THESIS

TELEWORK, WORK ABILITY, AND WELL-BEING AMONG WORKERS WITH CHRONIC HEALTH CONDITIONS

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ABSTRACT

TELEWORK, WORK ABILITY, AND WELL-BEING AMONG WORKERS WITH CHRONIC HEALTH CONDITIONS

In the current study, I investigate the relationship between telework, work ability (i.e., job-related functional capacity), and well-being among workers with chronic health conditions (CHCs). Specifically, I address four research questions: 1) how does the utilization of telework relate to work ability and well-being in workers with CHCs, 2) do job control and flexibility mediate the relationships between telework, work ability, and wellbeing among workers with CHCs, 3) does the type of work activity performed moderate the relationship between telework, work ability, and well-being via perceptions of flexibility and job control, and 4) does the relationship between telework, wellbeing, and ability change when employees work more hours via telework arrangements? Using an experience sampling design, I demonstrate how the relationship between telework and daily perceptions of work ability and well-being among workers with CHCs' is primarily driven through perceptions of job control workers experience when teleworking versus attending their central organization. This relationship is also related to the nature of one's work, such that when individuals' jobs require high levels of educating or training others (i.e., remote learning), they experience less job control within the teleworking context, and subsequently report poorer work ability and well-being. Considering these findings, organizations might better define instances in which telework may be used an effective accommodation practice for workers with chronic health conditions.

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TELEWORK

Telework, also referred to as telecommuting, is defined as "a work practice that involves members of an organization substituting a portion of their typical work hours (ranging from a few hours a week to nearly full-time) to work away from a central workplace – typically principally from home – using technology to interact with others as needed to conduct work tasks" (Allen et al., 2015, p. 44). In general, the proportion of teleworking employees has increased by 173% since 2005 (Global Workplace Analytics, 2020a). More recently a large number of employees have begun teleworking as organizational responses to the COVID-19 pandemic, and this trend is likely to increase by another 25 – 35% within the next two years (Global Workplace Analytics, 2020b). As the proportion of teleworking employees continues to rise, researchers will be tasked with the demand for further investigation into the effectiveness of this new way of working.

To date, psychological research related to telework has primarily focused on organizational outcomes such as job performance, with only modest research investigating the influence of telework utilization on individual health and well-being. In addition, most research related to telework has studied workers in the general working population, without a specific focus on special groups such as individuals with chronic health conditions (CHCs). The lack of focus on workers who may be at an increased risk of poor well-being is surprising considering the cultural and organizational factors which contributed to the rise in the development of telework programs in the early 1990's and well into the 21st century. For instance, the Americans with Disabilities Act, passed into U.S. law in 1990, encouraged the development and usage of telework programs as a method for promoting the hiring and retention of employees with

disabilities. Telework is one work design practice by which employers may provide reasonable accommodations for workers with a disability or chronic health conditions. The passing of this act, followed by advancements in technology and an increased desire from employees for flexibility within the workplace, further contributed to the significant rise in teleworking employees seen through the last decade.

Today, approximately 60 percent of people in the adult population in the United States are managing at least one chronic health condition or disability, and the proportion of adults with one or more chronic health conditions is expected to rise (Buttorff, Ruder, & Bauman, 2017). Certain chronic diseases such as heart disease, cancer, respiratory illness, mental disorders, and diabetes are the leading cause of death, disability, and the United States' $3.5 trillion yearly health care costs (Center for Disease Control and Prevention, 2020; Kane et al., 2005). Chronic health conditions can lead to reduced overall health, which leads to an inability to participate in the workforce (Kane et al., 2005). This relationship fuels a cycle in which those with reduced health lose access to the income necessary to pay for health care services, further exacerbating their chronic conditions. Therefore, supporting the needs of individuals with chronic health conditions should be of interest and concern to both organizations and occupational health researchers due to the associated risks of rising health care costs, workforce outcomes such as increased absenteeism and reduced productivity, and the necessity of ensuring the ability of these workers to remain in the workforce.

Despite the rising number of adults managing chronic health conditions alongside advancements in technology and workplace flexibility, relatively little research has addressed the role of telework in enhancing and promoting the day-to-day work lives of individuals with

chronic health conditions. In addition, the current majority of telework research among populations with chronic illness and disability lack a theoretical backing.

The current study aims to fill critical gaps in the telework literature to inform organizational practices by identifying how the use of telework and the work activities one performs while teleworking relates to the perceived work ability and well-being among workers managing CHCs at work. Additionally, this study aims to identify factors that might mediate the relationship between telework and perceived work ability and well-being, and how this relationship might vary based on the amount of time workers spend teleworking as a proportion of their overall working hours.

Work-Related Outcomes

Since Niles (1975) coined the word "telecommuting," also referred to as telework, teleworking arrangements have been implemented within organizations to alleviate a variety of organizational and social challenges. Increased interest in teleworking has been largely linked to the potential to reduce motor vehicle emissions, promote the retention and hiring of individuals with reduced health, and the ability to provide employees with desired flexibility to support work/life and work/family considerations (Bailey & Kurland, 2002).

Much of the early studies related to telework maintained a focus on who, why, how individuals engage in telework, as well as the work-related outcomes of telework (Bailey & Kurland, 2002). Through a meta-analytic study by Gajendran & Harrison (2007), we know that telework is associated with higher supervisor-rated objective performance metrics, and that supervisor evaluations of task and conceptual performance are higher for teleworkers versus non-teleworkers (Gajendran, Harrison, & Delaney-Klinger, 2014). Telework is also positively associated with work-related wellbeing components such as job satisfaction. Studies have

documented the positive relationship between telework and worker job satisfaction, as well as the job characteristics which help define this positive association (Gajendran & Harrison, 2007; Golden, 2006; Vega, 2015). More recently, researchers have begun to investigate the moderating role of the extent of telework, or the number of hours spent teleworking as a proportion of one's overall working hour, as a link between telework and worker job satisfaction (Golden, 2006; Golden & Viega, 2005). These studies have replicated a curvilinear relationship between telework and job satisfaction, with an overall positive incline in job satisfaction in relation to the number of hours worked but with a plateau at approximately 15 hours spent teleworking each week. Investigating the outcomes associated with the extent of telework has become a primary focus of many telework studies, as the amount of time spent teleworking also has implications for employee health and well-being (Henke et al., 2016).

Health and Well-being Outcomes

The health and well-being outcomes reported in the telework literature are equivocal. There is previous research that has found a positive association between telework and indicators of well-being (Sardeskmukh et al., 2012). For instance, Sardeskmukh et al. found telework to be negatively associated with exhaustion, partially due to increases in perceived job autonomy (or control) for teleworking employees. In addition, for workers with high work demands, telework has been shown to mediate psychological strain indicators by providing increased flexibility.

However, some authors have shown higher rates of adverse mental health symptoms related to stress in teleworkers when compared to non-teleworkers (Mann & Holdsworth, 2003). Again, controversial evidence from Henke et al. (2016) found teleworkers who work from home eight hours or less a week were significantly less likely to experience depressive symptoms compared to non-teleworkers. Much of these differences have been assumed to be related to

differences in the amount of time spent teleworking per week (i.e., the extent of telework) between the participants in both studies. Participants in the study by Mann & Holdsworth (2003) were primarily full-time teleworkers, whereas the employees studied by Henke et al. (2016) utilized their option to telework across a variety of working hours.

As a whole, there is enough evidence to suggest teleworking is beneficial for employee health and well-being. Employees utilizing their option to telework have reported reduced tiredness (Song & Gao, 2018), levels of exhaustion (Sardeshmukh et al., 2012), work role overload measured through Caplan et al.'s seven-item measure (Duxbury & Halinsky, 2012), and role stress (Gajendran & Harrison, 2007). Employees who telework are also shown to have lower overall health risk scores (Henke et al., 2016) and blood pressure (Lundberg et al., 2002) than non-teleworkers. Nonetheless, more research into the intricacies of the relationship between telework and employee health and well-being is necessary in order to alleviate the ambiguity of results within the teleworking literature. This study aims to relieve the confusion of telework and well-being results by evaluating the moderating role of the extent of telework in the relationship between telework utilization and employee wellbeing for those with chronic health conditions.

Chronic health conditions may be defined as illnesses, diseases, or other conditions that last as long as one year, require ongoing medical management or treatment, and limit one's daily activities (U.S. Centers for Disease Control and Prevention, 2020). With respect to work, chronic health conditions present challenges to employers related to healthcare costs, absenteeism, and lost productivity (Asay et al., 2016). The associated costs of these challenges have been reported to be as high as $635 billion per year (Gaskin & Richard, 2012). Although this financial expenditure is rather astounding, there are an abundance of challenges which workers themselves may face in light of their chronic health conditions. For instance, workers with chronic health conditions have more frequent visits to their health care professionals requiring additional absences from work. Individuals with one chronic condition average 7.4 visits to their healthcare provider annually compared with 1.7 visits for individuals with no chronic conditions, and the average number of visits increases in direct capacity to the number of chronic health conditions an individual has (Kane et al., 2005). In addition, workers with chronic illness are twice as likely to experience a bad health day. In the event of a bad health day, it is likely one's overall functional capacity may be negatively affective.

Another challenge which individuals with CHCs may experience is maintaining their work ability. Within the occupational health literature, work ability was originally conceptualized by Ilmarinen and colleagues and defined as "a worker's job-related functional capacity, or a worker's ability to continue working in his or her current job, given the challenges or demands of the job and his or her resources" (Ilmarinen, 2009, cited by McGonagle et al., 2015, p. 376). Work ability research has considered specific aspects of jobs, including physical,

cognitive, and interpersonal job demands. Examples of these job demands may include lifting or moving objects (physical), completing mentally demanding tasks such as reading technical documents (cognitive), or being required to communicate with, or work effectively with others in a team setting (interpersonal.)

Further, work ability is an important component for promoting and maintaining a worker's health-related quality of life (Tavakoli-Fard et al., 2016), well-being (Walker et al., 2015), and likelihood to remain in the workforce (McGonagle et al., 2015). Lower levels of work ability, for example, have been linked to the probability of disability leave and/or early retirement (McGonagle et al., 2015; Sell et al, 2015). Work ability is also referred to as a common work demand and contributor to worker absence (Beatty, 2012; Issa et al., 2012).

In order to promote and maintain work ability among employees with CHCs, scholars have highlighted the importance of work factors such as job control and flexibility (Beatty, 2012; Issa et al., 2012). In the occupational rehabilitation literature, these factors are often referred to as "leeway" which allows workers to manage their respective health conditions and symptomology while also successfully performing their work tasks (Tveito et al., 2010). In general, organizations have been encouraged to provide flexible organizational policies and working arrangements. Ways in which employees have successfully utilized forms of flexibility and control are represented in Tveito et al.'s (2010) study in which participants reported taking actions such as using an exercise ball instead of a chair, laying down on their office floor during rest breaks, and reorganizing their work schedule in order to best manage their chronic pain. This study will evaluate how engaging in various work activities when teleworking influence employee perceptions of flexibility and control with further implications for the work ability and well-being of employees with CHCs.

