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Examination of the Impact of Remote Working Conditions on Quality of Life

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ABSTRACT

Given the recent state of affairs, many organizations have adopted remote working conditions as a norm. Various challenges affecting quality of life are impacted by working from home. The aim of this literature review is to provide further insight into the impacts that working from home (WFH) had on the productivity and quality of life of workers across occupations. Review of the literature showed that autonomy has a significant impact upon work engagement, which in turn leads to a significant positive association on worker happiness. In addition to autonomy and work engagement, research indicates that the convenience of WFH also is positively associated with work engagement. Since remote working conditions are likely to remain, it is important for organizations to understand the impact of remote conditions on the quality of life of employees.

KEYWORDS

mental health, quality of life, social support, teleworking, working environment

INTRODUCTION

The COVID-19 pandemic caused numerous workplaces to adopt remote working conditions in many sectors. The effects of the sudden lockdown in previous literature have differed largely based on characteristics related to the workplace and the individual. The effects of remote working have been studied for some occupations, but the impact of remote working on worker productivity and quality of life across numerous sectors is still inconsistent. Transitioning from in-person work environments to remote ones has been one of the largest challenges associated with working from home (WFH). The presence of others in the household, such as children and partners, has impacted productivity during WFH. In response to the abrupt onset of the remote work environment, many WFH employees were forced to take on additional responsibilities in the household due to the disruption in childcare and education services during the initial stages of the pandemic (Aczel et al., 2021; Galanti et al., 2021; Tejero et al., 2021).

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WFH is viewed as a solution for many who are required to look after a dependent or for those seeking a stronger work-life balance in general (Aczel et al., 2021). However, the effect on employee productivity during WFH is in question due to the added distractions that may arise in the household (Aczel et al., 2021). The balance between work responsibilities and newfound familial responsibilities plays a role in staying productive during WFH (Tejero et al., 2021). A suitable work environment is critical to maintaining productivity in the remote work setting. Unlike the office, the home workspace may involve uncontrollable noise, loss of privacy, and comfort for some (Awada et al., 2021; Harker Martin & MacDonnell, 2012). These elements in the remote workplace may be able to be mitigated, but restrictions from WFH may prevent adjustments from being made. This is because sharing a remote workspace with others causes an individual to avoid making changes, which may impact productivity (Awada et al., 2021). Family-work conflict can arise from sharing workspaces, which likely impacts productivity in the WFH environment (Galanti et al., 2021; Farooq & Sultana, 2021).

This literature review provides further insight into the impacts that working from home (WFH) had on the productivity and quality of life of workers across occupations. The key components analyzed in this review are worker productivity and quality of life. For this study, productivity has been defined as "productivity as a combination of efficiency and effectiveness and everything that makes an organization function better" (Linna et al., 2010). Based on previous literature, three major areas of influence that affect productivity during WFH include the work environment, demographic impacts, and working conditions. The work environment consists of many factors of the WFH workspace, including the presence of others in the household, a suitable work environment, and work–family conflict. Demographic impact includes characteristics of certain demographic groups that may affect an individual's ability to remain productive. Lastly, working conditions regarding the nature of the work being completed and existing conditions employees are exposed to daily influence overall satisfaction.

BACKGROUND

Transitioning from in-person work environments to remote ones has been one of the largest challenges associated with working from home (WFH). WFH has impacted the quality of life for many remote employees. For this study, quality of life was defined as an individual's perception of health, comfort, and happiness experienced by an individual. The rapid transition to remote work during the pandemic has impacted social support for many people. Work–life balance has been found difficult to obtain because of the lack of face-to-face interaction (Shimura et al., 2021). Other studies have shown that the social support provided by family members and superiors can dampen the effect of stress and can help promote quality of work and life (Costa et al., 2022; Platts et al., 2022; Tejero et al., 2021) Childcare responsibilities and workload have also been found to impact stress (Simon et al., 2004). Previous literature has shown that negative effects on maintaining a work–life balance include prolonged time at work, having a nervous mood, spending too much time at work, risking obesity from easy access to food and drinking, social isolation, disruption in children's education processes can impact stress (Birimoglu Okuyan & Begen, 2022).

