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**SHORT RESEARCH COMMUNICATION | COVID-19 AND REMOTE WORKERS**

## **Covid-19 and Neuro-Behavioral Economics: A Conceptual Framework to Improve Physical and Mental Health among Remote Workers**

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### **ABSTRACT**

Long-term home confinement during the ongoing COVID-19 can have negative mental and physical health consequences, which in turn can reduce productivity among those working remotely. We sought to delineate factors related to neuro-behavioral economics that employers should consider for their employees who are teleworking during the current Covid-19 pandemic. Physical and mental well-being are intertwined and are strongly correlated to high productivity at workplace. By integrating the factors of neuro-behavioral economics into the work culture, companies will alleviate work-related stress leading to improved mental and physical functioning; thus leading to increased productivity.

**Key words:** • Neuro-behavioral economics • COVID-19 • Teleworking • Mental health

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### **I. Introduction**

The world has witnessed many shifting paradigms in the way modern life was presumed since the COVID-19 outbreak in December 2019. There has been a huge impact on society, not only because of the health crisis, but also due to the unprecedented consequences on the economy and social life of individuals. By March, 2020, most of the countries around the world closed their international borders and imposed stay-at-home orders or lockdowns. This has created a very stressful and chaotic situation for many. Except for healthcare providers and

other essential workers, almost everyone has been forced to stay at home, work from home, do home-schooling with children, drastically minimize outings, reduce social interaction or work many more hours under stressful circumstances<sup>1</sup>. This has caused a major impact on daily functioning and mental well-being for everyone.

Due to the availability of internet, it is now possible to continue to work on our jobs remotely or telecommute, which was not possible just a few decades ago. Telecommuting has proven to be a lifeline, especially for those in sectors such as

technology, management, scientific services, finance and engineering. But due to the ongoing economic crisis and with the huge number of companies laying off, furloughing and cutting employee payrolls, work-related stress is bound to be at an all-time high. A whopping 83% of the United States workers have been reported to suffer from work-related stress. Stress causes almost a million people to miss their work, about 120,000 deaths and a loss of about \$300 billion to the American businesses<sup>2</sup>. Stress, when left untreated for a long time, could manifest into other mental and physical health disorders.

Long-term home confinement can have negative consequences upon physical and mental health<sup>3</sup>, which in turn can reduce productivity among those working remotely<sup>4</sup>. In this short research paper, we sought to delineate factors related to neuro-behavioral economics that employers should consider to improve physical, mental health and increase productivity of their employees who are teleworking during the time of the current Covid-19 pandemic.

## 2. Methods

We developed a conceptual model that describes the factors of neuro-behavioral economics and its pathways to improve physical and mental health; and increase productivity. Various components of neuro-behavioral economics were considered that could potentially contribute towards multiple aspects of improved physical/mental health and increased productivity among teleworkers.

## 3. Results

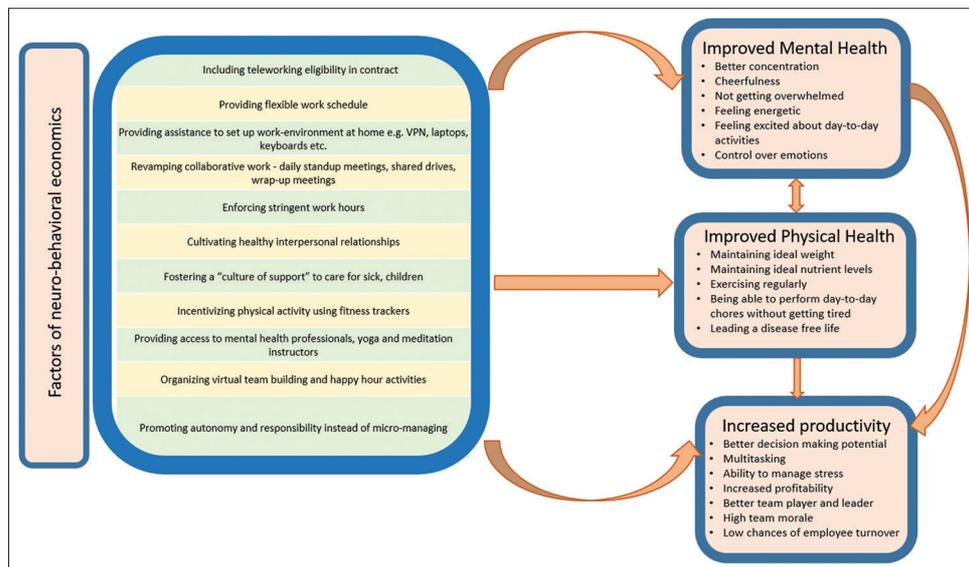
Figure 1 illustrates the linkage among neuro-behavioral economics, mental health and improvement in productivity among teleworkers. The factors considered include incorporating teleworking eligibility in the work contract; providing assistance and resources to set up work-environment at home e.g. ergonomic furniture, Virtual Private Network (VPN), hardware and software etc.; revamping collaborative work - daily morning and wrap-up meetings to track the status updates from each stakeholder; setting up shared