Organizational Policy for Use of Telework

As previously mentioned, the Americans with Disabilities Act of 1990 promoted the use of telework to better retain workers with disability and chronic illness. Although the ADA recognizes telework as a potential reasonable accommodation, federal courts have been reluctant to legally recognize the use of telework as an accommodation practice unless the nature of the job is specifically conducive to the telework context (Blount, 2019). Therefore, organizations are not legally obligated to provide telework as an option for employees with a disability or chronic illness. Blount (2019) insists that organizations considering telework as a reasonable accommodation must ultimately include the impact on the business in the form of costs and employee performance in their evaluation. Global Workforce Analytics (2020a, 2020b) suggested teleworking as a means for organizations to save an average of $11,000 a year per half-time telecommuting employee, and over $500 billion a year in real estate, electricity, absenteeism, turnover, and productivity. In addition, Solevieva et al. (2011) found that 61% of sampled employers reported more than $1,000 in revenue as a result of accommodating a worker with a disability or CHC. Considering these statistics, if using telework is shown to be an effective accommodation method by which to increase employees' work ability and wellbeing, organizations who utilize telework as an accommodation practice could save a considerable amount of capital while also supporting their employees with disabilities and chronic illness.

Individual Use of Telework

At the individual level, there are a small number of studies investigating the use of telework as a flexible work arrangement and accommodation practice for workers with disability

and/or CHCs. Linden & Milchus (2014) explain telework presents opportunities for individuals with disability and CHCs to remove barriers presented by traditional workplace practices and locations such as the need to be physically present within the central organization. It is thought telework allows employees to perform their work in an environment that has been designed to meet their functional abilities, as well as have more flexibility over their schedule in order to overcome pain and fatigue barriers associated with working within the conventional workplace (Linden, 2014). In Linden & Milchus's (2014) study of telework as an accommodation, the most frequently used telework-associated policy was scheduling flexibility. Teleworking employees were able to better schedule and utilize their breaks in order to address pain and fatigue during the workday.

The finding that individuals with chronic health conditions found telework arrangements to better meet their flexibility and control needs are consistent with the general teleworking literature, such that telework is thought to increase perceptions of both flexibility and autonomy for traditional employees (Gajendran & Harrison, 2007). Since both flexibility and autonomy are related to positive work ability outcomes for workers with disability and/or CHCs, it is also possible that using telework will result in better work and well-being outcomes for workers with CHCs. Thus, the current study is necessary to extend both the scientific and practitioner communities' understanding of telework as a flexible work arrangement, and more specifically, effective organizational practice and accommodations for workers with CHCs.

Telework & COVID-19

The onset and continued prevalence of the COVID-19 pandemic presented a considerable methodological concern for the current study. Before the onset of the pandemic, it was likely many employees enrolled in a telework arrangement with their organization had variability in

when they chose to utilize their ability to telework. Since a number of organizations have moved to a fully, or partial, virtual workplace, there was a presumed difficulty of detecting sufficient variance in the utilization of telework versus non-telework work arrangement. However, I presumed there may be instances in which employees with chronic health conditions choose to work from home in order to avoid exposure to the virus, and although that decision might not directly relate to their ability to manage their CHC, the utilization of telework would potentially allow them to maintain their work ability in light of their membership of an at-risk health category during the pandemic.

THEORETICAL FRAMEWORK

Job Demands-Resources Model

The job-demands-resource (JDR) model is a widely cited and empirically supported model in the occupational health psychology literature. The foundational components of the JDR model are the presence of job demands and job resources as characteristics of one's job (Bakker & Demerouti, 2014). By definition, *job demands* are the "physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs" (Demerouti et al., 2001, p. 501). *Job resources* refer to the "physical, psychological, social or organizational aspects of the job that are (a) functional in achieving work goals, (b) reduce job demands are the associated physiological and psychological costs, or (c) stimulate personal growth, learning, and development" (Bakker & Demerouti, 2014, p. 9). The JDR model posits when individuals have insufficient job resources to meet their job demands, burnout and strain may result. Conversely, individuals who have ample job resources to mitigate the demands of their work are more likely to have positive outcomes related to job performance and well-being.

However, for workers with CHCs, increases in symptoms and the need to manage their respective health conditions may provide additional demands in which the natural design of their jobs does not effectively address. In these instances, employees may enact behaviors which change the design of their job to meet their demand needs. Within the JDR framework, these behaviors are referred to as *job crafting* (Bakker & Demerouti, 2014; Wrześniewski & Dutton, 2001). Job crafting may be defined as the changes employees make to manipulate their job demands and job resources (Tims et al., 2012). Petrou et al. (2012) suggest these changes can be

made for an individual to create working conditions which better support their overall health and work motivation. For employees with chronic illness, utilizing their option to telework as a way to meet their demand needs may be seen as a form of job crafting in which employees manipulate their working environments in order to better care for their functional and psychological health. However, prior research has indicated that not all telework is inherently flexible (Gajendran & Harrison, 2007) and may be a result of the type of work an individual engages in and the greater design of their job. For instance, the type of work activities an individual practices at work may change the degree to which telework is seen as a job resource. Certain work activities, such as data entry or responding to emails may allow workers more flexibility and control to attend to their health needs than tasks such as participating in video-based conferencing. Thus, there is at least some suggestion (Gajendran & Harrison, 2007), that the type of work activities a worker engages in while teleworking will contribute to the flexibility and control a worker perceives when teleworking.

PRESENT STUDY

The primary goal of the present study was to investigate whether, and how, the option and utilization of telework is an effective mechanism by which to increase the work ability and psychological well-being of workers with chronic health conditions. Employees with disability and/or CHCs are an understudied population within the telework empirical literature. The current state of telework research reports telework to be a mechanism by which to reduce job demands and increase employee resources with consideration to the general working population. This study extends our comprehension of the relationship between telework and employee wellbeing to an often-overlooked population, employees with chronic health conditions. A greater understanding of how and why telework influences the work ability and well-being of this population will better inform both researchers and organizational policy makers on the extent to which telework may be implemented within the workplace to support workers with reduced health.

Research Questions and Hypotheses

Within-Person Effects

Specifically, this study addresses four major questions. First at the within-person level, I investigate how workers' perceived work ability and well-being differ as a result of teleworking (**R1**). From a job demands – resources perspective, although a worker's occupational setting may have sufficient job resources, such as supervisor support or ample professional development opportunities by which to combat the demands of their work, these resources may not sufficiently address a worker's personal demands of navigating the workplace while managing their CHC(s). Even workplace policies meant to support worker illness, such as sick leave

policies, may not satisfactorily support the needs of workers with CHCs, as they lack the necessary flexibility needed to manage a chronic illness (Beatty, 2012). These policies are often designed for acute sickness, in which there is a brief period of absence for recovery before an employee is able to return to work (Kane, 2005). CHCs are often more ambiguous, long-term, and susceptible to upticks in symptoms (often referred to as flares), and therefore require differential resources for management.

Using the job-demands resources model, I assume the utilization of telework will act as a form of job crafting, increasing participants' personal resources, and subsequently alleviating the demands of managing a chronic health condition in the workplace. I expect the alleviation of these demands will therein support workers' work ability and subjective well-being. Thus, I hypothesize:

Hypothesis 1*:* Daily telework will be positively associated with workers' daily ratings of work ability.

Hypothesis 2*:* Daily telework will be positive associated with workers' daily ratings of well-being indicators.

Consistent with the JDR model, prior research suggests the utilization of telework should increase employee perceptions of flexibility and job control (Gajendran & Harrison, 2007; Hill et al. 1998). When evaluating the role of job characteristics within the telework-employee health relationship, job autonomy (i.e., job control) is among the most important job characteristics as it has a strong association when mediating the relationship between telework and employee health outcomes. For example, past research has shown that job autonomy fully mediates the relationship between telework and job satisfaction, as well as partially mediates the impact of telework on employee stress outcomes (Gajendran & Harrison, 2007). Within a job-demands

resources framework, job autonomy also mediates the impact on both exhaustion and job engagement (Sardeshmukh et al., 2012). The importance of job autonomy within the telework and employee health relationship is assumed to be due to the alleviating effect on job demands through increased control compared to office-based routines. Employees are assumed to have more control over how they navigate their task structure, when they take their breaks, and less managerial oversight. These components, in turn, alleviate strain and reduce exhaustion for teleworking employees.

Less is known about the role of perceived flexibility as a mediating component of the impact of telework on employee health and wellbeing. However, we do see the transition to telework leads to increased employee perceptions of flexibility (Hill et al., 1998). Within Hill and colleagues qualitative inquiry, employees transitioning to full-time telework from traditional office work reported increased flexibility which allowed them to attend to their personal and non-work needs.

By this point I have discussed the extent to which flexibility and job control are job resources by which workers with chronic health conditions can increase their work ability (Beatty, 2012; Issa et al., 2012). Providing workers with CHCs with flexibility and control allows them to effectively manage their condition(s) within the workplace. Considering the association between telework, flexibility, and perceived job control, workers with CHCs may experience a reduction in their perceived work and personal demands when teleworking. Through a JDR perspective, mitigating the impact of these demands through the utilization of telework should increase an individual's functional ability to complete their work (i.e., work ability), as well as their subjective psychological well-being

Considering these assumptions, I will investigate the mediating effects of flexibility and job control in the relationship between telework, work ability, and wellbeing (**R2**). Consistent with the JDR model, I predict that as individuals attempt to manage their health conditions within the workplace, utilizing the option to telework will provide individuals with the job control and flexibility needed to better support the completion of their work tasks, and thereby positively influence their respective work ability and well-being. Thus, I hypothesize:

Hypothesis 3a*:* Perceived flexibility will positively mediate the relationship between telework and work ability.

Hypothesis 3b*:* Perceived job control will positively mediate the relationship between telework and work ability.

Hypothesis 4a*:* Perceived flexibility will positively mediate the relationship between telework and well-being.

Hypothesis 4b*:* Perceived job control will positively mediate the relationship between telework and well-being.

Finally, I will address the potential moderating effects of work activities on the indirect relationship between telework, work ability, and well-being via job control and flexibility. (**R3)**. Prior researchers speculated there may be task-related barriers to the effective utilization of telework (Linden & Milchus, 2014). Therefore, it is possible different types of work activities have varying effects on one's perceived flexibility and job control within the teleworking context.

The Occupational Information Network (O*NET) is an online database containing a broad range of occupation-specific definitions and characteristics, including descriptions of the type of work activities typical to each occupation (2021). O*NET groups work activities into 4

categories: *interacting with others*, *information input, information output,* and *mental processing*. These overarching categories can be further broken down into specific elements and tasks related to the nature of the work performed. In this study, I conceptualized eight different work activities, or groups of tasks, which might be conducive to a telework setting. These activities include *interacting with others*, *educating others*, *administrative tasks*, *information input*, *information output*, *mental processes*, *physical activities,* and *creative activities*.

There is little to no empirical work related to how work activities of these types interact with one's perceptions of job control, flexibility, work ability, or well-being. However, it is possible that engaging in highly interdependent tasks while teleworking, as seen in Golden (2006), or those which require frequent interactions with others, may reduce one's ability to design their work tasks, work schedule, or work environment in a way that facilitates their ability to manage their condition at work.

Therefore, I propose:

Hypothesis 5a*:* Interaction tasks will negatively moderate the indirect effects of telework on work ability through its relationship with flexibility, such that as individuals engage in higher levels of interaction tasks, they will report lower levels of flexibility.

Hypothesis 5b*:* Interaction tasks will negatively moderate the indirect effects of telework and work ability through its relationship with job control, such that as individuals engage in higher levels of interaction tasks, they will report lower levels of job control.

Hypothesis 6a*:* Interaction tasks will negatively moderate the indirect effects of telework and well-being through its relationship with flexibility, such that as individuals engage in higher levels of interaction tasks, they will report lower levels of flexibility.