Gender has also been noted as having an impact on the productivity of workers during WFH (Awada et al., 2021; Farooq & Sultana, 2021; Etheridze et al., 2020; Weitzer et al., 2021). This may have been due to women taking on additional burdens when remote working, such as helping with remote learning for kids. Previous research has shown that age also plays a role in productivity for remote workers (Awada et al., 2021). Salary was also shown to impact productivity during WFH (Awada et al., 2021; Etheridge et al., 2020). This may have been because people who earn more generally work in white-collar jobs, which are more conducive to remote working than blue-collar jobs. Other research has also shown that the industry someone worked in played a significant role in their productivity. This may be because, as mentioned earlier, some industries are better suited

to remote work than others (Awada et al., 2021). Also, this could be due to some industries having previously worked remotely, so switching to WFH was not a drastic change for some.

Certain workplace conditions can either hinder or facilitate productivity in daily tasks. Therefore, accommodation to preferred work schedules at personal peak efficiency hours can increase concentration on work tasks (Harker Martin & MacDonnell, 2012). Employers trust that the workers will complete tasks rather than regulate when and where they do. Furthermore, workplace flexibility is related to employers supporting different work styles and needs, such as taking frequent breaks (Umishio et al., 2022). The demand for autonomy on projects offers flexibility that entails trust and support in the employee (Baker et al., 2007). Along with trust, social support from management and colleagues can minimize work-related stress, eliciting an environment where the employee feels comfortable communicating and asking for help (Tejero et al., 2021). Building these professional relationships based on trust and support can greatly affect job performance (Golden et al., 2008).

An encouraging culture within a digital workplace can also combat social isolation, which is significantly associated with WFH (Aczel et al., 2021; Galanti et al., 2021). Overall, compared to employees who work in the office, WFH employees reported higher satisfaction levels in their jobs, were less likely to quit, and were more productive in everyday tasks (Golden et al., 2008; Bloom et al., 2014). However, WFH may negatively affect productivity due to a lack of communication or a routine (Farooq & Sultana, 2021). Consequently, worker satisfaction comes with having flexibility, a strong social support system, and needed autonomy in tasks.

The transition to WFH after the COVID-19 pandemic impacted mental health and overall well-being. Symptoms of decreased mental health include sleep issues, anxiety, depression, loneliness, stress, obesity, and other health-related issues. Sleep disorders and sleep stress were very common among those who work from home, as studies show that discomfort and sleep patterns were altered (Tejero et al., 2021). Stress may be a contributor to lack of sleep due to the demands of work and burnout from long hours (Vindegaard & Benros, 2020). Risks for anxiety and depression among employees and the public include living alone during the pandemic, being a woman, having more than two children, having a lower education status, and experiencing high stress and burnout at work (Vindegaard & Benros, 2020). Previous literature indicates that associated feelings of loneliness may correlate with declining work satisfaction and performance as well as stress enhancement (Tejero et al., 2021; Sandoval-Reyes et al., 2021; Aczel et al., 2021; Galanti et al., 2021; Nakrošienė et al., 2019). Among those who have families, employees may experience time-based work-family conflicts due to conflict with allocating available times to both domains (Tejero et al., 2021; Simon et al., 2004; Sandoval-Reyes et al., 2021; Pradoto et al., 2022). This leaves little room to prioritize healthy practices after extended work hours and multitasking work and family responsibilities, which can lead to loneliness (Amano et al., 2021). Negative effects on maintaining work–life balance with increased work hours include having a nervous mood, spending too much time at work, and risking obesity from easy access to food and drinking (Birimoglu Okuyan & Begen, 2022).