drives so that everyone can access the files easily; enforcing stringent work hours so that employees avoid over-working and burnout; cultivating healthy interpersonal relationships between the bosses and the employees so that they feel free to discuss any issues and concerns amongst them; providing access to mental health professionals, yoga or meditation instructors to improve mental well-being; organizing virtual team building and happy hour activities remotely so that the team doesn't miss those activities while teleworking etc. This could result in better mental health outcomes like enhanced concentration and focus, feeling energized and excited about day-to-day activities etc.; and could contribute towards markers of increased productivity such as being able to improve team morale, multitask, manage stress etc.

## 4. Discussion

There are remarkable benefits of working from home such as no commute, flexible schedule, custom environment, comfortable clothing and so on. But when home becomes the place of work, work-life balance can be very difficult to achieve and the boundary between personal and professional life becomes a blur. A study found that those who worked from home were more likely to go beyond normal work hours and to put in more efforts than required<sup>5</sup>. It is much more likely to feel burned out while teleworking. The companies should provide necessary resources such as access to mental health professionals, yoga and other fitness instructors etc. which could assist the employees to maintain their mental well-being and avoid burn-out.

Prolonged duration of home-confinement has been shown to be associated with negative lifestyles such as physical and social inactivity, poor sleep quality, and unhealthy diet behaviors, resulting in psychosocial and emotional disorders<sup>3</sup>. It has been reported that, physical inactivity is one of the top 5 risk factors that cost US employers billions of dollars annually, because of employees missing days of work<sup>6</sup>. During current Covid-19 pandemic, there is an increased likelihood for teleworkers to be glued to their chairs throughout the day and are less likely to indulge in any form of exercise



**Figure 1:** Conceptual framework of neuro-behavioral economics in improving mental and physical health and increasing productivity while teleworking during COVID-19 pandemic

regime with gyms, parks and walking trails closed. Lack of physical activity, coupled with unhealthy eating habits, can cause obesity, which is a pathway to a several health issues including cardiovascular disease, diabetes mellitus etc. By providing assistance to set-up a comfortable work environment at home and by incentivizing employees to partake in more physical activities, employers can make sure that their workers maintain physical well-being while teleworking.

Physical and mental well-being are intertwined and are strongly correlated to high productivity at workplace. When the employers make an effort to show that they care about their employees' health and well-being, the employees feel fulfilled; and put in more efforts to be productive at work. Improving teleworking experience could improve mental and physical health as well as social well-being. In addition, it will save the taxpayers billions of dollars of health care cost in the current pandemic. There is a high probability that many companies will adapt to this new norm of allowing their employees to work-from-home. By integrating the factors of neuro-behavioral economics into the work culture, companies will alleviate work-related stress leading to improvement in mental, physical and social functioning leading to increased productivity.

### Key Messages

- Long-term home confinement during the ongoing COVID-19 can have negative mental and physical health consequences, which in turn can reduce productivity among those working remotely.
- By integrating the factors of neuro-behavioral economics into the work culture, companies will alleviate work-related stress leading to improved mental and physical functioning; thus leading to increased productivity.

### References

1. Altana E, Baglioni C, Espie CA, et al. Dealing with sleep problems during home confinement due to the COVID-19 outbreak: Practical recommendations from a task force of the European CBT-I Academy [published online ahead of print, 2020 Apr 4]. *J Sleep Res.* 2020;e13052. doi:10.1111/jsr.13052
2. The American Institute of Stress. *42 Worrying Workplace Stress Statistics.* (2020) <https://www.stress.org/42-worrying-workplace-stress-statistics>. Accessed June 22, 2020.
3. Ammar A, Trabelsi K, Brach M et al. Effects of home confinement on mental health and lifestyle behaviours during the COVID-19 outbreak: Insight

from the “ECLB-COVID19” multi countries survey. 2020. doi:10.1101/2020.05.04.20091017

4. World Health Organization. *Mental health in the workplace*. (2020) [https://www.who.int/mental\\_health/in\\_the\\_workplace/en/](https://www.who.int/mental_health/in_the_workplace/en/). Accessed June 22, 2020.
5. *The downside to working from home? It's harder to actually stop working*. (2020). <https://www.today.com/series/one-small-thing/how-work-home-not-burn-out-t117088>. Accessed June 22, 2020.
6. Workplace Health Promotion | Centers for Disease Control and Prevention. <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/workplace-health.htm>. (2020). Accessed June 22, 2020.



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