Hypothesis 6b*:* Interaction tasks will negatively moderate the indirect effects of

telework and well-being through its relationship with job control, such that as individuals engage in higher levels of interaction tasks, they will report lower levels of job control.

With regard to educating others, O*NET (2021) describes the work activities of teachers at multiple levels to include interactive activities such as *establishing and maintaining personal relationships*, *developing and building teams*, and *guiding, directing, or motivating subordinates*. Given these factors, it may be likely the highly interactive nature of educating others will assume similar constraints regarding a worker's ability to flexibly manage or control their work schedules, environment, or work design and lead to lessened perceptions of work ability and well-being. Therefore, I propose:

Hypothesis 7a*:* Educating others will negatively moderate the indirect effects of telework and work ability through its relationship with flexibility. such that as individuals report higher levels of educating others, they will report lower levels of flexibility.

Hypothesis 7b*:* Educating others will negatively moderate the indirect effects of telework and work ability through its relationship with job control, such that as individuals report higher levels of educating others, they will report lower levels of job control.

Hypothesis 8a*:* Educating others will negatively moderate the indirect effects of telework and well-being through its relationship with flexibility, such that as individuals report higher levels of educating others, they will report lower levels of flexibility.

Hypothesis 8b*:* Educating others will negatively moderate the indirect effects of telework and well-being through its relationship with job control, such that as individuals report higher levels of educating others, they will report lower levels of job control.

Conversely, I assume the remaining work activities to be unbound by one's work location (i.e., information input, information output, physical, creative, administrative, and mental

processing activities). I propose as individuals report engaging in higher rates of these activities, they will still be able to draw upon the beneficial impact of telework. For instance, as the utilization of telework supposes an individual most often completes their work tasks through computer technology, work activities such as information input and information output should be unaffected given these tasks may also be executed through computer technology at one's central work location. Thus, I propose:

Hypothesis 9a: Information input will positively moderate the indirect effects of telework on work ability through its relationship with flexibility. such that as individuals report higher levels of input activities, they will report higher levels of flexibility.

Hypothesis 9b: Information input will positively moderate the indirect effects of telework on work ability through its relationship with job control, such that as individuals report higher levels of input activities, they will report higher levels of job control.

Hypothesis 10a: Information input will positively moderate the indirect effects of telework on well-being through its relationship with flexibility. such that as individuals report higher levels of input activities, they will report higher levels of flexibility.

Hypothesis 10b: Information input will positively moderate the indirect effects of telework on well-being through its relationship with job control, such that as individuals report higher levels of input activities, they will report higher levels of job control.

Hypothesis 11a: Information output will positively moderate the indirect effects of telework on work ability through its relationship with flexibility. such that as individuals report higher levels of output activities, they will report higher levels of flexibility.

Hypothesis 11b: Information output will positively moderate the indirect effects of

telework on work ability through its relationship with job control, such that as individuals report higher levels of output activities, they will report higher levels of job control.

Hypothesis 12a: Information output will positively moderate the indirect effects of telework on well-being through its relationship with flexibility. such that as individuals report higher levels of output activities, they will report higher levels of flexibility.

Hypothesis 12b: Information output will positively moderate the indirect effects of telework on well-being through its relationship with job control, such that as individuals report higher levels of output activities, they will report higher levels of job control.

Similarly, mental processes such as analyzing data or information to inform problem solving, as well as administrative tasks such as processing paperwork, should be unaffected by one's work location given the likelihood these tasks can be completed using technological means or without materials constricted within the organizational setting. Therefore, I hypothesize:

Hypothesis 13a: Mental processing will positively moderate the indirect effects of telework on work ability through its relationship with flexibility. such that as individuals report higher levels of mental processing activities, they will report higher levels of flexibility.

Hypothesis 13b: Mental processing will positively moderate the indirect effects of telework on work ability through its relationship with job control, such that as individuals report higher levels of mental processing activities, they will report higher levels of job control.

Hypothesis 14a: Mental processing will positively moderate the indirect effects of telework on well-being through its relationship with flexibility. such that as individuals report higher levels of mental processing activities, they will report higher levels of flexibility.

Hypothesis 14b: Mental processing will positively moderate the indirect effects of

telework on well-being through its relationship with job control, such that as individuals report higher levels of mental processing activities, they will report higher levels of job control.

Hypothesis 15a: Administrative tasks will positively moderate the indirect effects of telework on work ability through its relationship with flexibility. such that as individuals report higher levels of activities, they will report higher levels of flexibility.

Hypothesis 15b: Administrative tasks will positively moderate the indirect effects of telework on work ability through its relationship with job control, such that as individuals report higher levels of activities, they will report higher levels of job control.

Hypothesis 16a: Administrative tasks will positively moderate the indirect effects of telework on well-being through its relationship with flexibility. such that as individuals report higher levels of activities, they will report higher levels of flexibility.

Hypothesis 16b: Administrative tasks will positively moderate the indirect effects of telework on well-being through its relationship with job control, such that as individuals report higher levels of activities, they will report higher levels of job control.

Finally, there is no literature to direct assumptions related to how engaging in physical or creative tasks within the telework setting may impact a workers' perceptions of flexibility or job control. These types of tasks may have been overlooked in the telework literature given they may be more likely to include the use of manual materials or are of site-specific nature. However, organizations are only obliged to provide the option to telework as an accommodation option if the nature of the job is conducive to the telework setting (ADA, 1990). Given the current sample is composed of telework individuals, I propose those engaging in creative or physical activities within a remote setting might again be able to draw on the supposed flexible and autonomous

nature of telework and effectively maintain positive perceptions of their work ability and well-being. Specifically, I hypothesize:

Hypothesis 16a: Physical activities will positively moderate the indirect effects of telework on work ability through its relationship with flexibility. such that as individuals report higher levels of physical activities, they will report higher levels of flexibility.

Hypothesis 16b: Physical activities will positively moderate the indirect effects of telework on work ability through its relationship with job control, such that as individuals report higher levels of physical activities, they will report higher levels of job control.

Hypothesis 17a: Physical activities will positively moderate the indirect effects of telework on well-being through its relationship with flexibility. such that as individuals report higher levels of physical activities, they will report higher levels of flexibility.

Hypothesis 17b: Physical activities will positively moderate the indirect effects of telework on well-being through its relationship with job control, such that as individuals report higher levels of physical activities, they will report higher levels of job control.

Hypothesis 18a: Creative activities will positively moderate the indirect effects of telework on work ability through its relationship with flexibility. such that as individuals report higher levels of creative activities, they will report higher levels of flexibility.

Hypothesis 18b: Creative activities will positively moderate the indirect effects of telework on work ability through its relationship with job control, such that as individuals report higher levels of creative activities, they will report higher levels of job control.

Hypothesis 19a: Creative activities will positively moderate the indirect effects of telework on well-being through its relationship with flexibility. such that as individuals report higher levels of creative activities, they will report higher levels of flexibility.

Hypothesis 19b: Creative activities will positively moderate the indirect effects of telework on well-being through its relationship with job control, such that as individuals report higher levels of creative activities, they will report higher levels of job control.

Between-Person Effects

At the between-person level, I investigate the potential moderating effect of the extent of telework, or the amount of time spent teleworking as a proportion of an employee's total working hours, in the relationship between daily telework, flexibility, and job control (**R4**). Prior literature has shown a curvilinear relationship between the extent of telework and job satisfaction (Golden & Veiga, 2005), with job satisfaction increasing with the number of hours teleworked until plateauing at extensive levels of telework. I aim to identify whether this curvilinear relationship exists when evaluating perceived job control and flexibility and assume there will be a similar curvilinear relationship between the extent of telework, job control, and flexibility.

To date, no studies have evaluated the moderating effect of the extent of telework between the utilization of telework, job control, and flexibility. However, two studies have evaluated the direct impact of the extent of telework and well-being. Sardeshmukh et al. (2012) found a negative association between the extent of telework and role ambiguity, time pressure, and exhaustion suggesting positive outcomes for employee well-being commensurate with the number of hours teleworked. Vander Elst et al. (2017) also evaluated the potential curvilinear relationship between the extent of telework and well-being indicators (i.e., exhaustion, job engagement, and cognitive stress complaints). The authors did not find a direct curvilinear, nor linear, relationship between the extent of telework and the measured well-being indicators.

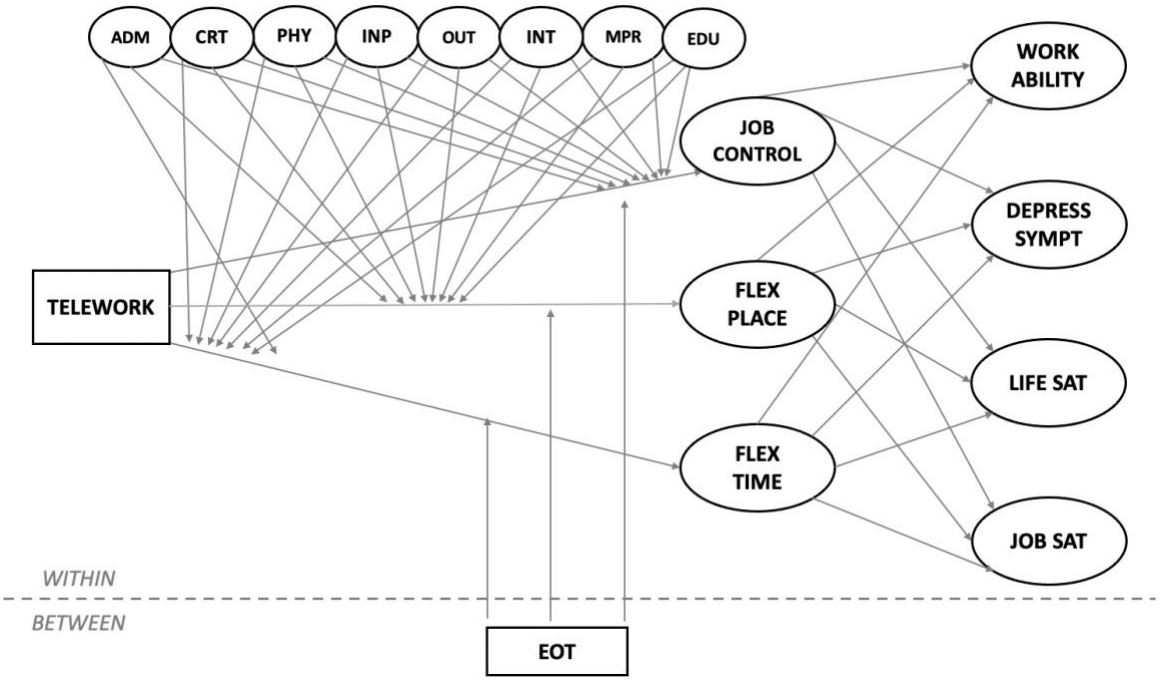
Despite contradictory results, other research has found empirical support for the extent of telework as a moderator between the utilization of telework and well-being outcomes.