The remote workspace conditions include flexibility, autonomy, and satisfaction in one's work. Flexibility and autonomy are two factors that seem to play a large role in overall quality of life (Platts et al., 2022; Tejero et al., 2021; Nakrošienė et al., 2019; Chu et al., 2021). In some areas, employees have high control of their working schedule and can complete their deliverables on their own time (Chu et al., 2022). Similarly, WFH allows parents to spend additional time with family and complete tasks independently, and the increased autonomy and flexibility can reduce work-family conflict (Tejero et al., 2021). In addition to increased autonomy and flexibility, teleworking even provides individuals with lower stress, which may impact job satisfaction and quality of life (Nakrošienė et al., 2019). Another factor that seems to be associated with WFH is work engagement, which refers to an employee's dedication and positive state of mind toward completing tasks (Amano et al., 2021). Work engagement is a culmination of the balance between job demands and the availability of resources such as autonomy, co-worker support, and other extrinsic rewards (Amano et al., 2021). Similarly,

extended working hours during the pandemic affected worker engagement, which impacted the overall quality of life in response to the pandemic (Amano et al., 2021).

It is important to acknowledge that productivity and quality of life do not exist entirely separately. Factors of quality of life may influence one's productivity and vice versa. For example, the impact that children and partners in the household may have effects on both productivity and quality of life (Galanti et al., 2021). Additionally, an individual's ability or inability to productively complete work may influence day-to-day feelings. This emphasizes the importance of establishing strong distinctions between work and personal life as much as possible during WFH (Galanti et al., 2021).

METHOD

A literature review was conducted to analyze various factors of working from home that impacted productivity and quality of life. This literature was utilized to identify the most prevalent factors to analyze when considering the impact of WFH on worker productivity and quality of life. PubMed was used for acquiring studies that looked at worker productivity and quality of life. In PubMed, the following searches were utilized for papers regarding productivity: *COVID-19 AND Remote Work AND Productivity* as well as *"Working from home" AND "Productivity"*. The following searches were utilized for papers regarding the quality of life: *COVID-19 AND Remote Work AND Quality of life* as well as *"Working from home" AND "Productivity"*.

"Remote work" and *"Working from home"* were used in the search strategy to ensure that all relevant articles related to WFH could be identified. The inclusion criteria of *productivity* and *"Quality of life"* were needed to target the type of measure being studied concerning the WFH environment. The PubMed searches include articles between the years 2020 to 2022, peer-reviewed articles, articles published in academic journals, and articles published in English to include the most relevant articles for the research. While reviewing the articles after the previous criterion was applied, studies conducted in the United States were included to better generalize the results to the target population, and studies conducted in other countries were still used because of their relevance to the topic. After incorporating all these search strategies and reading abstracts to review the relevancy of articles to the research question, 19 total articles were selected for productivity, and 21 total articles were selected for quality of life. Five articles were used in both studies.

RESULTS

Articles were analyzed with regard to the relationship between WFH and worker productivity. These articles gave insight into how aspects of the work environment, demographic impact, and working conditions during WFH have been evidenced to influence productivity. Findings from previous literature consistently report a negative association between distractions in the workplace and relative productivity (Awada et al., 2021). Working parents with school-age children pick up a variety of other caregiving responsibilities that cause fluctuations in work hours compared to those without children or who live alone (Awada et al., 2021). Furthermore, in a study looking at the benefits of WFH for researchers, 71% of single parents and 57% of partnered parents found WFH less efficient than before WFH (Awada et al., 2021). Respondents specifically indicated that loss of productivity came from distractions associated with family, especially from childcare and housework (Wu & Chen, 2020). However, one study indicated that non-work-related activities reportedly did not affect work productivity as these non-work-related activities were said to be used to decrease stress associated with WFH (Chu et al., 2022). Similarly, Galanti et al. (2021) did not find a significant negative association between distractions and productivity, but a significant negative association between family conflict and productivity was reported. A specific place designated to do work away from distractions leads to higher levels of productivity (Awada et al., 2021; Birimoglu Okuyan & Begen, 2022). Compared to those without a dedicated workspace, productivity was higher for those with a dedicated workspace

(Awada et al., 2021). Sharing the workspace with other household members decreases productivity in the WFH environment (Awada et al., 2021). Additionally, having the proper information technology resources may hold a positive association with productivity, but the findings are inconsistent (Shimura et al., 2021). Family–work conflicts that may arise from a variety of the aforementioned reasons pose a significantly negative association with productivity in the WFH setting (Galanti et al., 2021).

