

#total effect

total1:= b1+(a1*c1)
total2:= b2+(a2*c1)
total3:= b3+(a3*c1)
total4:= b4+(a4*c1)
'
fit<-sem(mediation.model,data=myd,cluster="IDCode")
summary(fit,nd=5L)
```