Specifically, the extent of telework moderates the relationship between telework and role stress (Gajendran & Harrison, 2007), as well as role overload (Duxbury & Halinski, 2012). In each of these studies, authors only investigated the linear effects of the extent of telework. However, considering prior research investigating the curvilinear trend of the extent of telework on job satisfaction, it is possible that ratings of job control and flexibility might plateau when workers increase the intensity of their teleworking hours. Within the proposed study, it is possible that as participants utilize telework more frequently to reduce the demands of their work and/or managing a chronic health condition, the adverse consequences of telework, such as social isolation (Mann et al., 2000; Mann & Holdsworth, 2003) or reduced social support (Sardeshmukh et al. 2012), may deteriorate or plateau their perceived well-being and work ability. Therefore, I propose:

***Hypothesis 20*:** Extent of telework will moderate the indirect effect of telework on work ability through its relationship with flexibility, such that there will be a curvilinear relationship between the extent of telework and work ability.

***Hypothesis 21*:** Extent of telework will moderate the indirect effect of telework on well-being through its relationship with job control, such that there will be a curvilinear relationship between the extent of telework and well-being.

The proposed within and between-persons relationships are depicted in Figure 1.



Note. ADM = Administrative, CRT = Creative, PHY = Physical, INP = Information Input, OUT= Information Output, INT = Interacting with Others, MPR = Mental Processing, EDU = Educating Others, EOT = Extent of Telework

Figure 1

Hypothesized Model at the Within and Between-Persons Level

METHOD

Research Design

The current study utilizes an experience sampling method (ESM) design. ESM is a longitudinal research design that involves collecting repeated measures from the same participants at one or more times per day, for multiple days (Eatough et al., 2016). ESM studies aim to achieve a demonstrative sample of a person's immediate experiences in their actual environment and momentary psychological processes within that person's natural environment, versus a laboratory setting or requiring recall over longer periods of time. In this study, I employ an ESM design to obtain multiple data points of participants' daily work activities, teleworking behaviors, perceived job control, perceived flexibility, and perceived work ability and well-being.

Participants

The original sample included 106 individuals who met the following criteria for inclusion: 1) at least 18 years of age, 2) employed at least 20 hours a week, 3) telework at one time per week, and 4) have a CHC that requires ongoing management. The decision to include employees working at least 20 hours per week while also teleworking at least once a week was made to allow for enough variance between each assessment. At the beginning of the study, eligibility requirements stated participants must work at least 32 hours a week to be considered for the study; however, many respondents indicated working part-time due to the influence of their chronic health conditions. To establish equity, I adjusted the eligibility requirements to allow for part-time workers (e.g., 20 hours a week).

The decision to recruit 106 participants is in accordance with prior research by Gabriel et al. (2019) who analyzed average Level 1 (within) and Level 2 (between) sample sizes across 107 studies conducted through 2017. After Gabriel and colleagues removed samples deemed as outliers due to z-scores of +/- 2, the mean sample sizes were 835 (*SD* = 475) for Level 1 and 83 (*SD* = 32) for Level 2, respectively. Based on these figures the authors recommend researchers utilizing an ESM design aim to recruit a minimum of 83 participants for a Level 2 sample size, and enough assessments to reach a Level 1 sample size of 835. Ployhart and Vandenberg (2012) suggest researchers be prepared for up to 50% participant attrition when using longitudinal designs due to respondent burden of participating in multiple assessments. Considering the sample size recommendations by Gabriel et al. (2019), recruiting 106 participants afforded for up to a 22% attrition rate, or 23 participants fully removing themselves from the study. Participant demographic characteristics and work industry are reported in Tables 1 and 2.

Table 1

Participant demographics

	M	**SD**
Age	*32.94*	*7.96*
Gender [105]	**N**	**%**
Female	96	91.4
Male	8	7.6
Non-Binary	1	1.0
Racial Identity [100]	**N**	**%**
Black/African America	1	1.0
Indigenous - Native American	3	2.8
Asian American	3	2.8
Ethnic Identity [100]	**N**	**%**
Hispanx/Latinx/Chicanx	6	6.0
Non-Hispanx/Latinx/Chicanx	94	94.0
	M	**SD**
Number of Dependents in the Home	0.6	1.0

	N	%
Yes	29	27.4
No	77	72.6

Note. Means, Ns, and percentages include sample characteristics prior to attrition. Some participants did not answer all demographic questions, so proportions are calculated for N = 106 unless indicated within brackets [N].

Table 2

Participant reported work industry (N = 96)

Work Industry	**N**	**%**
Education	16	16.7
Healthcare	16	16.7
Science	6	6.3
Business/Client Services	6	6.3
Finance	5	5.2
Aerospace	4	4.2
Computer Systems	4	4.2
Telecommunications	3	3.1
Management	2	2.1
Pharmaceutical	1	1.0
Hospitality	1	1.0
Entertainment	1	1.0
Energy	1	1.0
Manufacturing	1	1.0
Other	29	30.2

Note. Typical industries categorized within "Other" are related to social services, academic environments, federal government, real estate, and engineering.

When defining chronic health conditions for the inclusion criteria, I adopted previously established criteria defined through the United States federal government guidelines related to "Schedule A" hiring (Department of Labor, 2021). In reference to federal hiring authority, "Schedule A" is a formal indication that an employee has a severe developmental, physical or physiological, or psychiatric disability. The government provides examples of conditions which meet these criteria, however, also recognizes conditions not represented on the criteria checklist

employees must complete when designating "Schedule A" classification and will accept formal physician diagnoses and recommendations for qualification as an applicant with a disability. Thus, any individual meeting these criteria which include a wide and flexible range of developmental, physical, and mental health conditions, disorders, and diseases, was invited to participate in the study. (See Table 3 for a list of health conditions reported by participants.)

Table 3

Participant reported health conditions and average number of conditions

Health Conditions[a]	**N**	**%**
Autoimmune Disease	69	65.1
Significant Psychiatric Disorder	47	44.3
Gastrointestinal Disorder	38	35.8
Nervous System Disorder	38	35.8
Non-Paralytic Orthopedic Impairment	27	25.5
Endocrine Disorder	27	25.5
Development/Intellectual/Learning Disorder	25	23.6
Pulmonary or Respiratory Conditions	13	12.3
Significant Mobility Impairment	11	10.4
Obesity	10	9.4
Spinal Abnormalities	7	6.6
Cardiovascular or Heart Disease	7	6.6
Sight or Hearing Impairment	6	5.7
Epilepsy or Seizure Disorder	5	4.7
Blood Disease	4	3.8
Diabetes	1	0.9
Traumatic Brain Injury	1	0.9
	M	**%**
Number of Conditions per Participant	3.4	2.1

Note. Means, Ns, and percentages include sample characteristics prior to attrition. Proportions are calculated for N = 106 unless indicated within brackets [N].

[a] Proportions will not total to 100 as participants often reported having multiple health conditions.

Procedure

Recruitment

I recruited participants through advertisements on various Reddit online forums related to disability, chronic pain, and chronic illness. Before posting advertisements, I obtained permission from each of the forums' moderators when necessary. In addition, Chronically Capable, a job placement company serving those with chronic health conditions and disability, disseminated my recruitment materials as part of their monthly customer and client newsletters. Finally, a popular Instagram account, @disabilityreframed, posted my recruitment materials to their account once a week until I reached enough participants.

There were 348 respondents who completed the initial screening survey, and 161 respondents (46.3%) met the eligibility requirements for participating in the primary study. These participants were sent an initial recruitment email, with up to two reminder emails, over the course of three weeks. Participants were given the option to 'opt out' of receiving subsequent emails. Among the 161 individuals invited to participate, 106 participants (65.8%) responded to the recruitment email and selected into the study.

Data Collection

Participants selected into the study were prompted by email twice a day to complete a survey as close to the prompt time as possible at a time that did not interfere with their work. Two daily measures were necessary to capture situations in which a worker began the workday within one setting (i.e., the office), but chose to work the rest of the day from a different location (i.e., home). In addition, as symptoms associated with chronic health conditions may be dynamic, with two daily time-points I was able to control for within-day fluctuations in the outcomes of interest within my analyses.

For each participant, the data collection process involved up to 10 consecutive working days of participation, spanning two working weeks. Twice a day, participants received an email with a link to complete their daily survey in Qualtrics. I scheduled emails to be sent one during the morning hours of the day, and once in the afternoon. Email prompts were individually scheduled to meet the work schedules of participants. Participants were compensated based on the total number of surveys they completed, at a rate of $5 per survey, with a bonus incentive of $20 provided for completing 18 of the 20 surveys (90%). A survey was determined to be "complete" if at least 50% of all survey items were answered and if participants accurately responded to at least one of two attention checks. During data collection, five participants who selected into the study did not respond to, or alternatively opted out of receiving, the email prompts, leaving a final sample of 101 participants.

Measures

Prior to the experience sampling study, participants completed a screening questionnaire containing both quantitative and qualitative, open-ended questions about their current perceptions of job control and flexibility, characteristics of their job, chronic health conditions, and their typical teleworking habits (e.g., average teleworking hours per week). Measures included in the primary study and analyses, however, are described below. Specific items are reported in Appendix A in the same order in which they were presented within each survey. For clarity, timing of measures used in the analyses are in Table 2.

Telework. Telework was measured with a single item asking participants to identify from which location they were currently working. Responses options included: *organizational setting (e.g., office)*, *home*, *co-working space*, *tele-remote center*, *other (please specify)*. All options besides *organizational setting* or *other*, when the response clarification was determined

to be unrelated to telework, were coded as 1 (i.e., telework).

Extent of Telework. During the afternoon assessment only, participants provided a numerical response to an item asking the number of hours they would work, or had already worked, by the end of their working day. Participants also reported the number of those hours spent teleworking. These values were used to calculate an objective measure of the extent of telework. Extent of telework was computed between participants through division of hours spent teleworking by total working hours.

Job Control. Participants responded to items adapted from the 22-item Work Control Scale, $\alpha = .87$ (Dwyer & Ganster, 1991; Ganster, 1989). The Work Control scale was developed to measure general work control across a variety of occupations (Smith et al., 1997). Smith et al. found the Work Control Scale to have strong psychometric properties and factor loadings for the general dimension of work control in comparison to another commonly used scale, the job decision latitude scale developed by Karasek (1985). Sample items from the Work Control Scale include "How much can you choose among a variety of tasks or projects to do?" and "How much control do you have over the scheduling and duration of your rest breaks?" Response scale options range from (1) *Very little* to (5) *Very much*.

Flexibility in Time and Location. Flexibility in time and location of work were assessed using two items from Shockley and Allen (2007). The items are stated as "I currently have the freedom to vary my work schedule" and "I currently have the freedom to work wherever is best for me – either at home or at my organization." Possible responses vary from (1) *Strongly Disagree* to (5) *Strongly Agree*.

Work Ability. Work ability was measured using three items adapted by McGonagle et al. (2015), $\alpha = .75$. The included items were stated, "Considering the [physical, mental,

interpersonal] demands of your job, how do you rate your current ability to meet those demands?" Possible responses range from (0) *Cannot currently work at all* to (10) *Work ability at its lifetime best*.

Well-Being. Well-being was conceptualized through general life and job satisfaction, as well as the absence of depressive symptoms as is common when measuring subjective well-being (Kuykendall & Tay, 2015). Included measures are described below.

Job Satisfaction. General job satisfaction was measured using an adapted single item measure from Fisher et al. (2016). This items states, "Right now I am satisfied with my job." Possible responses vary from (1) *Strongly Disagree* to (5) *Strongly Agree*.

Life Satisfaction. General life satisfaction was measured using an adapted sing-item measure from Fisher et al. (2016). This items states, "Right now, I am satisfied with my life." Possible responses vary from (1) *Strongly Disagree* to (5) *Strongly Agree*.