Impact of Age and Gender on Productivity

There was a significant but minimal correlation between age and relative productivity in the WFH environment (Awada et al., 2021). The research regarding gender and productivity has shown mixed results. Some studies have shown a significant effect of gender on productivity and that females are, on average, more productive than their male counterparts (Weitzer et al., 2021). However, other studies, such as Etheridge et al. (2021), have shown females were negatively associated with productivity during remote work and that men were positively associated with productivity in the WFH environment (Farooq & Sultana, 2021). This may be because many women had to take on additional household responsibilities, such as caring for children and helping with remote learning. Some fields, such as engineering, architecture, computer science, mathematics, and healthcare, had lower productivity levels than others, such as scientific research (Awada et al., 2021). This could be because the fields with lower productivity may have never previously had remote work, so it was a much more difficult task for them to switch to WFH compared to other fields where remote work was more prevalent.

Impact of Job Autonomy and Flexibility on Productivity

Previous literature shows that those who experience high job autonomy and flexibility are more productive working from home (Galanti et al., 2021; Tejero et al., 2021; Mehta, 2021). It is supported that workers prefer to have flexibility in their work hours, attributing a preference in the time of day they work to fit the hours where they may feel alert, awake, and focused (Awada et al., 2021; Farooq & Sulatana, 2021; Nakrošienė et al., 2019). Consequently, mindfulness was associated with higher levels of worker productivity (Toniolo-Barrios & Pitt, 2021). Similarly, different work style accommodation was limited due to the increased job demands placed on workers working from home (Galanti et al., 2021; Barbieri et al., 2021). These increased job demands are negatively associated with WFH productivity (Galanti et al., 2021; Barbieri et al., 2021). This is consistent with the work style of not taking breaks, decreasing productivity and work–life balance (Birimoglu Okuyan & Begen, 2022). Better satisfaction in work–life balance and concentration was reported among those who have a dedicated workspace at home in comparison to those who utilize other areas of their home multifunctionally (Tejero et al., 2021; Awada et al., 2021; Birimoglu Okuyan & Begen, 2022).

Previous literature states that there is an association between communication and productivity in the workplace (Tejero et al., 2021; Farooq & Sultana, 2021). WFH employees report an increased struggle to adapt to a new workplace routine carrying effective communication and cooperation digitally. This, in turn, lengthens work hours and decreases efficiency (Tejero et al., 2021; Farooq & Sultana, 2021). Furthermore, employees report that their daily productivity has decreased due to a lack of remote support from the faculty information technology team, slowing the work pace (Farooq & Sultana, 2021; Umishio et al., 2022). Timely feedback from employers was associated with an increase in worker productivity due to workers being made aware of their strengths and weaknesses in an online setting (Baker et al., 2007). However, working from home tends to help reduce social distractions from coworkers (Nakrošienė et al., 2019). Therefore, working from home has had a mixed impact on the social aspect of workplace productivity (Tejero et al., 2021; Farooq & Sultana et al., 2021; Umishio et al., 2022; Nakrošienė et al., 2019).

New findings in the literature show that inadequate infrastructure is positively associated with productivity; working industries with limited knowledge of technology struggle to adapt to the new working conditions (Etheridge et al., 2020). This quick transition into a fully digital workplace adds stress for those who have trouble with technology, decreasing productivity due to workers taking time

to alter their working methods (Chu et al., 2022). As a result, literature has found that extra financial compensation is an incentive to increase productivity for the WFH transition, lowering stress levels (Baker et al., 2007; Birimoglu Okuyan & Begen, 2022).

Impact of Social Support on Stress Levels

Reviewing the literature showed that the level of social support had a significant impact on the stress levels of remote workers. Family–work conflict and social isolation were negatively associated with WFH (Birimoglu Okuyan & Begen, 2022). One study found that 7.3% of faculty reported sleep problems associated with remote work (Birimoglu Okuyan & Begen, 2022). Social isolation and lack of communication are major disadvantages of telework (Nakrošienė et al., 2019). Employees with low levels of social support are more likely to see worsened WFH outcomes than employees with better social support (Tejero et al., 2021). Employees working from home had difficulties distancing from work, increasing stress levels with an associated increase in workload, reduced social support, and a hard time balancing personal life and work life (Tejero et al., 2021). Close communication with superiors, refraining from working long hours, and obtaining adequate sleep are associated with high work engagement in Japanese employees working from (Amano et al., 2021). People who had children had better mental health outcomes than people who didn't have children (Mendonca et al., 2022).