Depressive Symptoms. Depressive symptoms were assessed using eight items adapted from the Center for Epidemiologic Studies National Institute of Mental Health's Depression Scale (CES-D) by Radloff (1977). Items are adapted to meet the daily nature of the study. Participants will be asked to think about the feelings they are currently experiencing, and possible responses range from (1) *Strongly Disagree* to (5) *Strongly Agree*. Sample items include "I feel depressed," "I feel lonely," and "I feel like everything I do is an effort."

Work Activities. The extent to which participants performed eight different work activities were measured through items adapted from typical work activity descriptions derived from O*NET. Items used to measure each activity are listed in the below sections. For each item, participants were asked "Thinking about the tasks and activities you will complete this

AFTERNOON / EVENING, to what extent will you…" Responses vary from (1) *Not at all* to (5) *Very Great Extent*.

***Interacting with Others*.** Interacting with others was measured through three items with the following predicates: 1) "Communicate with supervisors, peers, subordinates or others in written form (e.g., email)," 2) "Communicate with supervisors, peers, subordinates or others via telephone," 3) "Communicate with supervisors, peers, or subordinates by video communication (e.g., Zoom, Microsoft Teams, Facetime)".

***Educating Others*.** Educating others was measured using one item with the predicate, "Train or teach others (e.g., developing formal education or training programs, teaching or instructing others)."

***Information Input*.** Information input was measured using two items with the predicates: 1) "*Observe, receive, or obtain information from relevant sources (e.g., through reading written materials)*," and 2) "*Monitor processes or material (e.g., review information from materials to detect or assess problems)*."

***Information Output*.** Information output was measured using one item ending, "*Enter, transcribe, record, store, or maintain information in written or electronic form (e.g., word processing)*."

Administrative. Administrative tasks were measured using a single item ending: "*Perform administrative activities (e.g., maintaining information files, processing paperwork)*."

***Mental Processing*.** Mental processing activities were measured using three items with the predicates: 1) "Analyze data or information (e.g., data analysis)," 2) "Analyze information and evaluate results to choose the best solution and/or solve problems?" 3) "Process information

by compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data (e.g., reviewing forms, working within spreadsheets)."

Physical Activities. Physical activities were measured using a single item ending: "Perform general physical activities that require the use of your arms, legs, and/or whole body."

Creative Tasks. Creative tasks were measured using a single item ending: "Think creatively by developing, designing, or creating new applications, ideas, relationships, systems or products, including artistic contributions (e.g., content development)."

Table 4

Timing of measures used in analyses

Baseline (Pre-ESM)	**Daily time 1**	**Daily time 2**
Demographics	Work location	Work activities
Inclusion Criteria	Work activities	Job Control
		Flexibility
		Work Ability
		Well-being Indicators

RESULTS

In the following sections, I will describe my approach to data analyses. I begin with a review of all steps taken to clean and appropriately prepare my data for hypotheses testing, followed by a description of how I conduct dynamic structural equation modeling methods to test hypothesized direct effects and mediated-moderation for indirect effects testing. Finally, I present results for within (Level 1) and between (Level) persons.

Analytical Approach

Cleaning & Assumption Checking

Before hypothesis testing, I began checking for item, scale, and person-level missingness (Newman, 2014). Primarily, missing data occurred at the day-level (i.e., person) such that a participant missed either the morning and/or afternoon assessment for a specific day. Missing data at the day-level was marginal and did not largely affect hypotheses testing at later stages. Scale means were created at the day-level and were not computed when a single item among a scale was missing. Further, hypotheses testing was only conducted using a given day's data when participants provided responses for both the morning and afternoon assessment. Next, I inspected outlying scale means of (+-) 1 standard deviation. I only discovered low outlying values for one participant's reports of work ability; however, mean work ability for this participant were consistent across days, so I retained these values within the data.

Factor Analyses & Within Person Variance

Next, I conducted a series of multilevel confirmatory factor analyses (MCFA) to assess the factor structure of each latent variable. MCFA is necessary to specify latent variables at both the within- and between-level of persons or groups (Gabriel et al., 2019). In utilizing MCFA, I

was able to evaluate the covariance matrices and factor struct of all latent variables in my study at both the within- and between-persons level. This process helps to ensure response patterns for each variable were indicative of changes in the perceived attribute or construct, and not due to inconsistencies between items comprising each measure. All scales exhibited sufficient reliability (>.70). Fit and reliability estimates are in Table 3.

To facilitate interpretation, chi-square (χ^2) values are goodness of fit statistics meant to signify the degree of inconsistency between the sample and the overall covariance matrices (Hu & Bentler, 1999). Traditionally, statistical significance of χ^2, in which $p < .05$ represents a lack of model fit, is subject to the overall sample size. Most large samples will demonstrate a significant x^2 statistic. For instance, McDonald & Ho (2002) report that among studies utilizing forms of structural equation modeling within a 3-year time-period, only 12% reported a non-significant x^2. Considering the vulnerability of χ^2 analyses to sample size influence such that often chi-square tests are statistically significant due to a large sample size, but the model may not fit the data well, I evaluated supplemental, relative fit indices including Tucker-Lewis Indices (TLI), Comparative Fit Indices (CFI), and the root mean square error of approximation (RMSEA; Hu & Bentler, 1999). In each case, the reported indices represent a comparison of the proposed model (e.g., latent variable structure) to that of baseline model unaffected by sample size, while also correcting for various biases such as model complexity. When interpreting TLI and CFI estimates, values greater than .90 are considered acceptable, whereas acceptable RMSEA values are typically less than .10 or .08 depending on author scrutiny. All evaluated measures demonstrated acceptable, or approaching acceptable, fit.

Fit and reliability are not presented for measures of flexibility. Due to low correlations between the two flexibility items (See Table 7), the items were used to measure *flextime* and

flexplace perceptions independently. Reliabilities are not presented for work activity variables or flexibility items (i.e., single item measures). These items were used to assess an approximation of time spent performing tasks related to the variable and not to measure the latent structure of the variable.

Table 5

Means, standard deviations, ICC(1) values, and reliability coefficients

	χ^2	CFI	TLI	RMSEA	α
Job Control	284.3*	.88	.84	.06	.91
Work Ability	0.0*	1.00	1.00	.00	.87
Depression	72.3*	.97	.95	.03	.89

$* p < .05$

Descriptive statistics, including uncentered means, standard deviations, and intraclass correlation coefficients [ICC(1)], for each study variable are reported in Table 6. Within- and between-person correlations for all variables are subsequently reported in Table 7. Because each participant was measured on multiple occasions, measurement occasions were nested within participants. I first calculated ICC(1) values for each repeated-measures variable per recommendation by Heck & Thomas (2015). Evaluation of ICC(1) values allowed me to identify whether multi-level analyses were appropriate, such that differences in measured variables were insufficiently explained between participants and a significant proportion of variation was attributable to fluctuations within individuals at the daily level. All variables in the model had a substantial amount of variance accounted for within individuals (See Table 4), deeming multilevel analyses to be appropriate. Finally, although there is not a formal recommendation in the field to group-mean center effects in multi-level modeling, Zhang and colleagues (2009) demonstrated the potential for confounding mediation effect estimates when within-group effects are substantially different from between-group effects. Thus, per recommendations by Zhang et

al., I group-mean centered latent variables included at the within-level (Level 1) of the model to reduce the likelihood of conflating the total effects of telework on the mediators and outcomes with effects at the within-person level.

Table 6

Means, standard deviations, and ICC(1) values

	M	**SD**	**ICC(1)**
Telework	.91	.28	.53
Job Control	3.18	.85	.75
Flextime	3.38	1.25	.76
Flexplace	3.86	1.15	.62
Work Ability	6.46	1.78	.74
Depression	2.88	.79	.77
Life Satisfaction	3.51	.94	.76
Job Satisfaction	3.54	1.01	.63
Educating Others	1.7	1.08	.74
Interacting with Others	2.37	.82	.65
Information Input	2.83	1.00	.53
Information Output	2.83	1.17	.62
Mental Processing	2.58	1.00	.69
Administrative	2.56	1.10	.65
Physical Activities	1.46	.69	.72
Creative Activities	2.51	1.22	.73
Extent of Telework	.94	.18	.59

Table 7

Correlations among all study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. TEL	1	.02	-.03	.17*	.12*	.03	-.01	-.13*	.04	-.06	.05	.05	.06	.08*	-.21*	-.07*	.80*
2. JC	.13*	1	.65*	.48*	.27*	-.19*	.17*	.20*	-.06	-.00	-.01	-.01	.07	-.07*	-.05	.22*	.07
3. FT	-.10*	.37*	1	.52*	.05	-.11*	.10*	.16*	-.12*	-.11*	-.08*	-.09*	.01	-.14*	-.04	.08*	.05
4. FP	.09*	.17*	.26*	1	.18*	-.08*	.07*	.08*	-.02	.09*	-.01	-.02	-.01	-.04	-.12	.08*	.23*
5. WA	-.01	.09*	-.02	.02	1	-.54*	.45*	.36*	-.00	-.03	.07*	.02	.04	-.02	-.15*	.10	.10*
5. DEP	-.02	-.10*	-.01	-.01	-.42*	1	-.74*	-.53*	.01	.01	-.03	.07*	-.06	.09*	.08*	-.06	.01
7. LST	.01	.06	-.01	.04	.26*	-.44*	1	.67*	.04	-.02	.14*	.05	.12*	.01	-.04	.09	-.01
8. JST	.05	.14*	.08*	.07	.25*	-.31*	.39*	1	-.03	-.12*	.10*	.05	.04	-.03	-.02	.08*	-.09*
9. INT	.10*	.14*	-.14*	.00	.10*	-.00	.02	.01	1	.40*	.34*	.18*	.29*	.25*	.21*	.32*	-.06
10. EDU	.02	-.07	-.11	-.02	-.02	.01	.07*	.04	.30*	1	.21*	.17*	.08*	.19*	.25*	.36*	-.07
11. INP	.18*	-.02	-.10	-.11*	.10*	.01	.07*	.07	.25*	.14*	1	.54*	.70*	.44*	.23*	.30*	.02
12. OUT	.16*	-.05	-.05	-.08*	.05	.05	-.01	.02	.20*	.11*	.40*	1	.45*	.60*	.19*	.23*	-.02
13. MPR	.13*	.02	-.03	-.09*	.10	-.01	.08	.04	.22*	.08*	.61*	.39*	1	.42*	.10*	.22*	.02
14. ADM	.13*	-.02	-.05	-.07	.03	.04	.02	-.05	.27*	.07*	.36*	.45*	.39*	1	.17*	.10*	.03*
15. PHY	-.17*	-.03	-.04	-.04	.07	-.05	.09	-.02	.10*	.14*	.10*	.13*	.10*	.15*	1	.25*	-.25
16. CRT	.06	.03	-.03	-.10	.05	-.02	.02	.01	.19*	.14*	.20*	.13*	.22*	.14*	.12*	1	.03
17. EOT	.70*	.26*	.00	.17*	-.00	.02	.02	.03	.01	-.02	.03	.01	-.04	.03	-.18*	-.01	1

Note. Repeated-measures correlations L(1) are reported below the diagonal and between-person correlations are above the diagonal (L2)
TEL = Telework, JC = Job Control, FT = Flextime, FP = Flexplace, WA = Work Ability, DEP = Depression, LST = Life Satisfaction, JST= Job Satisfaction, INT = Interacting with Others, EDU = Educating Others, INP = Information Input, OUT = Information Output, MPR = Mental Processing, ADM = Administrative, PHY = Physical, CRT = Creative

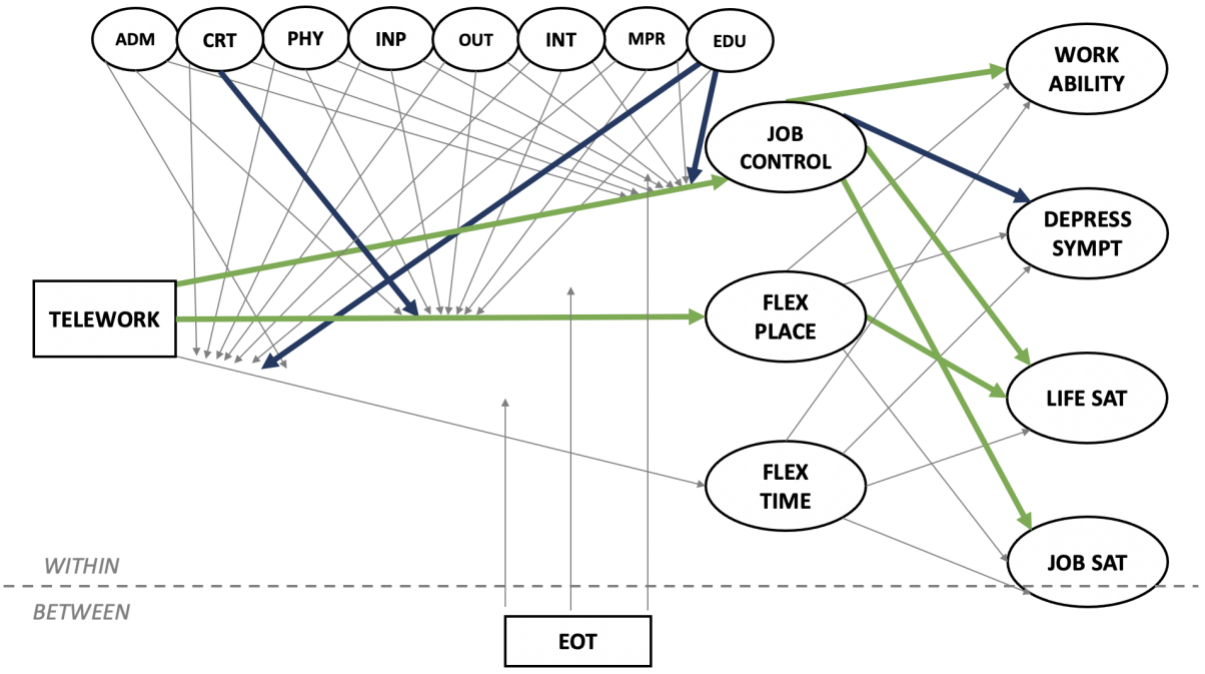
Hypothesis Testing

I tested hypotheses using a multilevel path analytic model using the Dynamic Structural Equation Modelling (DSEM) approach within Mplus version 8.3 (Muthén & Muthén, 2017). This approach allows for a multilevel investigation of proposed effects across time. Typically, multilevel models are used to investigate both micro and macro perspectives at higher and lower levels of analyses, such as at the within - and between - level of individuals (Koslowski & Kline, 2000). Using a DSEM approach, I was able to investigate associations at the within and between-person level across up to 10 timepoints (i.e., participants were enrolled for up to 10 workdays).

In the model estimated for hypothesis testing, morning telework was specified as predicting afternoon perceived job control and flexibility. Perceived job control and flexibility in turn, predicted afternoon perceptions of work ability and well-being. Direct paths of telework predicting work ability and well-being were included as well. These regression estimates were used to assess the proposed mediation effects. An average of the extent to which participants spent performing each work activity was created participants' morning and afternoon assessments. These values were used to predict the random slopes corresponding to the relationship between telework and both flexibility, flexibility, and job control, as well as the indirect effect between telework, work ability, and well-being at both low and high values of a given work activity (e.g., -2, 0, 2; after group mean centering). Cross-level moderation effects were evaluated as the extent of telework predicting the random slopes corresponding to the relationships between daily telework and both flexibility and job control.

I entered morning reports of all outcome variables as controls per the recommendations by Gabriel (2019) in order to identify linear and/or cyclical occurrence of reporting within days. Specifically, morning reports of work ability and well-being were specified to predict afternoon work ability and well-being, respectively. Hypothesized indirect effects were only tested when there were significant path estimates ($p > .05$) upon model specification.

Statistically significant path estimates ($p < .05$) at the within and between-person levels are presented in Figure 2. Path estimates not approaching statistical significance are reported in tables within Appendix B and C. All reported path estimates, regardless of significance, are standardized within the text unless specifically stated otherwise.



Note. Bolded, green arrows represent significant, positive associations between variables, and bolded, dark blue arrows represent significant, negative associations between variables.

Figure 2

Hypothesized model with bolded statistically significant path estimates

Level 1 Results

Level 1 results refer to effects at the within-person level. Contrary to Hypotheses 1 and 2, the use of telework was not directly associated with reported work ability (γ = -.01, p = .40) or the presence of depressive symptoms (γ = .02, p = .29), life satisfaction (γ = -.03, p = .17), or job satisfaction (γ = .01, p = .38). Thus Hypotheses 1 and 2 were unsupported. However, telework was significantly, and positively associated with reports of job control (γ = .2, p = .00) and flexplace perceptions (γ = .12, p = .00). Telework was not associated with participant flextime perceptions (γ = -.01, p = .35).

Subsequently, job control was significantly, and positively associated with work ability (γ = .09, p = .00), life satisfaction (γ = .08, p = .01), and job satisfaction (γ = .14, p = .00), and

negatively associated with depressive symptoms (γ = -.10, p = .00). Flexplace perceptions were positively associated with life satisfaction (γ = .07, p = .02). Flextime perceptions were not associated with any of the measured outcomes (Table 6, Appendix B). Considering these results, indirect effects were only calculated to evaluate Hypothesis 3b, 4a, and 4b. Hypothesis 3a is unsupported.

Indirect Effects

Hypothesis 3b and 4b proposed job control would mediate the relationship between telework and work ability (3b) and well-being (4b), while Hypothesis 3a proposed flexibility would mediate the relationship between flexibility and well-being. The indirect effect of telework on work ability through job control was significant (indirect effect = .10; SD = .04; 95% confidence interval [CI] [.016, .109]). Further, the indirect effect of telework on depression through job control was significant (indirect effect = -.04; SD = .02; 95% CI [-.082, -.013]), as well as the indirect effect on life satisfaction (indirect effect = .04; SD = .02; 95% CI [.004, .089]) and job satisfaction (indirect effect = .07; SD = .03; 95% CI [.030, .128]). Further, in this case, there is sufficient evidence to support Hypothesis 3b and 4b.

Since telework was only associated with flexplace, and not flextime perceptions, I only tested the indirect effect of telework on well-being through flexplace perceptions. Further, flexplace perceptions were only significantly associated with participant ratings of life satisfaction. Subsequently, I only tested for the indirect effect of telework on life satisfaction via flexplace perceptions. Though small, the indirect effect of telework on life-satisfaction via flexplace perceptions was significant (indirect effect = .02; SD = .01; 95% CI [.000, .050]). These results marginally support Hypothesis 4a.

Of the eight specified work activities, only *educating others* and *creative activities* were associated with the relationship between telework and the two proposed mediators. The interaction between telework and educating others was negatively associated with reports of job control (γ = -.31, p = .00) and flextime perceptions (γ = -.30, p = .00). The interaction between telework and creative activities was negatively associated with participants flexplace perceptions (γ = -.08, p = .01). Next, I tested indirect effects for Hypothesis 7b, 8b, and 19a. Due to non-significant interactions between telework and all other work activities on both job control and flexibility, all other hypotheses are un-supported.

Hypotheses 7b and 8b propose educating others will negatively impact the indirect effect of telework on work ability (7b) and well-being (8b) through job control. To test moderated mediation per each hypothesis, I calculated the indirect effects of telework on work ability and well-being through job control at low and high values of educating others (-2, 2). Educating others was modeled as a first-stage moderator (Edwards & Lambert, 2007). Consistent with Hypothesis 7b, the indirect effect of telework on work ability via job control was weakest at high levels of educating others (indirect effect = .07; SD = .04; 95% CI [.013, .155]). The conditional indirect effects were also significant when levels of educating others were low (indirect effect = .12; SD = .05; 95% CI [.020, .228]). These results support Hypothesis 7b.

The indirect effect of telework on depression via job control was also weakest at high levels of educating others (indirect effect = -.03; SD = .02; 95% CI [-.067, -.009]), and remained statistically significant at low levels of educating others (indirect effect = -.053; SD = .02; 95% CI [-.097, -.016]). Contradictory to my hypothesis, the indirect effect of telework on life satisfaction via job control was strongest at high levels of educating others (indirect effect = -.05; SD = .02; 95% CI [-.095, -.019]) and in the opposite direction of my hypothesis. The indirect

effect was also significant at low levels of educating others in the opposite of the direction of my hypothesis, (indirect effect = -.03; SD = .02; 95% CI [-.072, -.005]). Similarly, the indirect effect of telework on job satisfaction via job control was strongest at high levels of educating others (indirect effect = -.06; SD = .02; 95% CI [-.102, -.024]), although in the opposite direction of my hypothesis. This effect was not significant at low levels of educating others. Therefore, Hypothesis 8b is only partially supported.

Finally, Hypothesis 19a proposed creative actives would positively influence the indirect effect of telework on well-being via flexibility. To partially address Hypothesis 19a, I calculated the indirect effects of telework on life satisfaction through flexplace perception at low and high values of creative activities (-2, 2). Contrary to my hypothesis, the indirect effect of telework on life-satisfaction was strongest, and statistically significant, at low levels of creative activities (indirect effect = .46; SD = .15; 95% CI [.181, .743]. The indirect effect was also statistically significant at high levels of creative activities (indirect effect = .38; SD = .15; 95% CI [.088, .678]). Considering these effects were in the opposite direction than my original hypothesis, Hypothesis 19a is unsupported.

Level 2 Results

Level 2 results refer to effects between individuals. The proportion of one's overall working hours spent teleworking (i.e., extent of telework) did not significantly predict the relationship between telework and the proposed moderators: job control (γ = -1.12, p = .17), flextime (γ = -1.02, p = .23), and flexplace (γ = -.64, p = .25). I discuss potential contributors to these and other confounding associations, or lack thereof, in the following sections.

DISCUSSION

Workers with chronic health conditions (CHCs) are a commonly overlooked group among teleworking literatures despite the potential for telework to serve as a functional accommodation practice for this vulnerable working population (Blount, 2019). In this study, I examined the potential of telework as work practice for supporting workers with CHCs through evaluating the relationship between utilizing telework, perceptions of job control and flexibility, and worker reports of work ability and well-being. Further, I evaluated the influence of the type of work activity performed while teleworking among these associations.

Past literature reflects beneficial relationships between telework and perceived flexibility, autonomy (Gajendran & Harrison, 2007) and well-being (Sardeskmukh et al., 2012). Given these relationships, authors have suggested teleworking as an accommodation to support workers with CHCs remain active, and satisfied participants in the competitive workforce (Linden, 2014; Linden & Milchus, 2014); although reporting concern related to task-specific barriers for effective teleworking.