Impact of Mental Health on Productivity

Literature reveals significant data contributing to overall mental health and well-being among various careers. High levels of obsessive-compulsive disorder were reported among healthcare workers compared to the public (Vindegaard & Benros, 2020). Furthermore, 29.2% of healthcare worker participants reported significantly higher depressive symptoms after the start of the pandemic (Vindegaard & Benros, 2020). A lack of self-care contributed to 17.3% of the participants in a similar study (Birimoglu Okuyan & Begen, 2022). On a gender comparison, women had higher levels of stress and depressive symptoms (Platts et al., 2022). Females in the healthcare industry reported significantly higher levels of psychosocial problems, 90.57%, compared to men, 9% (Shaukat et al., 2020). Female workers who earn less than six figures reported new mental health problems more frequently (Xiao et al., 2021). Additionally, Female employees in the IT industry were more susceptible to burnout than males in the same industry (Kumaresan et al., 2022). Additionally, IT professionals in general report higher levels of burnout and depression during the pandemic (Kumaresan et al., 2022). However, men reported that working from home allocated more time for leisure activities and hobbies (Aczel et al., 2021). Regardless of gender, divorced or widowed people reported higher levels of anxiety than people who were married or single (Xiao et al., 2021). Depressive symptoms decreased with age, with those aged 16-24 years reporting the highest levels of symptoms and those aged over 45 reporting the least symptoms (Platts et al., 2022; Nakrošienė et al., 2019). Furthermore, in the education field, teachers below 45 years had worse mental health outcomes than teachers older than 45 years (Barbieri et al., 2021).

Regardless of demographic statistics, an overarching contributor of stress lessens the positive effect of working remotely on productivity and engagement (Sandoval-Reyes et al., 2021). Consequently, sleep quality worsens during WFH, with participants using terms such as stress, irritability, and tension when describing their sleep patterns (Tejero et al., 2021). WFH is associated with an increased risk of disturbed sleep and a loss of energy and creativity (Chu et al., 2022). Participants who had more hours of sleep were associated with increased work engagement (Amano et al., 2021). All these measures show that participants are less able to detach themselves from work while WFH (Tejero et al., 2021).

DISCUSSION

Analyzing the literature showed that autonomy has a significant impact on work engagement, which in turn leads to a significant positive association with worker happiness (Galanti et al., 2021; Mehta,

2021). In addition to autonomy and work engagement, research indicates that the convenience of WFH is also positively associated with work engagement (Mehta, 2021). Additionally, time-planning autonomy has been seen to positively influence satisfaction with telework, especially in the presence of households with young children (Nakrošienė et al., 2019; Mehta, 2021). Employee work–life balance is positively associated with happiness during WFH in response to COVID-19 (Chu et al., 2022). A healthy work–life balance allows for reduced stress as a result of more flexibility to engage in non-work-related activities intended to relieve stress (Chu et al., 2022). Employees with a dependent while working from home, either full-time or part-time, had significantly higher levels of depressive symptoms when compared to the in-person workspace (Platts et al., 2022). Men reported significantly higher levels of work-life conflict, which, during the initial waves of COVID-19, a high risk of exposure and chance of infection led to increased stress levels (Galanti et al., 2021).

The impact of supervisor expectations and job demands on quality of life has also been a crucial factor (Galanti et al., 2021; Amano et al., 2021). Working reasonable hours and getting adequate sleep is typically a bigger challenge among WFH employees, which negatively impacts overall satisfaction (Amano et al., 2021). Additionally, a heavy workload with high job demands and high levels of time pressure is not conducive to high well-being, threatening work engagement (Amano et al., 2021). Job demands such as family-work conflict significantly decrease work engagement while positively associated with increased job stress (Galanti et al., 2021). Additionally, distracting environments and crowded homes may further complicate the balance between family and work, leading to decreased motivation and engagement (Galanti et al., 2021).