In this study, I proposed telework would be positively related to workers' perceived work ability and well-being via more job control and flexibility experienced by workers when teleworking. Additionally, I assumed various work activities relate to these relationships, such that activities laden with interpersonal demands would not demonstrate as much of a benefit of telework compared with tasks that may be traditionally more conducive to the telework setting, such as those with high levels of information input via ICT (Allen et al., 2015).

Telework, Work Ability, and Well-being among Workers with CHCs

Altogether, I set out to answer the question if telework is beneficially associated with the work ability and well-being of workers with chronic health conditions. The current findings indicate "yes." Teleworking is beneficial for the work ability and well-being of workers with chronic health conditions primarily due to higher levels of job control that workers report experiencing while teleworking. Additionally, employees may also perceive greater flexibility in choosing to work wherever best suits them flexibility which lends to improved life-satisfaction when teleworking. As a whole, these findings are consistent with previous research which found that flexibility and control are important for the work ability and overall well-being of employees managing CHCs in the workplace (Beatty, 2012; Issa et al., 2012). This study provides additional evidence that telework may be a means of supporting employee experiences of job control and flexibility (Linden & Milchus, 2014). Findings also speak to the greater conceptual foundation in which telework may be used as an accommodation practice (e.g., job crafting) in which workers might increase their perceived resources of flexibility and job control and better meet the demands of managing a chronic health condition alongside their work roles. Practically, findings indicate telework is likely to serve as a beneficial accommodation for workers with CHCs resulting in improved work ability and well-being.

In addition, results in which there was an absence of relationship between telework, employee flex-time perceptions, and associated outcomes is aligned with prior speculation that telework may not be inherently flexible (Gajendran & Harrison, 2007), but may alternatively depend on the way in which one's job is designed or the nature of one's work. Accordingly, the findings from this study suggest that the activities workers perform as part of their jobs are related to their perceptions of work ability and well-being while teleworking. When workers

engaged in higher rates of educational activities (e.g., serving as an educator) while teleworking, workers reported lower levels of job control and subsequently experienced lower levels of work ability and well-being.

These results may be interpreted through various approaches. First, educational environments are composed of highly interpersonal tasks and activities and may be subject task interdependence (O*NET, 2021). Golden & Veiga (2006) previously highlighted the diminishing effects of highly interdependent work in the relationship between telework and job-satisfaction (Golden & Veiga, 2006). Within their same study, work defined by high levels of job latitude (i.e., job control) strengthened the relationship between telework and job satisfaction. Comparably, when participants in this study engaged in high frequencies of educational activities, the interpersonal and interdependent nature of this work may have negatively influenced worker's experienced job control, and weakened the beneficial, indirect influence of telework on work ability and well-being. In addition, at the time of this study, many educators were facing uncertain work guidance and mandatory constraints on where and how to best conduct their work. Some educators may have perceived mandated transitions to virtual learning as an attack on their personal experiences of job-control.

Further, when participants in the currently student engaged in high frequencies of creative activities (e.g., graphic design, artistic endeavors), they subsequently reported reduced perceptions of flex-place perceptions and life-satisfaction. I originally hypothesized creative activities would be favorable to the telework setting due to the likelihood for workers only to telework when the type of work they were to conduct was conducive to the virtual- or home-environment. However, there is the possibility that when worker's teleworked and engaged in creative work, they were confined to their workspace due to the materials or equipment needed

to conduct their work, such as sufficient computing software or textile materials. Within the context of the current study, many workers experienced a quick and unplanned transition to telework amid the COVID-19 pandemic. Given these transitions, workers may not have been fully prepared or given the necessary resources to conduct their work within the home.

Nonetheless, the influence of engaging in high levels of educational and creative activities on employee telework experiences speaks to the greater notion in which telework may not be conducive to all types of work. Within the current sample, participants primarily reported industries in which common work tasks may be conducted through ICT (e.g., Finance, Science, Business/Client Services). Prior work (Allen et al., 2015), has discussed the general utility of teleworking for various outcomes is often situated among occupations which involve high levels of information input and output as well as occupations relating to knowledge transfer. In light of these assumptions, and speculations around task-specific barriers to telework, the current findings speak to the need to consider the nature of one's work when providing telework as an accommodation practice or flexible work arrangement, more generally.

Although many of the effects found in this study may be statistically classified as small effects (Cohen, 1983), the magnitude of these effects is unsurprising and should not be conflated with a lack of importance. Individuals with chronic health conditions are faced with a number of challenges barriers in supporting their overall health and wellbeing, such as need for time and monetary resources such as time involved with managing health conditions, access to affordable healthcare, and the financial burden associated with healthcare appointments, costs of medications, and possibly missed work time (Kane, 2005). Therefore, it is likely teleworking is only one, among many, mechanisms which might benefit worker's functional capacity (e.g., work ability) and well-being. When considering the practical rather than statistical implications

of the current findings we may consider how relief and support in managing one's chronic health condition and associated symptoms, no matter how small, may be considered significant for worker's themselves.

Theoretical Implications

Conceptually, in the context of the Job Demands-Resources model (Bakker & Demerouti, 2014), telework might serve as a form of job crafting. Job crafting refers to behaviors employees take to change the design of their job and better meet their overall job demands (Times et al., 2012). In the current study, telework represents a form of job crafting in which employees are able to better establish resources of flexibility and job control in order to meet the demands of their job and also personal demands related to managing a chronic health condition within the work environment. Specifically, by altering the design of their work (e.g., work location), workers are better able to implement their work in an environment with the resources needed (i.e., flextime and control) to manage their health condition. Results of this study provide support for the JDR model, demonstrating that altering one's job design through telework is beneficial for supporting workers' functional capacity and well-being, primarily due to the increased perceptions of necessary resources (i.e., flextime, job control).

When considering the future utility of the JDR model, recent literature has brought attention to the importance of considering the notion of *personal demands* within the context of the JDR framework (Bakker & Demerouti, 2017; McGonagle et al., 2015). Personal demands refer to "requirements individuals set for their own performance and behavior that force them to invest effort in their work and are therefore associated with physical and psychological costs" Barbier et al. (2013, p. 751). Within the context of the current study, participant CHCs as well as their own expectations to perform at work in light of those CHCs is representative of a personal

demand which may hold the potential to induce employee strain within the workplace. In this study, when participants with CHCs teleworked, they reported increased levels of job resources (i.e., flexplace and job control), and subsequently higher levels of work ability and well-being than when working from their central office. Considering these outcomes, this study takes at least a preliminary step at addressing employee personal demands within the context of the JDR framework and provides additional support to the framework as a whole. However, future research should be conducted to better identify the extent to which one's CHC might vary as a personal demand is needed in order to better understand the role CHCs serve as a personal demand and the extent to which this demand can be mitigated by job design. For instance, two employees with the same CHC might experience the same symptoms and demands (e.g., pain, fatigue, need for medication) to varying degrees, and making alterations to one's work might support one worker, but not another, due to variations in strength of their symptoms or condition.

Implications for Practice

Though nuanced, the present findings have critical implications for organizations looking to implement telework as an accommodation practice for their workers managing chronic health conditions. Overall, the present findings suggest teleworking is beneficial for the work ability and well-being of workers with CHCs, primarily due to the control they perceive over their work environment and conducting of their work tasks. Organizations looking to provide telework accommodations for their employees may do so inexpensively, with the likelihood of beneficial outcomes for both the worker and the organization (Blount, 2019).

However, if organizations are to provide their workers the option to telework to benefit their overall work capacity, they must ensure employees are equipped with the proper job-related resources to conduct their work. Such resources may be tangible, or task-based resources such as

sufficiently powered computer technology or wireless access or may be more structural in nature such as clear and relevant guidance or training on how to conduct one's work within a virtual environment. These recommendations are aligned with prior findings in which workers who received adequate home-office training upon teleworking subsequently reported better job-attitudes related to their utilization of telework (Harrington & Walker, 2004). Thus, as organizations may become more likely to provide teleworking options and accommodations for employees in the years following the pandemic (Global Workplace Analytics, 2020b), they must consider the resources employees expect and necessitate to effectively conduct their work.

Limitations and Future Research

Telework in Light of COVID-19

The onset of the COVID-19 pandemic presented a considerable methodological challenge and limitation for the current study. Before the onset of the pandemic, it was likely that many employees who enrolled in a telework arrangement with their organization had variability in when they chose to utilize their ability to telework. Because a large proportion of organizations transitioned employees to full-time, or majority telework, I experienced difficulty in gathering enough within- and between-persons variance in participant work location (i.e., telework versus not telework). Although there was enough within-person variance to deem multi-level analyses appropriate, low levels of variance likely affected the extent to which I can generalize these results to a post-pandemic work environment. Additionally, because this study was conducted during the COVID-19 pandemic and prior to the availability of COVID-19 vaccinations, the true associations between teleworking and participant's work ability and well-being may differ if evaluated during a different period of time, such as following vaccine administration and the return of many workers to in-person work environments.

Consequently, researchers might repeat the current study when workers have more opportunities to choose where to perform their work (i.e., their central organization or via telework) in order to evaluate the relationship more effectively between of teleworking and worker well-being and work ability in a post-pandemic working world. Alternatively, researchers might garner qualitative accounts of the experiences of workers with chronic health conditions as they transition from predominantly remote work-schedules to less frequent telework as the COVID-19 pandemic subsides. Finally, researchers might evaluate how, workers' perceptions of job control, and especially workers with CHCs, fluctuate between prescribed telework arrangements (such as forced telework during the pandemic) and telework when used as a flexible work arrangement (such as when used as an accommodation or family-supportive practice), and whether these fluctuates relate to worker health and well-being.

Nonetheless, findings from this study still lend to the utility of teleworking for workers with chronic health condition amid pandemic concerns. Although many participants were teleworking due to organizational mandates, it is possible the utilization of telework allowed them to maintain their work ability during the pandemic by reducing the likelihood of exposure to COVID-19, especially in relation to participants' membership of at-risk health categories. To better identity how teleworking influenced worker perceptions of safety and work ability amid the pandemic, I will next analyze participant's qualitative responses to the daily surveys employed in this study.

Study Attrition and Nonresponse

As previously mentioned, ESM, and similarly longitudinal, designs place a substantial burden on respondents due to the number of assessments required for participation (Gabriel et al., 2019; Ployhart & Vandenberg, 2010). Ployhart and Vandenberg (2010) suggested that

researchers utilizing forms of longitudinal designs should prepare for the worst, up to a 50% attrition rate due to this burden. Although I did not experience participant attrition to this degree within the current study, a proportion of participants missed assessments across the span of their 2-week involvement in the study. For example, 90 (85.0%) of participants completed 90% of their assessments (e.g., 18 of 20 surveys), and 6 participants completed less than 50% of all daily assessments. In these instances, it is possible workers may have been experienced reduced work ability or well-being which led to them missing their daily assessment. Thus, the present results may not be entirely representative of participant experiences teleworking. Future research might address these concerns through utilizing ambulatory methods that are not susceptible to participant non-response. For instance, future studies may look to measure participant heart-rate patterns as an indicator of strain (Eatough et al., 2016), in conjunction with survey or interview assessments, to better gather a holistic understanding of workers' experiences when teleworking.

Generalizing Beyond the Current Sample

Finally, it is important to note the limited demographic composition of the sample in this study. The current sample is overwhelmingly comprised of white- (98.1%) and female-identifying (91.4%) participants, with only 29 of 106 participants (27%) reporting dependents in the home. Considering data for this study were gathered during the COVID-19 pandemic, when many teleworkers in the greater population were teleworking in the home among dependents (such as school-age children engaging in school online from home, requiring working parents to manage their children's education in addition to work) and presence of and possibility of interruptions from other family members, the current findings may not entirely reflect common telework experiences during the pandemic.

A majority proportion of participants also identified as having an autoimmune disease (65.1%) or a mental health disorder (44.3%). Finally, participants in the current sample are, on average, of a younger age than the general population of workers with chronic health conditions which typically spans 18-64 years of age (Ward, 2015). As a whole, these worker characteristics may limit. Future research might consider how individual perceptions of job control might fluctuate when employees choose to telework in order to better manage their chronic health condition while also managing caregiving responsibilities of other family situations.

Further, the average age of the current sample may be seen as a boundary in light of individuals often acquiring health condition diagnoses later in life and that number of health conditions a person has is likely to grow with age. For reference, 50% of adults aged 45-64 and 81% of adults 65 or older report having multiple chronic health conditions (Buttorf et al., 2017), and older adults are more likely to have caregiving responsibilities than younger adults (Blount, 2019). Thus, future research might evaluate the desirability and utility of telework as work practice meant to support workers with CHCs across varying age ranges. However, prior research regarding general teleworking experiences between younger and older workers does not indicate differences in experiences by age (Arvola & Kristjuhan, 2015; Arvola et al., 2017).

The restricted nature of the current sample is likely a result of the sampling techniques I utilized for participant recruitment. I first distributed my recruitment materials to family and friends through my, my family's, and my close peers', social media platforms: Instagram, Facebook, and Twitter. Additionally, I posted my recruitment materials to various Reddit sub-forums related to a variety of disabilities and chronic health conditions. To post my materials, I first needed to gain permission from the forum moderators. In many cases, the moderators who responded and granted permission, were from sub-forums related to autoimmunity, chronic pain,

and mental health. Finally, the organizer of a popular Instagram account, @disabilityreframed, distributed my materials by way of a social media post one a week until I reached the needed number of participants. It is possible this account's audience is primarily composed of white- and/or female-identifying members.

The demographic composition of sample in this study is consistent with the general prevalence of autoimmune disease by sex. For example, prior studies have found approximately 80% of individuals with at least one type of autoimmune disease to be biologically female (Fairweather et al., 80%). Therefore, it is possible respondent makeup by gender within this study is due, in part, to sex-based differences in autoimmune prevalence in the greater population. However, minority and non-white groups are known to carry the majority burden of autoimmune prevalence within the greater population (Lee et al., 2018). Thus, the current study sample does not reflect the population prevalence of individuals with autoimmune diseases. In order to evaluate the association more equitably between telework and work ability and well-being among workers with CHCs', future researchers should take care to use recruiting methods that are likely to reach a more diverse sample. For example, minority groups by race have been known to be less likely to use, or have access to, word-of-mouth recruiting information (McFarland & Kim, 2019) such as those often facilitated through convenience or snowball sampling techniques. Therefore, targeted recruitment methods, such as distributing recruitment materials through diverse avenues, directly stating and promoting the value of recruiting a diverse pool of study participants and employing recruiting efforts within minority communities (Avery & Mckay, 2006), might increase the likelihood of future studies to recruit participants from underrepresented groups.

CONCLUSIONS

Chronic health conditions (CHS) affect 6 in 10 of adults in the United States, and lead to increased operating costs for organizations and functional detriments to workers managing CHCs in the workplace. Although telework has been promoted as a work practice to mitigate these effects (ADA, 1990; Blount, 2019), this study is perhaps the first to report empirical data supporting telework as a mechanism for supporting the work ability and well-being of workers managing CHCs in the workplace, as well highlight the influence of the nature of one's work in predicting the effectiveness of teleworking as an accommodation practice. At the daily level, when workers with CHCs perform their jobs via telework, they report higher levels of job control, and subsequently better work ability and well-being. Certain work activities, however, attenuate this relationship. When workers' jobs require higher level of educating others, such as teaching within a virtual work environment, employees report reduced job control, work ability, and well-being. Considering this nuanced relationship between telework and the work ability and well-being of workers with CHCs, it is my hope future researchers attempt to replicate and expand on the current findings. In doing so, we might better center workers with chronic health condition among both science and practice-based discussions on the effects of telework.

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APPENDIX A

Daily Assessment Items

Which location are you currently working from right now?
- Organizational setting (i.e., office)
- Home
- Co-working space
- Tele/Remote center
- Other location (please specify)

Skip logic if "Other location" selected.
Please specify.
[*open response*]

Skip logic if "home", "co-working space", "tele/remote center", or "other location" selected.
At this moment, is your decision to telework part of your regular scheduled work schedule, or part of an as-needed flexible work arrangement?
- Scheduled
- As needed

Skip logic if "home", "co-working space", "tele/remote center", or "other location" selected.
What factors contributed to your decision to telework today? If you've already answered this question today, has anything changed from your original response?
[*open response*]

Work Activities

*Thinking about the tasks and activities you will complete this **AFTERNOON / EVENING**, to what extent will you:*

Observe, receive, or obtain information from relevant sources (e.g., through reading written materials).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Monitor processes or material (e.g., review information from materials to detect or assess problems).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Analyze data or information (e.g., data analysis).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Analyze information and evaluate results to choose the best solution and/or solve problems.
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Process information by compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data (e.g., reviewing forms, working within spreadsheets).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Think creatively by developing, designing, or creating new applications, ideas, relationships, systems or products, including artistic contributions (e.g., content development).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Enter, transcribe, record, store, or maintain information in written or electronic form (e.g., word processing).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Perform general physical activities that require the use of your arms, legs, and/or whole body.
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Communicate with supervisors, peers, subordinates, or others in written form (e.g., email).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Communicate with supervisors, peers, subordinates, or others via telephone.
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Communicate with supervisors, peers, or subordinates by video communication (e.g., Zoom, Microsoft Teams, FaceTime).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Perform administrative activities (e.g., maintaining information files, processing paperwork).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Train or teach others (e.g., developing formal education or training programs, teaching or instructing others).
- Not at all
- Slight extent
- Moderate extent
- Great extent
- Very great extent

Work Ability

Please answer the following questions considering the current moment, it is okay if your answers have changed since your last assessment.

How many points would you give your current ability to work?
[*0 = work ability at its lifetime worse, 10 = work ability at its lifetime best*]

Thinking about the physical demands of your job, how do you rate your current ability to meet those demands?
[*0 = work ability at its lifetime worse, 10 = work ability at its lifetime best*]

Thinking about the mental demands of your job, how do you rate your current ability to meet those demands?
[*0 = work ability at its lifetime worse, 10 = work ability at its lifetime best*]

Thinking about the interpersonal demands of your job, how do you rate your current ability to meet those demands?
[*0 = work ability at its lifetime worse, 10 = work ability at its lifetime best*]

How do you estimate your current work impairment due to your chronic health condition(s)?
- None at all
- Slight Impairment
- Moderate impairment
- Considerable impairment
- Unable to work

Please explain your response.
[*open response*]

Please rate your level of pain right now.
[*0 = no pain, 10 = pain as bad as you can imagine*]

Wellbeing

Right now, I am satisfied with my life.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Right now, I am satisfied with my job.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Mental Health Status

Please think about the current moment and the feelings you are experiencing. Please indicate how strongly you agree or disagree with the following statements.

I feel depressed.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

I feel that everything I do is an effort.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

My sleep was restless.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

I am happy.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

I am lonely.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

I am enjoying life.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

I feel sad.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

I cannot get going.
- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Job Control

At the current moment, how much can you choose among a variety of tasks or projects to do?
- Very little
- Little
- Moderate amount
- Much
- Very much

At the current moment, how much control do you have personally over how much work you get done?
- Very little
- Little
- Moderate amount
- Much
- Very much

At the current moment, how much control do you have over how quickly or slowly you have to work?
- Very little
- Little
- Moderate amount
- Much
- Very much

At the current moment, how much control do you have over the scheduling and duration of your rest breaks?

- Very little
- Little
- Moderate amount
- Much
- Very much

At the current moment, how much control do you have over your work schedule (i.e., when you come (begin) to work and leave (end working)?

- Very little
- Little
- Moderate amount
- Much
- Very much

At the current moment, how much can you control the physical conditions of your workstation (lighting, temperature)?

- Very little
- Little
- Moderate amount
- Much
- Very much

Physical Health

At the current moment, to what extent are you currently able to manage your chronic health condition(s)?

- Not at all
- Slightly
- To some extent
- To a great extent
- To a very great extent

At the current moment, to what extent does teleworking influence your ability to manage your chronic health condition?

- Not at all
- Slightly
- To some extent
- To a great extent
- To a very great extent

Please explain.
[*open response*]

Is there anything else you would like to tell us about your work experience and/or how you are feeling in relation to your chronic health condition?
[*open response*]

[PM ONLY] How many hours have/will you work(ed) today?
[PM ONLY] How many of those hours were/will be spent teleworking?
[*open response with character limit, numerical only*]

APPENDIX B

Standardized Level 1 Path Estimates for Un-supported Direct Effect and Mediation Hypotheses

Table 8

Outcomes on antecedents and mediators ($p > .05$)

	γ	SD	*p*	95% CI
Work Ability				
Location	-.05	.18	.40	-.404, .305
Flextime	-.07	.05	.10	-.173, .036
Flexplace	.02	.04	.31	-.063, .106
Depression				
Location	.02	.03	.29	-.047, .081
Flextime	.03	.04	.23	-.043, .099
Flexplace	.02	.03	.24	-.040, .088
Life Satisfaction				
Location	-.03	.03	.17	-.096, 0.033
Flextime	-.06	.04	.07	-.126, .020
Job Satisfaction				
Location	.01	.04	.38	-.060, .080
Flextime	.03	.04	.25	-.050, .108
Flexplace	.05	.04	.10	-.024, .120

APPENDIX C

Standardized Level 1 Path Estimates for Un-supported Moderation Hypotheses

Table 9

Mediators on antecedents and interactions (p > .05)

	γ	SD	*p*	95% CI
Job Control				
Inter x Loc	-.05	.04	.11	-.116, .028
Input x Loc	-.01	.04	.46	-.087, .073
Output x Loc	-.05	.04	.09	-.124, .024
M Proc x Loc	.05	.04	.10	-.028, .134
Admin x Loc	.03	.04	.21	-.046, .107
Phys x Loc	.01	.03	.43	-.058, .070
Create x Loc	.03	.03	.186	-.035, .095
Flextime				
Location	-.05	.10	.30	-.239, .149
Inter x Loc	-.05	.11	.34	-.249, .150
Input x Loc	-.03	.04	.21	-.115, .049
Output x Loc	.01	.04	.41	-.067, .085
M Proc x Loc	.04	.04	.19	-.045, .120
Admin x Loc	.01	.04	.37	-.065, .088
Phys x Loc	-.03	.03	.20	-.090, .035
Create x Loc	-.00	.03	.44	-.072, .060
Flexplace				
Inter x Loc	.04	.04	.14	-.033, .116
Educ x Loc	-.124	.08	.05	-.271, .026
Input x Loc	-.07	.04	.06	-.153, .116
Output x Loc	-.04	.04	.13	-.065, .069
M Proc x Loc	-.00	.04	.49	-.086, .082
Admin x Loc	-.01	.04	.36	-.095, .067
Phys x Loc	-.00	.03	.47	-.065, .069