Based on analysis of previous literature, factors pertaining to the work environment that may play a role in productivity were classified into three main points: the presence of distractions, a suitable work environment, and a shared workspace. Most previous literature indicated that environments with many distractions from family conflict can decrease productivity. One article did not recognize a significant negative association between distractions and productivity (Galanti et al., 2021). Nonetheless, this study reported that worker engagement was hindered, and a significant negative association between family conflict and productivity was found, which indicates that an overall negative association between distractions and productivity in the WFH can be justified. The literature indicated that a suitable environment is important to successful productivity levels. However, it can be reportedly difficult to match the productivity seen during in-person work.

Additionally, a shared workspace has a negative association with productivity, indicating that having an individualized workspace improves productivity. Various demographic characteristics have an important role in worker productivity. For example, the quality of living decrease was most significant in women and those under 45 years of age. Working conditions with room for flexibility and autonomy yield higher rates of productivity. Furthermore, having a strong, professional social support system elicits better communication among team members and increases worker productivity. A monetary stipend for the transition to WFH was favorable and produced higher work satisfaction.

Previous literature indicated that social support was generally reported to significantly impact the quality of life of employees during WFH. Specifically, stress levels of those WFH seemed to increase for many, likely due to decreased communication with coworkers. The lack of communication with other employees typically led to feelings of isolation, which was deemed one of the major disadvantages of the WFH conditions. Increased stress was prevalent as distancing from work commitments was more difficult, leading to reduced feelings of social support.

Additionally, communicating with superiors seemed to have an overall increase in worker engagement, resulting in reports of overall increased quality of life. Mental health and general well-being were important factors to consider when analyzing the change in quality of life. The lack of self-care tactics was mentioned as having a positive association with depressive symptoms. This can likely be attributed to the reduction of healthy interventions for dealing with stress.

Furthermore, demographic factors such as occupation, age, and gender may play a role in the observation of worsened quality of life. More specifically, a healthcare career, being younger, and

being a woman led to increased depressive symptoms. Quality of sleep for WFH employees had a significant impact on feelings of stress, irritability, and tension. The articles had little to no contesting points about the effects that the remote work environment may have on quality-of-life outcomes for employees.

Job autonomy and flexibility were widely regarded as the main components of the remote work environment that seemed to influence quality of life. This is likely due to the similar interpretation among studies that indicate increased ability to schedule working hours during times that lead to decreased conflict with family commitments. The opportunity to carve out working hours that better fit an employee's schedule is viewed positively in reducing stress and work-life conflicts, and this leads to better work engagement and feelings of happiness. Similarly, previous studies reported the nature of the work as a factor when considering the impacts on quality of life. For those with more strenuous job demands and pressures, there were greater feelings of stress and decreased work engagement.

Our study contained a few limitations of note. The impact of age on productivity during WFH may be inconsistent due to the lack of sources for this point. Further studies would need to be conducted to develop a better understanding of the relationship. Our literature review contained a few significant limitations when considering quality of life as well. Other limitations included that not all studies were done in the USA. Some studies had a short follow-up period for social perception of their mental health (Shaukat et al., 2020). There were also potential confounding variables between work engagement and working from home: age, gender, marital status, family number per household, shoulder or back pain, mental disorders, health behaviors (physical activity, sleeping hours, not eating breakfast, drinking alcohol, and smoking), interactions (with supervisors and coworkers), working hours, type of job, workplace location, and SES (i.e., education, household income, and employee status; Amano et al., 2021). Across both productivity and quality of life analysis, many of the studies reviewed employed a cross-sectional study design, which restricted our ability to analyze the relationship of variables over time. Additionally, generalizability may be diminished due to many studies utilizing convenience samples, which are often susceptible to biases such as misclassification, selection, or confounding.

CONCLUSION

Remote work has become a standard operating procedure since the pandemic, and that trend is likely to continue. The literature revealed that working remotely can significantly impact quality of life. High autonomy and work engagement were positively associated with increased happiness related to working from home. Organizations should consider these factors when establishing remote working arrangements so that workers' quality of life is not negatively impacted.

CONFLICTS OF INTEREST

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

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